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Working Paper

A COMPARATIVE EXAMINATION OF UNIVERSITY REVENUES AND EXPENDITURES

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October 1991

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Introduction

We consider a distribution of revenues and expenditures within the university to be more or less optimal only with respect to the choice of an objective function that is to be maximized by the university. For each unique function an alternative distribution of revenues and expenditures may be optimal. Therefore, although the distribution of revenues and expenditures at Western Kentucky University (WKU) is different than the distribution of revenues and expenditures at Eastern Kentucky University (EKU) and at Middle Tennesee State University (MTSU), each one may be optimal if the institutional objective functions to be maximized are different. We recognize that there is no single revenue and expenditure pattern that will appropriately fit all institutions under all circumstances. Nevertheless, differences in the distributions of revenues and expenditures at WKU and at EKU and MTSU may provide information crucial to the consideration of alternative distributions at WKU. Thus, one of our primary tasks was to examine the revenue and expenditure data at these universities for the existence of such differences.

Refections on University Accounting Systems

An examination of revenues and expenditures can be undertaken from either a micro or macro perspective. The former views revenues and expenditures (or the sources and uses of funds) from a disaggregative or "bottom up" approach, while the latter employs an aggregative or "top down" methodology.

The micro approach, for the case of the university, would initially view the financial impact of each unit separately and then aggregate the various units until a grand total for instruction, research, public service, academic support, institutional support, and etc. was reached. The advantage of this approach is that it allows decision makers to know with greater precision the impacts that the behaviors of particular units and the occurances of events would have on the university's overall financial profile.

While we would have preferred to follow this approach, we were unable to do so because of: 1) time constraints for completion of this project; 2) the lack of uniformity among the various universities in the way particular budget items are treated; and, 3) the very laborious, time consuming process that would have been required to undertake such an approach.

Thus, an aggregate approach has, by in large, been taken in this report. This approach starts with some grand totals and views them through time and compares them among institutions. Such an approach can yield useful insights

into the financial mosaic of the institution even though, by its structure, the fineness of detail is reduced.

For policy making purposes, administrators do need to know, at a minimum, what a particular program/unit's monetary revenues and expenditures are (or will be). Clearly, a non-profit institution might well decide to proceed with the operation of a specific activity even when its expenditures are less than its revenues. However, rational decision making is enhanced when this fact is known ex ante. The way in which accounts are currently portrayed at institutions of higher education makes it very difficult, if not impossible, to know how much certain activities cost -- even within one standard deviation.[1] Our primary concern here is that the

[1]This is certainly not to suggest that anything untoward or nefarious exists in the way the budgetary accounts are constructed or portrayed at WKU or elsewhere. The data are correctly arrayed to serve a variety of worthwhile purposes - many of them are externally imposed.

accounts are not presented in a way that makes them most useful for managerial decision making. Ergo, commitments to expand or contract activities, new and existing, have been made without much certainty about their budgetary impact. In turn, this can lead to ex post unpleasant surprises which, in WKU's case, often seems to have been absorbed by the Office of Academic Affairs, and, inter alia, the funding of faculty (where the total number of faculty positions and the average faculty salary are potentially impacted).

For the future benefit of the university, it is recommended that either an additional budgetary series be devised that would facilitate efficient managerial decision making; or, failing that, at least have units delineate with greater precision exactly where funds are spent and what activities they finance.

For a comparative presentation of university revenues and expenditures, consider the data in Tables 1 through 6 that portray the "unrestricted" revenues and expenditures by "nominal" categories for WKU and EKU and MTSU.

Table 1

SOURCES OF FUNDS: UNRESTRICTED REVENUES (in $s) BY NOMINAL CATEGORIES FOR WKU, 1986-90*

Year	'86	'87	'88	'89	'90
Tuition and Fees	10,584,552	12,312,203	14,808,265	17,139,317	18,833,212
Government Appropriations	37,812,703	39,758,636	42,493,800	43,257,253	46,005,129
Sales and Services (excluding athletics)	1,433,866	1,441,128	1,399,608	1,391,482	1,489,979
Athletics	1,269,413	1,396,784	1,191,469	1,269,239	1,183,700
Other	1,896,608	1,845,765	2,203,244	2,392,674	2,847,913
E & G	52,997,142	56,754,516	62,096,386	65,450,965	70,359,933
Auxiliaries	9,588,579	10,387,753	11,433,127	11,810,057	12,234,655
Total	62,585,721	67,142,269	73,529,513	77,261,022	82,594,588

*With respect to revenues, there are unrestricted, restricted, and total revenues. To the extent that the primary interest is in the potential for redistribution to the benefit of the university, we concentrate only on unrestricted revenues unless otherwise indicated. There are also direct and indirect revenues. We include only direct revenues unless otherwise indicated. Recognition that we include only direct revenues is particularly important in the interpretation of program revenues such as athletics. Indirect revenues associated with athletics would be included in such accounts as food service, bookstore, and student tuition and enrollment-generated appropriations. Thus, the term nominal has been used in the title for this table to indicate that we have not adjusted revenue categories for such interaccount phenomena.

Table 2

USES OF FUNDS: UNRESTRICTED EXPENDITURES (in $s) BY NOMINAL CATEGORIES FOR WKU, 1986-90*

Year	'86	'87	'88	'89	'90
Instruction	25,182,395	26,638,270	28,802,268	29,718,651	31,071,606
Academic Support	3,712,508	3,729,316	3,908,759	3,824,651	3,887,210
Institutional Support	6,445,790	7,153,257	8,008,592	8,604,086	8,636,726
O & M	6,782,014	6,875,413	7,386,755	7,567,788	7,798,710
Student Financial Aid	938,371	1,884,753	2,608,909	3,724,223	4,615,592
Student Services (excluding athletics)	2,574,712	2,729,584	3,046,678	3,170,363	3,450,146
Athletics	2,476,918	2,646,075	2,734,685	2,615,455	2,793,387
Research	101,909	127,213	108,017	189,790	214,745
Public Service	813,145	950,658	936,707	965,582	1,072,477
Libraries	2,313,553	2,576,751	2,805,640	2,798,644	3,005,663
Mandatory Transfers	1,828,793	2,023,583	2,482,414	2,520,458	2,535,261
E & G	53,170,108	57,334,874	62,829,424	65,699,691	69,081,523
Auxiliaries (including mandatory transfers)	9,771,415	10,308,930	11,283,506	11,724,155	11,789,698
Total	62,941,523	67,643,803	74,112,930	77,423,846	80,871,221

The difference in total revenue and total expenditure is equal to other transfers and additions (or deductions) and the net increase (or decrease) in fund balance.

Fund Balance	- 101,567	140,798	- 364,619	239,583	2,025,239

*With respect to expenditures, there are, as well, unrestricted, restricted, and total expenditures. To the extent that the primary interest is in the potential for redistribution to the benefit of the university, we concentrate only on unrestricted expenditures unless otherwise indicated. There are also direct and indirect expenditures. We include only direct expenditures unless otherwise indicated. Recognition that we include only direct expenditures is particularly important in the interpretation of program expenditures such as athletics. Indirect expenditures associated with athletics would be included in such accounts as maintenance, security, and university relations. Thus, the term nominal has been used in this table to indicate that we have not adjusted expenditure categories for such interaccount phenomena.

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Table 3

SOURCES OF FUNDS: UNRESTRICTED REVENUES (in $s) BY NOMINAL CATEGORIES FOR EKU, 1986-90*

Year	'86	'87	'88	'89	'90
Tuition and Fees	13,358,252	14,302,084	15,304,094	17,038,094	18,287,695
Government Appropriations	39,395,332	41,519,468	44,174,366	44,906,201	47,547,301
Sales and Services (excluding athletics)	1,078,191	1,174,733	1,176,005	1,273,626	1,443,314
Athletics	847,973	907,210	1,044,979	1,203,592	1,393,178
Other	1,932,712	2,263,084	2,599,574	3,098,945	3,284,044
E & G	56,621,460	60,166,579	64,298,927	67,520,458	71,955,532
Auxiliaries	11,349,336	12,097,414	12,631,447	13,226,756	13,779,728
Total	67,961,796	72,263,993	76,930,344	80,747,214	85,735,260

Table 4

USES OF FUNDS: UNRESTRICTED EXPENDITURES (in $s) BY NOMINAL CATEGORIES FOR EKU, 1986-90*

Year	'86	'87	'88	'89	'90
Instruction	25,399,101	26,656,064	28,878,329	30,031,531	32,609,450
Academic Support	5,171,038	5,270,264	5,631,455	6,573,485	7,213,232
Institutional Support	6,484,274	6,690,166	6,869,235	7,377,897	7,715,147
O & M	7,114,100	6,926,143	7,373,331	7,967,927	8,258,353
Student Financial Aid	699,554	751,360	751,818	913,391	1,050,800
Student Services (excluding athletics)	1,936,619	1,966,774	2,095,377	2,218,541	2,405,625
Athletics	2,265,128	2,354,251	2,473,816	2,601,165	2,706,168
Research	139,961	172,359	192,551	273,016	275,681
Public Service	1,327,614	1,385,799	1,663,694	1,348,536	1,713,206
Libraries	2,590,910	2,451,287	2,582,643	2,625,449	2,795,509
Mandatory Transfers and Unexpendeds	1,906,778	2,426,468	2,708,813	2,860,703	2,900,584
E & G	55,035,077	57,050,935	61,221,062	64,791,641	69,643,255
Auxiliaries (including mandatory transfers)	11,380,241	12,153,431	12,676,427	13,100,500	13,668,449
Total	66,415,318	69,204,366	73,897,489	77,892,161	83,311,704

The difference in total revenue and total expenditure is equal to transfers and additions (or deductions) and the net increase (or decrease) in fund balance.

Fund Balance	1,173,343	2,986,725	2,659,364	2,627,872	2,345,743

Table 5

SOURCES OF FUNDS: UNRESTRICTED REVENUES (in $s) BY NOMINAL CATEGORIES FOR MTSU, 1986-90*

Year	'86	'87	'88	'89	'90
Tuition and Fees	10,223,088	11,595,669	13,016,381	15,104,828	17,895,106
Government Appropriations	31,543,000	35,427,000	37,699,000	39,815,500	42,813,420
Sales and Services (excluding athletics)	484,271	425,803	497,919	544,851	502,064
Athletics	1,666,215	1,637,391	1,739,854	2,049,998	1,948,085
Other	1,336,351	1,459,415	1,454,906	2,412,568	2,808,804
E & G	45,252,925	50,545,278	54,408,060	59,927,744	65,968,479
Auxiliaries	7,586,726	8,020,309	8,358,536	9,062,406	10,001,125
Total	52,839,651	58,565,587	62,766,597	68,990,151	75,969,604

Table 6

USES OF FUNDS: UNRESTRICTED EXPENDITURES (in $s) BY NOMINAL CATEGORIES FOR MTSU, 1986-90*

Year	'86	'87	'88	'89	'90
Instruction	24,094,545	25,830,345	27,342,134	29,718,201	34,995,910
Academic Support	2,489,362	2,188,060	2,087,384	2,763,879	3,115,220
Institutional Support	3,784,620	4,117,346	4,374,313	4,449,065	5,182,062
O & M	5,451,226	6,018,902	6,257,423	6,390,432	6,395,086
Student Financial Aid	217,265	475,171	520,624	844,048	979,024
Student Services (excluding athletics)	2,775,126	2,840,404	3,073,861	3,447,638	4,392,878
Athletics	1,779,726	1,761,164	1,831,168	2,020,148	2,209,941
Research	165,577	148,883	149,448	203,151	237,419
Public Service	704,528	649,969	688,254	1,017,102	1,110,989
Libraries	1,673,972	2,021,820	2,039,235	2,590,781	3,047,672
Mandatory Transfers and Unexpendeds	219,828	5,803,150	6,543,039	6,807,973	1,544,188
E & G	43,355,774	51,855,213	54,906,882	60,252,416	63,210,388
Auxiliaries (including mandatory transfers)	7,367,653	7,735,9410	8,171,087	8,899,777	9,775,614
Total	50,723,427	59,591,154	63,077,970	69,152,193	72,986,002

The difference in total revenue and total expenditure is equal to transfers and additions (or deductions) and the net increase (or decrease) in fund balance.

Fund Balance	1,597,855	- 930,555	- 310,132	- 162,042	2,985,065

Employment/Salary Trends

Because of differing institutional priorities reflected in these data and differences in state appropriations, it should come as no surprise that faculty salaries on average differ at these universities. Consider the following comparisons.

Since the bulk of current expenses at WKU are made up of personnel costs, it is instructive to examine the employment patterns that have emerged. Tables 7 and 9 reveal the differing staffing trends, while Table 8 portrays the average faculty salaries at WKU and at EKU and MTSU in recent years.

Faculty

Looking at Table 7 one can quickly see that a decline in full-time faculty at WKU occurred between 1982 and 1986 (i.e. from 550 to 521). Thereafter, the number of full-time faculty increased. By 1990 it had reached the same value (i.e. 550) as had prevailed in 1982. In a rough fashion, the variation in full-time faculty mirrors that of enrollment (see Table 10), although the variability in the number of full-time faculty lags behind and is less volatile than changes in enrollment. For example, after reaching a level of 13,532 students in 1979, total enrollment began a persistent, but steady, decline (of 1.3% per annum) until 1984 when enrollment fell precipitously (i.e. by 7.0%). Total enrollment reached a level of 11,771 in 1985. Thereafter, it increased fairly steadily until it stood at

15,240 by 1990 (or, a 2.3% increase per annum).

It seems clear that the most significant change in faculty employment has been in the increasing reliance on ad hoc arrangements to staff WKU classrooms. This shift in the mix of faculty occurred during those years when total enrollment fell at the university as well as during years when enrollment increased. Both the absolute and percentage increases (viz. 138 and 89% since 1982) in the employment of part-time faculty have been significant. The general pattern of covering classes with less than full-time faculty was not unusual within the confines of American universities in the 1980. However, WKU's reliance on part-time faculty does seem to be a bit attenuated. Nationwide, the average number of university part-time faculty constitutes, roughly, 35-40% of the number of full-time faculty whereas ours currently runs slightly over 50%.

It should be expected that staffing classes in this manner would result both in a significant cost savings to the institution and the potential for significant increases in the average salary of the full-time faculty. This possibility exists both because part-time faculty are paid much less per course offering in terms of salary, and because the university eschews the costs of providing benefits when part-time versus full-time faculty are employed. This shift in the mix of the faculty should, ceterus paribus, also lead to an upward bias in WKU's faculty salaries relative to our peers. Such, however, has not been the case -- instead, the

reverse has occurred.

Looking at Table 8 one can easily see, as well, that in 1983 WKU's average salary for full-time faculty was above that of EKU and MTSU (i.e., $27,301 versus $25,884 at EKU and $24,950 at MTSU). Thereafter, the differentials narrow and, eventually, turn against WKU. By the 1990/91 academic year, WKU was paying less, on average, than our two comparative institutions (i.e., $36,595 at WKU versus $38,293 at EKU and $38,577 at MTSU). Put somewhat differently, WKU paid its full-time faculty, on average, 5-9% more than our comparative institutions in 1983/84, but by 1990/91 WKU was paying full-time faculty, roughly, 5% less than the comparative institutions. Hence, WKU has moved from paying relatively more to less during the last eight years. This same phenomenon can be demonstrated whether one compares the absolute dollar of salaries or the percentage change in salaries (see Table 8). WKU, on average, has increased salaries by a smaller amount than the other two institutions, and sufficiently smaller to result in a reversal of rank order.

Hence, the savings garnered from the shift in the mix of faculty at WKU has not resulted in an improvement in the welfare of the full-time faculty. These savings must have been used to finance other university endeavors.

In general, it seems somewhat paradoxical that the categories of employment other than faculty have exhibited

either a modest increase or, a significant decline in the utilization of part-time personnel while increasing dependence on full-time individuals. It is not clear why this differing employment pattern for faculty versus non-faculty staffing has been chosen. Perhaps the differing labor market conditions for such categories are the result of a conflicting confluence of events.[2]

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[2]Note that the data in Tables 7, 8, and 9 include individuals with faculty rank even though they are not directly involved in instruction. The extent to which the data include such individuals is indicated by the percent of total expenditures for academic support.

Non-Faculty Employment

The other categories of employment that have experienced "noteworthy" changes are: administrative, professional non-faculty, and, to a lesser extent, secretarial/clerical.

Administrative

The absolute number of administrative positions varies from the low to mid 90s in the early 1980s (see Table 7). Like full-time faculty, the number of administrative/executive positions declined when enrollment fell reaching its lowest value of 91 in 1985. Thereafter, the number of administrative positions rose until it stood at 104 by 1990 (an increase of 14.3% since 1985). It may be of some interest to note that the increase in administrative employment at WKU roughly parallels the nation writ large

(see Table 12). For all colleges and universities the number of administrative positions has increased by 14.1% since 1985. One should also take care to note that the size of the base for this category of employment is relatively small. Hence, any equal change in the absolute numbers would have resulted in a relative large percentage impact.

Professional Non-Faculty

Another category that has experienced significant change in the past decade has been the Professional Non-Faculty category (see Table 7). For the 1982 -1990 time period, the utilization of part-time employees in this classification has decreased (by 64%), while the number of full-time employees has increased (from 172 to 251, or 46%). Unlike the full-time faculty and administrative categories, the professional non-faculty category did not decline when enrollment fell. It continued to increase when enrollments subsequently rose as well.

The growth of professionals at WKU is not unique but symptomatic of a nationwide trend (see Table 9). At WKU, this employment category includes: academic computing, institutional research, accounting, libraries, some athletic staff, and some physical plant employees. Those few activities that are unique to WKU that would account for some of the increase at WKU are: the Campus Day Care/Head Start programs and the extent of media services (radio-TV).

With the advent of technological change (primarily in

the telecommunications, computer, and related software developments), one might, a priori, expect that some economies would have been realized in the professional non-faculty arena. This, in turn, would be expected to lead to fewer rather than more employees. Such, however, has not been the case.

Again, WKU is not unique here. Most universities in the United States have experienced the same phenomenon (nationwide the growth of professional non-faculty has been 28.1% since 1985 while WKU's was 24.9%).

What seems to prevail here is some kind of institutional "iron law" of input requirements. In trying to ferret out why this type of labor has increased in the face of technological change, the following rationales have been offered.

It may be that it takes a critical minimum size of individuals in these areas before any services can be provided. Once that critical mass is reached, then some economies of scale or scope can be realized.

Given budget limitations in the mid 1980s, little modernization of equipment and software was possible at WKU. Any increase in demand for output necessitated using the existing (viz. less than optimal) production technology. This, in turn, led to a fairly homogeneous increase in the need for labor inputs for any given increase in demand for university outputs. Since WKU has been (of late) adopting more technologically current systems where some capital/labor

substitution may be possible, some improvement in (viz. lessening of) demand for labor in these areas should be possible.

Another factor augmenting the employment of professional non-faculty has been the increasing requirements by external constituents at all levels (i.e., primarily government) for more accountability/record keeping from institutions -- both in general and for specific activities (i.e. student records, admission files, financial aid, etc.). While the societal requirement for more accountability by public institutions is understandable, it is often not realized that one of the costs of greater accountability is an increase in the size of the bureaucratic staff.

While all these explanations have a modicum of plausibility, it is unlikely that they provide a complete explanation. It may well be that once a service becomes available, the demand for it increases so that no fewer individuals are employed even with the adoption of advanced systems. This is especially true when there is no explicit price/cost to those requesting the service (i.e. they treat it as a "free" good). From the individual's or unit's point of view, there is no reason to economize on the use of, or demand for, service since they do not have to pay for it directly. Indeed, in most instances they will not even be aware of what the true cost of providing the service is. If an institution is to utilize its scarce resources in the most

efficient manner possible, then some kind of internal pricing scheme (even what is called a shadow pricing scheme) should be seriously entertained. Presumedly, this was the economic rationale for establishing overt prices and budgets for duplication and telephones. Until some kind of system that will encourage a change in behavior is implemented, there is no reason to expect that behavior in the future will be any different from the past.

Secretarial/Clerical

This category also has seemed to be impervious to the vicissitudes of enrollment. It has increased in years when enrollment fell and when enrollment rose (see Table 7). Overall, it has increased by 44 individuals, or 15.7% since 1982. Like the professional non-faculty category, the secreatarial/clerical category too seems to exhibit the "iron law" of service employment. Since 1985 WKU's employment in this category has increased by 9.9% while nationwide it has increased by 12.2% (see Table 9). Thus, judged by nationwide standards, growth in employment here has not been excessive.

Just as with the professional non-faculty category, technological change seems to have made very little change in the employment variable here. It does seem hard to believe that the technological changes in the information/communication system has been both capital and labor intensive. Perhaps what is at work is a more subtle variation of the public choice model of organizational behavior in which the

preference function of administrators is very important in explaining the behavior of the organization. The lack of an overt price/cost scheme here may also play a role.[3]

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[3]The transfer pricing issue will be addressed later in this paper.

Table 7

HUMAN RESOURCES AT WKU

NUMBER OF INDIVIDUALS BY LABOR RESOURCE CATEGORY

Year	FACULTY*		ADMINISTRATIVE		PROFESSIONAL NON FACULTY		SUPPORT PERSONNEL							
							SECRETARIAL CLERICAL		TECHNICAL		SKILLED CRAFT		SERVICE MAINTENANCE	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
1982	550	154	93	5	172	42	279	32	14	22	93	3	266	3
1983	550	166	95	3	189	7	288	23	11	3	97	1	261	0
1984	545	163	91	4	193	5	297	27	15	3	91	2	259	0
1985	527	167	91	5	201	52	294	41	18	13	89	3	271	2
1986	529	162	95	7	221	47	299	45	17	12	98	3	255	0
1987	521	254	97	6	225	11	305	45	15	3	96	2	258	0
1988	541	277	101	5	220	12	299	43	15	6	96	2	264	6
1989	550	290	102	5	230	12	310	62	18	4	95	2	270	14
1990	550	292	104	1	251	15	323	31	13	3	91	5	274	5
Absolute Change	0	+138	+11	-4	+79	-27	+44	-1	-1	-19	-2	+2	+8	+2
Percent Change	0	+90	+12	-80	+46	-64	+16	-3	-7	-86	-2	+67	+3	+40

Source: Office of Instructional Research, and Fact Book, various years.

*For the faculty measure, no distinction has been made between full-time faculty who may have been hired on a "temporary" basis versus a tenure track one. The part-time faculty category includes those hired on a "temporary" basis as well as regular faculty who have elected the early retirement option. This allows one to garner a clearer picture of the shift in the mix of faculty.

Table 8

AVERAGE SALARIES OF FULL-TIME INSTRUCTIONAL FACULTY

ALL RANKS 1983/84 - 1990/91

Year	EKU		WKU		MTSU	
	Number	Salary	Number	Salary	Number	Salary
1983/84	615	$25,884	550	$27,301	408	$24,950
1984/85	615	26,417	545	27,840	418	30,259
1985/86	597	27,254	527	28,945	437	31,845
1986/87	570	29,209	529	30,549	442	33,416
1987/88	575	31,476	541	31,955	444	34,738
1988/89	563	32,990	546	32,757	471	36,894
1989/90	573	35,004	550	34,199	528	36,667
1990/91	579	38,293	550	36,595	566	38,577
Absolute Change	-36	+12,409	0	+ 9,294	+158	+13,627
Percent Change	-5.58	+47.94	0	+34.04	+38.73	+54.62

Sources: Faculty Salary Data 1983/84 - 1990/91 Kentucky and Benchmark Institutions, Kentucky Council of Higher Education, March 1991.

Table 9

PERCENTAGE CHANGES IN FULL-TIME PERSONNEL, 1985-1990

	U.S. Universities[1]	WKU[2]
Full-Time Faculty	+ 8.6%	+ 4.4%
Administrative	+14.1	+12.1
Other Professionals	+28.1	+14.9
Secretarial/Clerical	+12.2	+ 9.9
Technical	+13.6	-38.5
Skilled Crafts	+ 9.8	+ 2.2
Service/Maintenance	+ 2.7	+ 1.1
Total	+12.8	+ 7.7

Sources: [1]Chronicle of Higher Education, August 14, 1991, A22.

[2]Office of Institutional Research.

Table 10

WESTERN KENTUCKY UNIVERSITY

FALL HEADCOUNT ENROLLMENT BY FULL/PART TIME BY LEVEL

Year	Undergraduate		Graduate		Total
	Full-Time	Part-Time	Full-Time	Part-Time	
1977	8866	1919	477	2228	13490
1978	8506	1794	453	2552	13305
1979	8534	2013	498	2487	13532
1980	8968	1813	410	2167	13358
1981	9184	1800	402	1788	13174
1982	8980	1798	413	1664	12855
1983	8767	1778	437	1684	12666
1984	8231	1616	414	1510	11771
1985	7705	1648	405	1501	11259
1986	8092	2184	384	1597	12257
1987	8888	2592	420	1620	13520
1988	9430	2579	414	1698	14121
1989	10152	2537	400	1732	14821
1990	10572	2558	396	1714	15240

Source: Enrollment Summaries.

Resource Allocation

In order to address the increased global competitive environment that most American enterprises face, many firms have undertaken changes in the way in which they allocate resources. These include financial restructuring, changes in inventory control procedures, greater fungibility in their assets and liabilities, and, increased attenuation between employee compensation and the financial performance of the firm. Most of the firms that have altered their resource allocation process have benefited from the change. While many business firms have altered their techniques, most non-profit enterprises (especially institutions of higher education) have not. In part this is apparently due to the different pressures and environments that impact non-profit entities. The lack of profit and cost signals permits non-profit firms the luxury of dealing with exogenous events with some detachment and lag. However, the changes wrought in the private sector have persisted long enough to provide a useful guide for imitative changes in non-profit environments.

Institutions of higher education face a number of problems that require a greater concern with efficiency (both static and dynamic), an enhanced desire to control cost by the central administration and its subunits, and a need to have greater flexibility to respond to changes in the demand for output. The historic ways of dealing with these issues significantly limit the degrees of freedom for decision makers and increasingly appear to be inadequate to the

challenges that currently confront institutions of higher education.

Appropriately modified, one could adopt those ideas that have proven most successful in the private sector and apply them to a university environment. There are many areas where such an analysis would be fruitful -- for example, the utilization of the rational intra-unit pricing of goods and services such as xeroxing, computers, libraries, telephones, etc. In addition, the increased availability of business-related, professional, and continuing education provided by the for-profit and in-house sector reflects the inability of the traditional educational establishment to provide such relevant knowledge and has led to a segmentation of demand that can be attacked.[4] However, despite this and other areas of potential interest, what follows in this report is limited to a consideration of alternatives in the way in which WKU allocates resources for faculty salaries.

[4]"Back to School" and "Weekend Warriors: A Guide to MBAs for Working Execs", Business Week (October 28, 1991), pp. 102-107 and pp. 109, 112-114, respectively.

WKU's standard approach to the setting of faculty salaries has been to take whatever was provided in the base for the previous year and then add to this some percentage amount as influenced by the decisions of the state. While we have, on occasion, made modest gestures to performance/bonus/market adjustments, these have been infrequent. The

overwhelming share of salary increases have been of an "across-the-board" nature. This posture has created a situation where the central administration (and, as well, the deans and department heads), essentially, lacks control over a substantial portion of the budget. It has also created a situation where some disciplines are paid more or less than is necessary in order to elicit the quantity and quality of faculty inputs needed to successfully provide desired outputs (some mix of teaching, research, and service). One hesitates to put in any specific discipline or department here as it will immediately raise someone's ire and any useful dialogue will end. Nevertheless, while some units are "paying too much", others have been prevented from "paying enough" for the efficient production of university outputs.

It is difficult to see how the central administration and its sub-units can acquire the necessary control over the salary portion of the budget unless the method of salary determination is altered. One technique that the private sector has used with very good results has been to determine one's salary on a modest base level combined with a significant portion that is of a performance/bonus/market nature. There is no reason that a similar approach could not be used by WKU. This would permit the central administration to take whatever funds are available for salary increases and redirect them to those areas that are most pressing. In turn, this would allow the university to shift resources much

more rapidly than is currently possible to areas that experience significant increases in demand for their output and away from those areas that experience a decrease in demand. This would also obviate the immediate need to eliminate positions in some particular area (as is the case under the present system) in order to meet the need in another sector. To be sure the funds would be shifted, but the anguish involved with shifting positions would not be as pressing. It would also permit relative salaries to more closely match their relevant values at other institutions or as dictated by the private sector. Those areas that presently have a salary that is relatively "too high" would gradually experience a decrease while those sectors that have a salary that is "too low" would experience an increase.

Such an approach would allow the central administration to, at least potentially, redirect the funds for each planning period. Ergo, the fact that one sector had received the bulk of the bonus funds last year/planning period, would not lock in the administration for the next year/planning period. In turn, this would permit them to significantly increase their ability to redirect resources and make the university more responsive to changes in conditions. Such an approach would also permit them to use part of the funds as a contingency if that were deemed the highest priority for a particular planning period. The premise would be that after the central administration had provided whatever funding for the performance/bonus/market component, that the various sub-

units would take these funds and allocate them in a similar fashion. That is, a particular college might well direct the funds to an area that was most difficult to recruit and not allocate them among departments in an "across-the-board" fashion. In fact, if the system is to have maximum results, it is necessary for the sub-units to design a method that encourages maximum performance. If market conditions differ by program, the university could either pay faculty members the same amount, but, if so, experience unequal quality by program, or pay faculty members different amounts to experience quality by program that is equal.

Although our present benefit system does not have the types of associated spill-over cost containment linkages that the private sector does, it may one day. If we do change the way non-salary benefits are calculated, then a performance/bonus/market system would have positive externalities. For example, since a significant percentage of one's salary would be variable one year to the next (i.e. one's base would be a smaller percentage of total salary), the associated insurance and other benefit costs to the institution could be reduced.

If we move to a performance/bonus/market system, it will be necessary to tell the faculty in more concrete terms than we have here-to-fore, just exactly what will be used to determine the allocation of the funds. We will need to tell them what quantitative and qualitative measures we will use to determine outstanding performance for teaching, scholarly

activities, and service. In order to enhance faculty attachment to the process, it would certainly help if some general parameters were specified for each activity and then let each administrative unit articulate the details -- subject to appropriate administrative review. In essence, the approach recently used to clarify departmental tenure and promotion criteria could also be utilized here.

Finally, when similar techniques have been used in the private sector, they have been most effective when the central administrative unit has clearly articulated the linkage between the ultimate goals of the firm and the structure of the incentive system. It would facilitate the process of production if a similar approach were used at WKU. Historically, we have not always clearly communicated the ultimate objectives of the institution. This has lead to an uncertain institutional position where we try to be many things for many constituents, if not all. With unlimited resources, any and all objectives may be attainable. In a period of very limited resources they are not. The administration would have to articulate the goals of this institution. At the margin, the administration would have to make choices from among the objectives, clearly communicate thesse to the faculty, and provide for faculty response so that the ultimate outcome is a shared one. The majority of the faculty can be expected to respond positively, but they need some clear statement of what the institution wantsto achieve, over what time period, and an incentive system that,

in fact, is perceived to be directly linked to these objectives.

Revenues

Since all the nominal dollar values portrayed in Tables 1 - 6 have increased, the significance of them may be occluded. Thus, it may be more instructive to consider the **relative** position of each category that constitutes an unrestricted source of funds for the universities. This data is shown in Tables 11 - 13.

Tuition and Fees, and Government Appropriations

In a general sense, all three institutions have experienced atrophication in the degree to which they have relied on state appropriations and a concomitant increase in the significance of tuition and fees. By 1990 the differences among the three institutions for these two major categories of funding are trivial. However, since WKU started with the lesser reliance on tuition and fees in 1986 and a greater reliance on government appropriations, the increase in tuition and fees has been the highest of the three. The commensurate (relative) decline in WKU's reliance on government appropriations is also the greatest.

Sales and Services

Relative dependence on revenues from sales and services (excluding athletics) at WKU and EKU are moving closer together and, by 1990, provide virtually the same percentage

of unrestricted revenues (i.e. approximately 1.8%). Both rely more heavily on this source of funds than MTSU (which is at less than 1%). Though WKU and EKU had virtually the same degree of financial reliance (relatively) on sales and services in 1990, this equality reflects a declining trend on WKU's part.

Given the burgeoning demand for short courses, CEU credits, training courses and the like by businesses to enhance the skills of their employers, there is little doubt that more revenues could be garnered in these arenas. Whether more effort should be placed on such activities depends on the mission of each institution and the trade-offs that would be encountered.

Athletics

The same trend is revealed in athletics -- the relative significance of revenues from athletics at WKU and EKU are almost the same (i.e. 1.4% vs. 1.6%), while MTSU's was higher (i.e. 2.6%). The relative direct revenue contributions from athletics at WKU has decreased in the last five years, while EKU's showed a modest increase and MTSU's a small decline (i.e. from 3.2% to 2.6%).

Hopefully, the recent moves to more vigorously promote WKU's athletic programs will bear fruit in future years so that revenues from this source will be enhanced (both absolutely and relatively).

Auxiliaries

All three institutions have experienced modest declines

in the relative significance of auxiliaries as a source of revenues. Given the increased enrollments each has experienced (which will impact the demand for housing, food services, etc.), it is not clear why this should be the case. Perhaps there has been a lag in adjusting prices to reflect current conditions. Indeed, the relative price for housing at WKU has, historically, been low.

Table 11

PERCENT OF UNRESTRICTED REVENUES BY NOMINAL CATEGORIES FOR WKU, 1986-90

Year	'86	'87	'88	'89	'90
Tuition and Fees	16.9%	18.3%	20.1%	22.2%	22.8%
Government Appropriations	60.4	63.1	57.8	56.0	55.7
Sales and Services (excluding athletics)	2.3	2.1	1.9	1.8	1.8
Athletics	2.0	2.1	1.6	1.6	1.4
Other	3.0	2.8	3.0	3.1	3.5
E & G	84.7	84.5	84.5	84.7	85.2
Auxiliaries	15.3	15.5	15.5	15.3	14.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Rounded to the nearest 1/10 of 1%. Totals may not equal 100% due to rounding.

Table 12

PERCENT OF UNRESTRICTED REVENUES BY NOMINAL CATEGORIES FOR EKU, 1986-90

Year	'86	'87	'88	'89	'90
Tuition and Fees	19.7%	19.8%	19.9%	21.1%	21.3%
Government Appropriations	58.0	57.5	57.4	55.6	55.5
Sales and Services (excluding athletics)	1.6	1.6	1.5	1.6	1.7
Athletics	1.2	1.3	1.4	1.5	1.6
Other	2.8	3.1	3.4	3.8	3.8
E & G	83.3	83.3	83.6	83.6	83.9
Auxiliaries	16.7	16.7	16.4	16.4	16.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Rounded to the nearest 1/10 of 1%. Totals may not equal 100% due to rounding.

Table 13

PERCENT OF UNRESTRICTED REVENUES BY NOMINAL CATEGORIES FOR MTSU, 1986-90

Year	'86	'87	'88	'89	'90
Tuition and Fees	19.4%	19.8%	20.7%	21.9%	23.6%
Government Appropriations	59.7	60.5	60.0	27.7	56.4
Sales and Services (excluding athletics)	0.9	0.7	0.8	0.8	0.7
Athletics	3.2	2.8	2.8	3.0	2.6
Other	2.5	2.5	2.3	3.5	3.7
E & G	85.6	86.3	86.7	86.9	86.8
Auxiliaries	14.4	13.7	13.3	13.1	13.2
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Rounded to the nearest 1/10 of 1%. Totals may not equal 100% due to rounding.

Expenditures

The expenditure that most directly affects faculty salaries is the expenditure for instruction. Tables 2, 4, and 6 provide the total dollar expenditure by category at each institution for the 1986-1990 time period.

Since nominal spending for instruction at each institution has increased, it may be helpful to consider expenditures is **percentage** terms.

Instruction

Looking at Table 17 one can easily see that instruction has constituted, roughly, the same percent of total unrestricted expenditure at WKU and EKU in the past five years (approximately 38-40%) while MTSU has committed a larger share to instruction (43-47.9%). When considering this data vis á vis faculty salaries, it should be kept in mind that for this time period EKU was reducing the number of full-time faculty, while WKU had a modest increase and MTSU had a significant increase (see Table 8).

It may also be helpful to consider the percentage changes that have occurred for instruction at each institution. These calculations are shown in Table 18. Clearly, the increases at MTSU (45.2%) in instructional funding leads both WKU (23.4%) and EKU (28.4%). In this particular comparison, WKU comes in last. This would indicate that instruction per se has had a higher budgetary emphasis at both EKU and MTSU than at WKU.

Perhaps the most telling institutional difference (reflecting prior administrative decisions) is that MTSU spent, roughly, $5 million more than WKU on instruction in 1990, while MTSU's total unrestricted expenditures were, roughly, $8 million less.

Table 14

PERCENT OF UNRESTRICTED EXPENDITURES BY NOMINAL CATEGORIES FOR WKU, 1986-90

Year	'86	'87	'88	'89	'90
Instruction	40.0%	39.0%	39.0%	38.0%	38.0%
Academic Support	6.0	6.0	5.0	5.0	5.0
Institutional Support	10.0	11.0	11.0	11.0	11.0
O & M	11.0	10.0	10.0	10.0	10.0
Student Financial Aid	1.0	3.0	4.0	5.0	6.0
Student Services (excluding athletics)	4.0	4.0	4.0	4.0	4.0
Athletics	4.0	4.0	4.0	3.0	3.0
Research	0.0	0.0	0.0	0.0	0.0
Public Services	1.0	1.0	1.0	1.0	1.0
Libraries	4.0	4.0	4.0	4.0	4.0
Mandatory Transfers	3.0	3.0	3.0	3.0	3.0
E & G	84.0	85.0	85.0	85.0	85.0
Auxiliaries (including mandatory transfers)	16.0	15.0	15.0	15.0	15.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Rounded to the nearest 1/10 of 1%. Totals may not equal 100% due to rounding.

Table 15

PERCENT OF UNRESTRICTED EXPENDITURES BY NOMINAL CATEGORIES FOR EKU, 1986-90

Year	'86	'87	'88	'89	'90
Instruction	38.0%	39.0%	39.0%	39.0%	39.0%
Academic Support	8.0	8.0	7.0	8.0	9.0
Institutional Support	10.0	10.0	9.0	9.0	9.0
O & M	11.0	10.0	10.0	10.0	10.0
Student Financial Aid	1.0	1.0	1.0	1.0	1.0
Student Services	3.0	3.0	3.0	3.0	3.0
Athletics	3.0	3.0	3.0	3.0	3.0
Research	0.0	0.0	0.0	0.0	0.0
Public Services	2.0	2.0	2.0	2.0	2.0
Libraries	4.0	4.0	4.0	3.0	3.0
Mandatory Transfers	3.0	4.0	4.0	4.0	3.0
E & G	82.0	82.0	83.0	83.0	84.0
Auxiliaries (including mandatory transfers)	18.0	18.0	17.0	17.0	16.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Rounded to the nearest 1/10 of 1%. Totals may not equal 100% due to rounding.

Table 16

PERCENT OF UNRESTRICTED EXPENDITURES BY NOMINAL CATEGORIES FOR MTSU, 1986-90

Year	'86	'87	'88	'89	'90
Instruction	48.0%	43.0%	43.0%	43.0%	48.0%
Academic Support	5.0	4.0	3.0	4.0	4.0
Institutional Support	7.0	7.0	7.0	6.0	7.0
O & M	11.0	10.0	10.0	9.0	9.0
Student Financial Aid	0.0	1.0	1.0	1.0	1.0
Student Services (excluding athletics)	5.0	5.0	5.0	5.0	6.0
Athletics	4.0	3.0	3.0	3.0	3.0
Research	0.0	0.0	0.0	0.0	0.0
Public Services	1.0	1.0	1.0	1.0	2.0
Libraries	3.0	3.0	3.0	4.0	4.0
Mandatory Transfers	0.0	1.0	1.0	1.0	2.0
E & G	85.0	87.0	87.0	87.0	87.0
Auxiliaries (including mandatory transfers)	15.0	13.0	13.0	13.0	13.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Rounded to the nearest 1/10 of 1%. Totals may not equal 100% due to rounding.

Table 17

INSTRUCTION AS A PERCENTAGE
OF TOTAL UNRESTRICTED EXPENDITURES
WKU, EKU, and MTSU, 1986-90

Year	WKU	EKU	MTSU
1986	40.0	38.0	48.0
1987	39.0	39.0	43.0
1988	39.0	39.0	43.0
1989	38.0	39.0	43.0
1990	38.0	39.0	48.0

Notes: Rounded to the nearest %.

Table 18

PERCENT CHANGE IN INSTRUCTION EXPENDITURES, 1986-90

WKU	23.4
EKU	28.4
MTSU	45.2

Notes: Rounded to the nearest 1/10 of a %.

Academic Support

The expenditures on academic support show a very modest (i.e. $75,000) increase at WKU in the past five years. (see Table 19.) As a percent of WKU's overall unrestricted expenditures, its share has declined by 1%.

Both EKU and MTSU have increased their absolute spending in academic support to a greater extent than WKU in the past five years (i.e. $2,100,000 and $626,000 respectively). EKU spends more (absolutely and relatively) than either WKU or MTSU on academic support. The difference appears to be accounted for by two factors: the size of EKU's Agricultural/Farm program is apparently quite large; and, EKU continues to run a lab school while WKU and MTSU do not.

Table 19
ACADEMIC SUPPORT AS A PERCENT OF
TOTAL UNRESTRICTED EXPENDITURES, 1986-1990

Year	WKU	EKU	MTSU
1986	6.0%	8.0%	5.0%
1987	6.0	8.0	4.0
1988	6.0	7.0	3.0
1989	5.0	9.0	4.0
1990	5.0	9.0	4.0

Note: Rounded to nearest %.

Institutional Support

MTSU has devoted less of its resources to institutional support than either WKU or EKU, (viz. 7% vs. 11% and 9% respectively). This is largely reconciled for by the fact that a number of activities which WKU and EKU undertake, individually, are financed in the Tennessee system by the central administration in Nashville (for example, legal services).

Operation & Maintenance

The relative importance of expenditures for operations and maintenance at the three institutions are, roughly, the same. Given the age of many structures at WKU and EKU, one wonders if this relative importance can continue. If more is to be undertaken here without impairing funds for faculty salaries, greater efforts for special requests may be warranted. EKU made such a special request in 1990 and obtained an extra $10 million for operation and maintenance.

Student Financial Aid

Both EKU and MTSU spend 1% of their unrestricted expenditures on student financial aid. WKU also spent 1% in 1986 but, thereafter, it steadily rose. By 1990 student financial aid stood at 6.0%. Most of this increase is attributable to WKU's greater reliance on incentive grants to stimulate out-of-state enrollments. This deployment of funds was a reasonable response taken when the institution experienced significant declines in enrollment. Since

enrollment conditions have now been reversed it would seem feasible to re-examine the size and extent of the incentive grant arrangement.

Student Services (excluding athletics)

There have been no significant changes in the relative expenditures on student services including athletics at WKU or EKU and only a modest (1%) increase at MTSU.

Athletics

Perhaps surprisingly (given the fervor/emotion with which expenditures on athletics elicits from both adherents and detractors) there has been no significant change in the relative importance of athletic expenditures at WKU, EKU, or MTSU.

Research

Although each institution does provide modest absolute support for research, its relative importance is less than .1%. Thus, when rounding to the nearest whole percent, it shows a zero value.

Public Services, Libraries, and Mandatory Transfers

Each of these accounts exhibited relative stability as a percent of unrestricted nominal expenditures and they are, roughly, of equal importance at all three institutions. This reflects, in the main, that the institutional missions of all three are very similar.

Total E and G

Total E & G expenditures at WKU have been virtually the same in terms of relative importance over the 1986-90 time period. EKU's E & G increased by 2% as did MTSU's. Of the three, MTSU's E & G (as a percentage of total expenditures) was the highest by 1990 (87% vs. 84% for EKU and 85% for WKU).

Auxiliaries

All three schools show a small decrease in the relative importance of auxiliaries as a percent of total expenditures. WKU's has decreased by 1% while EKU's and MTSU's decreased by 2%.

Net Fund Balance

Until 1990, WKU averaged very minor changes in its net fund balance (i.e. an average of -$75,000 per annum for 1986-89). By in large, WKU spent every dollar that it received on one activity or another. While this type of behavior will sustain current endeavors, it means that no surpluses were generated to fund future activities -- be they in the form of higher salaries or funds to address potential shortfalls in state revenues. Positive fund balances enable the institution to invest the funds in income producing assets. These will yield a flow of future income which can be used to finance whatever activities are deemed appropriate. WKU's behavior in 1990 is quite different than previously exhibited. In this year, an increase of roughly $2.3 million was recorded. If increases of this magnitude are continued in the future, the degrees of financial freedom for policy makers will be increased.

Of the three institutions, EKU has increased its net fund balance by the largest amount and in a very consistent fashion. For the five years shown, EKU has increased its net fund balance by $11.8 million. Simply by way of illustration, <u>if</u> these funds were invested and yielded a 7% rate of return, EKU would generate an income of $826,000 per year. Obviously, the exact amount earned would depend on the type of investment and, therefore, yield on the instrument(s). But, this size of an addition to the cash flow position of the university would be significant.

Since the increase in the fund balance has persisted for some years, it would seem reasonable to conclude that it reflects a deliberate policy action by their administration.

Actions at MTSU are not quite as clear cut. For the whole five years, their fund balance rose by $3.2 million. However, the path to achieving the outcome is not as consistent as EKU's. If would appear, however, that a conscious management decision to increase the fund balance has also been made at this institution. The $2.9 million increase in 1990 at MTSU was the largest of the group.

Formula-Generated Appropriations

Abstracting from concerns about differences in the distributions of expenditures, let us now turn attention to the differences in the sizes of state appropriations, themselves.

A great deal of angst and surrealism seems to surround the "formula" approach to the funding of higher education. To many it seems shrouded in a mist and as impenetrable as ancient Egyptian hieroglyphics prior to the discovery of the Rosetta stone. It has taken on a mythology all its own. At the mere mention of the term eyes become glazed, palms begin to sweat, and useful verbal interchange ceases. The approach to formula funding used by the Council on Higher Education (CHE) may be Byzantine, but its basic approach, in fact, is not that difficult to follow and some appreciation of the formula is needed when reviewing the budgets of institutions of higher education in the state.

Stripped to its barest essentials, the formula approach to funding can be portrayed as follows. The formula is composed of two strategic variables (viz. specified by the Council of Higher Education) and one instrumental variable (determined by the institutions in a nominal sense, but by society in a real sense). Based on salaries per faculty member by discipline at comparable institutions, student/faculty (S/F) ratios by discipline, and the three-year moving average enrollment for each institution, the desired (or full formula) funding per institution for

instruction is generated. The salary and S/F ratio variables are strategic, while the enrollment variable is instrumental. Funding for categories such as research, public service, academic support/libraries, equal educational opportunities, hospitals, student services, student financial aid, operation and maintenance of plant, and institutional support are added. All of these categories also contain strategic and instrumental components. Given political and economic vicissitudes, the actual funds available from the state are frequently smaller than the amount that the formula indicates should be approved. In this case, reductions in the monetary funding per institution are made.

Given this approach to funding, there are few policy variables that an institution can control in order to affect its funding level. Ceteris paribus, funding for Western is overwhelmingly determined by enrollment. The institution can implement actions designed to increase enrollment which will, albeit with a lag, increase funding. Unfortunately, these efforts may not have their maximum anticipated impact because the percentage of formula funding received may be decreased by the time that increases in enrollment would otherwise be manifested in increased appropriations. In addition, actions to increase enrollment are not costless. Indeed, the costs incurred to stimulate enrollment are incurred prior to any possible increase in funding. Thus, there is a sequential or timing problem inherent in the process. Therefore, a

thorough review of the incremental (or avoidable) costs versus the expected additional revenue forthcoming should be made prior to the initiation of actions to stimulate demand. It is not clear that, in the past, such a review has always been undertaken.

The other two variables in the formula over which an institution can exert some control (hence, they can be viewed as quasi policy variables) are the mix of student credit hours, and the extent to which an institution follows the implied S/F ratio utilized by the CHE.

The rate of funding per student credit hour for each discipline is not the same. In a very general sense, doctoral work is funded at a higher rate than masters level work, masters work is funded at a higher rate than undergraduate work, upper division work is funded at a higher rate than lower division work, and, finally, within classifications, some disciplines are funded at a higher rate than others.

If an institution chooses to, it could direct its effort toward that level of work funded at the highest rate. Apparently, this was one of the reasons that the University of Louisville recently announced the intention to place less emphasis on its undergraduate programs in general (and business in particular) and more effort on its graduate programs (the MBA program being emphasized). At least, the announced intention was consistent with such a reason.

WKU could employ a similar strategy, as well, if it so

chooses. The recent efforts to obtain a doctorate in Education and a masters program in Accounting should lead to a higher funding level although one should recognize that it will take several years before the full impact of such choices will be fully felt in funding levels. While the above discussion has concentrated on graduate programs, there is no particular reason that the same tactic could not be used at the undergraduate level.

It should be understood that this emphasis is <u>not</u> one that would find unstinting support among the faculty. Nor are we arguing that it is "the" approach that WKU should adopt. It is simply an option that has been used elsewhere and does exist for our consideration. By default WKU is already impacted by our prior decisions in this area. That is, simply as a result of prior decisions to emphasize certain programs over others, there is an impact on the funds that the institution eventually receives. However, this connection is seldom considered when new programs are initiated, or existing ones reviewed/emphasized over others. All such decisions have impacts on revenues and expenditures at WKU irrespective of which choice in the decision is made. All that is being suggested is that the impact on funding be considered a priori rather than ex post.

The S/F ratio utilized by the CHE in its funding approach can also be used as a policy variable by an institution. One might wish that a different approach or

ratio were used, but the reality of the situation is that the Council has specified (from a funding standpoint) what the supported S/F ratio is to be for each major academic discipline. To the extent that the actual S/F ratio of Western (or any higher education institution in the state) is greater than the one utilized by the CHE in its formula, WKU's budget benefits (it is larger than it otherwise would be for such a given level of employment) and more funds are available for any purpose (including faculty salaries).

Unfortunately, the reverse is also true. If the actual S/F ratio of Western is lower than the one the CHE uses, revenues to the institution are decreased (albeit with a lag).

For optimal resource utilization with respect to the formula, it may be desirable to have units behave in a way so that their S/F ratios more closely reflect the implicit ratio utilized by the CHE. Though we may not consciously utilize the CHE's ratio, the way we behave does affect the revenue received by the institution. One cannot escape the fact that the Council's ratio impacts us. The options open to WKU are to treat the formula with benign neglect, or to more actively use it in policy making decisions.

To the extent that an institution decides to offer academic programs that have a S/F ratio lower than that ratio implied by the formula, it should be clearly understood that this is done at the expense of some other unit -- it is not a free good. This connection is seldom made.

The benefits/costs to a department of changes in its S/F ratio are not directly felt by it and often they are not even aware of it. Even if, for example, a department would voluntarily increase its S/F ratio above that utilized by the CHE, the department or unit does not directly benefit. Similarly, if a department staffs classes such that its S/F ratio is much smaller than the Council's, the department or unit does not directly bear the cost of such behavior.

If an institution decided to do so, a close consideration of the Council's S/F ratio could be used for budgetary purposes. Apparently that is what at least one institution in this state has done. By utilizing this approach, the overall size of the faculty has been reduced and its mix altered. This is one significant reason that has permitted them to increase salaries at a higher rate than WKU's.

Where this approach has been utilized, it seemed be necessary to bring the actions/decisions of individual units closer to the ones by which they were funded. It seemed necessary to take the following types of actions.

1. Make it clear to each unit how deviations in their S/F ratios impact the financial health of the university. It is doubtful that most were previously aware of the impact that their actions have.
2. Install a budgetary system that will directly reward those departments that have a S/F ratio higher than the

Council's and impose costs on those that have a lower one.

3. Announce the process that will be utilized with enough advanced notice so that units can prepare for it.

Another approach that has been used elsewhere and that could be utilized here, as well, is to rigorously examine those activities that the state does not fund. If an activity is not in the formula, then the state does not fund the activity. In turn, consider whether the unfunded (or underfunded) and, therefore, subsidized activity is: a) in fact worth the subsidization from the academic side of the budget that it currently receives (what non-monetary benefits do we receive and are these really worth the dollars WKU is spending on them?); and b) should the unfunded, subsidized activity be significantly reduced or eliminated?

Such considerations simply reinforce the resource emphasis of the formula. It is, in fact, an approach taken by another university in order to enhance faculty salaries.

Let us now examine the percentage of full formula funding actually received by Kentucky's colleges and universities (see Tables 20 and 21).

These differences in state appropriations exist for several reasons. One is the method involving the 'use policy' for recommendations by the CHE for appropriations. Another is the relative effectiveness of special requests by individual institutions for funds outside the student credit hour basis for appropriations. Third, the larger nonresident enrollment at WKU results in a relatively large tuition

revenue deduction as directed by the formula. Further, and due to administrative decisions made some time ago, the relative large debt service at EKU results in a larger appropriation for expenditures also as directed by the formula. In addition, as previously noted, Operation and Maintenance fund receipts at EKU are approximately $1M more than our's.

One of the reasons that faculty salaries at WKU have not increased as much as EKU's is that Western has not faired as well in the receipt of funding. For the 1983/84 thru 1989/90 time frame, WKU averaged 88.0% of full formula funding while EKU averaged 90.5%. Thus, on average, WKU has received 2 1/2% less than EKU and 2 1/2% of larger and larger amounts. Given annual state appropriations between $32.3 and $45.5 million (for the time period covered), this means that WKU received $900,000 - $1.4 million less to budget for expenditure for <u>any</u> purpose -- including faculty salaries. Since a 1% increase in total E & G employee compensation requires, roughly, $0.50 M, the smaller funding for WKU implies, very roughly, a 2% <u>lower</u> salary than would otherwise have been the case for employees included. It should be noted that such a total includes employees other than full-time instructional faculty. A 1% increase in total full-time instructional faculty compensation requires only, roughly, $0.25 M.

Table 20
KENTUCKY UNIVERSITIES
PERCENT OF FORMULA FUNDING
1983/84 through 1989/90*

Year	KSU	MTSU	EKU	MOSU	WKU	NKU	UK	UL
1983/84	96.0%	88.0%	91.0%	88.0%	88.0%	82.0%	82.0%	80.0%
1984/85	93.2	86.4	88.7	86.5	86.1	80.5	80.5	79.3
1985/86	92.6	86.5	88.7	86.6	86.3	81.0	81.0	80.4
1986/87	93.7	94.7	91.7	94.5	91.8	84.2	84.2	85.3
1987/88	95.0	96.1	93.6	95.9	93.7	86.6	86.6	88.1
1988/89	95.4	97.0	90.1	89.7	86.8	83.8	83.8	84.4
1989/90	95.1	96.3	90.0	86.4	83.1	84. 3	84.3	83.9
Average	94.4%	92.1%	90.5%	89.7%	88.0%	83.2%	83.2%	83.1%

*Rounded to nearest 1/10% .cw7

Table 21

PERCENTAGE OF FULL-FORMULA FUNDING RECEIVED

1983/84 through 1990*

Year	EKU	WKU
1983/84	91.0	88.0
1984/85	88.7	86.1
1985/86	88.7	86.3
1986/87	91.7	91.8
1987/88	93.6	93.7
1988/89	90.1	86.8
1989/90	90.0	83.1
Average	90.5	88.0

*Rounded to Nearest 1/10%

The difference in formula generated funding implies a 4% lower salary for full-time instructional faculty than would otherwise have been the case -- twice that which has previously been considered to be possible.

Alternatively viewed, if WKU had received the same percentage of formula funding as EKU, the average salary for all E and G employees in 1989/90 would have been $34,883 instead of $34,199. If only full-time instructional faculty are included, the average salary in 1989/90 would have been $35,567. This would have gone a long way toward narrowing the disparities in salaries that currently exist.

From a broader perspective, it is interesting to note that for the 1983/84 - 1989/90 period, WKU has ranked 5th in the state in terms of the percentage of full formula funding received. Kentucky State, Murray, Eastern, and Morehead have all received a higher average percent of full formula funding. Only Northern Kentucky State, the University of Louisville, and the University of Kentucky ranked below WKU.

For differences of this magnitude to persist for a number of years (as has been true for WKU), suggests that the differential is not an "error" or random disturbance term. Indeed, it is not obvious why WKU should rather consistently have received a lower percentage of full formula funding compared to other institutions in the state, and EKU in particular, other than those previously mentioned. In terms of the "normal" academic criteria utilized to compare institutions (viz. enrollment, types of degrees offered,

etc.), WKU and EKU are very similar. Nevertheless, there are several reasons that differentials in appropriations exist and several, though fewer, that differentials in the percentage of full formula funding exists.

The persistently favorable (relatively) treatment of other institutions vis á vis WKU leads to a growing wedge or gap between WKU's budget and others in the state due to compounding. This wedge exacerbates any existing salary differentials among the institutions.

In the past, WKU seems to have frequently addressed unpleasant budgetary surprises by reducing the budget of the Office of Academic Affairs.[3] See Table 22 for a list of such

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[3]Leaving aside the most recent (i.e. 1991-92) and largest (i.e. approximately $2.4 million) mandated reduction in state appropriations, it is worthwhile to consider the vicissitudes in state support for WKU in the decade of the 1980s. Table 13 reveals the series of convoluted reductions in state support stemming from unexpected shortfalls in state tax revenues.

There were a total of four reductions in WKU's budget imposed by the CHE in the 1980s. Each reduction decreased the base of support used in calculating subsequent year's funding level. Consequently, while the aggregate reductions in the 1980s totals $4,628,000 million, this <u>understates</u> the real impact on WKU's funding. However even using this conservative measure, and under an assumption of continuing reductions at similar magnitude, WKU's average salary could have been approximately 1% higher per year without these cuts. This calculation assumes that every 1% increase in faculty/staff salaries approximately $500,000. If one includes onlyy full-time instructional faculty the potential percentage increase in salaries would be 2%.In turn, this would have made the average salary in 1990 approximately $37,900 instead of its actual value of $36,595.

Hence, a significant improvement in the average salary could have been made with the absence of these unpleasant budget surprises.

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budgetary surprises. The associated reduction in full-time faculty is but one example of a general phenominon. Since Academic Affairs consumes such a large part of the overall budget, it may seem reasonable that it be the first unit to be reduced in times of exigency. However, the continual ad hoc reliance on a reduction in the budget of this unit impairs the longer run academic quality of the institution and seems to reflect either a lack of careful advanced planning by prior administrations or a deliberate choice to do so. The seeming "necessity" to drain funds from Academic Affairs whenever a significant revenue shortfall arises is, in part, a reflection of the lack of the establishment of an adequate contingency fund in those years when funding was relatively high.

It is not clear that, in the past, any meaningful "what if" simulations have been undertaken. Rather, when a monetary problem arises, it seems to have been "solved" by moving funds from whatever unit seems to offer the least difficulty (as perceived by the individual or individuals doing the moving) at that moment. If some positions in faculty or staff are unfilled then the prevailing attitude seems to have been that these funds can be utilized first. Presumedly, it has been thought that not filling previously existent faculty or staff positions is less contentious than a reduction in expenditures elsewhere. It is not clear that the funds have been systematically returned to units

adversely affected at a later time when adjustments in the budgets of all units would be possible. What seems to be needed is a clear articulation of the goals/activities of the university that are of paramount importance, those that are of much less significance, and those that are nice to have but not crucial. Some kind of priority scheme needs to be established so that when changes must to be implemented, they can be made in a systematic way that does minimal damage to institutional efficiency, goals, morale, and involves a process that the various constituents of the university would know about in advance. Such a planning scheme would be similar in intent to Western XXI.

In the scheme of things, universities must consider the consequences of two alternatives: new endeavors and the expansion of existing endeavors. Within the preference function of administrators, these two objectives seem not to have been viewed (though they are) as substitute goods. It should be recognized that universities can not engage in one endeavor to a greater extent without having to engage in others to a lesser extent than would otherwise be the case without such a preference. Any increase in visibility that results from engaging in new activities must be done at the expense of an increase in existing ones that would otherwise be possible.

Certainly, efficiency would be enhanced, if a monetary incentive system were to be developed so that individuals and individual units could receive financial rewards if they

achieved a given outcome at lower cost, or a higher output at the same cost. The way that the institution is structured now, there seems to be no perceived benefit to individuals or units (and some possible future financial harm), even if less is spent to achieve a given output. This will require a change in the incentive system as well as a clear, reinforced message from the administration, that such efforts are desired and will be rewarded with certainty.

Table 22

REDUCTIONS IN WKU'S STATE APPROPRIATION

1980-1990

Year	Value of Budget Reductions
1980-81	$2,222,100
1981-82	1,231,500
1986-87	590,200
1987-88	584,400
Total	$4,628,000

Transfer Prices within the University

Money is, of course, the most fungible asset mankind has been able to devise. However, the budgeting process, or at least the Weltanschauung brought to the process, has become so Balkanized, that funds are treated in a compartmentalized (not shiftable) fashion. Such a rigid structure can result in unwarranted inefficiencies as units devise ways which simultaneously expand their compartmentalized domain and make it more difficult to shift existing funds from their endeavors to the endeavors of other units. If every unit appreciated the fact that there are opportunity costs for the actions that they undertake (i.e., if every unit appreciated the fact that an increase in an expenditure of funds on one activity must be associated with a decrease in an expenditure on some other activity), efficiency would be increased. It is required for efficiency that the budget be more flexible, instead of a noninterlaping, set of discrete accounts. Recent decisions allowing the pooling of funds are consistent with this suggestion.

The age of "in loco parentis" has atrophied at universities around the country insofar as students are concerned. However, the treatment of budgetary units has remained as before. In the majority of cases, central administrations still decide the amounts to be spent on support units (viz. computing, student life, etc.). Subunits, then, request outputs from each support unit (so many CPU's or whatever) at no explicit price to the subunit.

This structure of decision-making has been found in other organizations to lead to inefficiencies particularly in the distribution of expenditures (why not request some computer time to test a data set to see if it might be useful for a research idea -- even if the prognosis is not very good at the outset, there is no direct cost to the individual to demand extra computer time and, who knows, once in a while you may get lucky). Under this structure, it is not surprising that support units can continually show administrators that the quantities demanded of their outputs exceed quantities supplied and that they "need" more resources.

An alternative, more efficient approach would be to have a bare minimum budget to support units directly but, in accordance, increase the budgets of those units who are "buying" the output of these units. Let each subsidiary budgetary unit have funding to purchase whatever they want in the way of computing, etc. In turn, a price is established for computing. Each unit then could decide how much computing to purchase - if they find a way to get by with less in the way of computing, allow the unit to use the funds for faculty salaries, travel, or whatever. The individual departments may also be allowed to purchase the output from outside vendors, as has been allowed elsewhere, <u>if</u> they can do so at a lower price. This approach would stimulate competitive outcomes and enhance efficiency (viz. more is

produced at a lower price/cost).

While the example used above is computing, this is simply by way of example. There is no reason that it could not be applied to other areas of the university.

There are several techniques for the determination of a distribution of expenditures that can be expected to approximate optimality. One of these that has found widespread use in large organizations (especially large corporations), is the establishment of appropriate transfer prices for the exchange of goods and services between various divisions within the organizations.[5]

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[5]For an example of how a public institution has used a price system to distribute space, see William J. Boyes and Stephen K. Happel, "Auctions as Allocation Mechanisms in Academia: The Case of Faculty Officies," Journal of Economic Perspectives, v. 3 (Summer 1989), pp. 37-40.

Administrative officials charged with implementing a successful transfer pricing scheme of some sort have been aware that the following issues would likely surface sometime during the study/implementation process.

1. The array of benefits and costs that will flow from any change must be specified as precisely as possible. The usual tendency is to do the reverse; to just say that a price of some amount will now be charged for computing and that the resulting savings will be used for the "general good" of the university. Those who perceive themselves to have "lost" in

the change will form a political pressure group that will resist the change while those who benefit (not being clearly identified) will not coalesce to support the concept. Therefore, the proposal is likely to face a hostile reception early in its implementation. To address this problem, it has been helpful in other organizations to explicitly identify benefits (monetary and non-monetary) -- likewise costs. For the benefits, it has also been helpful to show what/who will gain from the new procedure so that they will be supportive of the change and provide some political offset to those who will not want the change because of perceived loss.

2. Moving from a system that does not charge explicit prices to a system that does will garner objections from some individuals and individual units who: 1) do not like change per se; 2) perceive they will lose and object to this particular change; 3) philosophically are opposed to a price system to ration scarce resources; or 4) are simply economically ignorant. At the start of the process, one must, somehow, get through all the frenetic Sturm und Drang and make it clear to all constituents that, even if we are <u>not</u> currently explicitly assigning prices to goods and services provided, this does <u>not</u> mean they are costless. They do cost the university something already. Simply put, the current system does not make costs/prices readily recognizable to everyone. Some individuals and units benefit from this ignorance. But, though explicit prices/costs are not imposed, resources do flow into and out of areas and

individuals do respond to them (i.e., the implicit or "shadow" prices) -- and resources are allocated.

3. Realize that there is a sequencing problem and bring it to the forefront. It may not be clear that the issue can be "solved" in advance, but at least the body politic can be made aware that the problem is known to exist and that ways are being considering to address it -- seek their advice. The problem is that when one changes from a system where limited (perhaps no) price information is available (or charged) to one where prices exist creates angst. If the whole range of price changes (and budgetary resources) were known in advance (i.e. before any one change was introduced), this would provide a consistent mosaic which should reduce uncertainty and placate many individuals. They may not like selected parts, but where other parts are fine, they will be supportive of the overall process. The difficulty is that, normally, all these changes are not known in advance. One or two may be implemented, experimented with to see how they will work at the institution and what modifications need to be made, etc. Then, one moves to the next area (say library services, or health services, etc.) and the process is repeated. Since one is dealing with one or two at a time, the resistance to change will be larger - those who feel (sometimes correctly) that they have lost in the process will put up all kinds of roadblocks to this specific change which they might well not have done, if they had also known of

subsequent changes where they would benefit. In general, it has been particularly helpful in other organizations that one be aware of the sequencing issue.

The application of transfer prices for the exchange of goods and services between various divisions within the university can be either explicit or implicit. If the application is explicit, various behavioral changes would be expected to result as a rational response to the application of such prices. Transfer prices exist independent of the conscious application of such prices in the sense that even zero ($0) is, in fact, a price on the basis of which economic agents would act. To say that one does not want to apply transfer prices to goods and services exchanged between divisions within the university is to say something that is, instead, possible -- one may not want to apply transfer prices. But to imply, therefore, that there will be no transfer prices is to say something that is <u>not</u> possible -- there will be transfer prices equal to zero, if only by default.

If the application is implicit, such behavioral changes would not be the expected consequence, where the quantity of goods and services exchanged are fixed by authoritative decisions -- even if arbitrary. It is possible to fix the quantity of goods and services at the level that would otherwise exist under an explicit application of transfer prices. However, under such a circumstance the goods and services would nevertheless have to be rationed on the basis

of some price other than the money price. It might be first come first served, social harassment, reciprocal barter, or on the basis of some other non-pecuniary variable. With the explicit application of transfer prices and the associated allocation under a two- or more- price system, the mix of university outputs is affected. Will the implied mix of university outputs be more or less consistent with respect to the goal of the university than that which would result with zero prices? Reasoned considerations and empirical evidence suggest that the answer is yes.

The expected consequence of an assignment of the optimal intra-university prices would be the efficient production of university outputs. Such an efficiency can be considered either as the maximization of university outputs given the upper limit on expenditures, or the minimization of expenditures given the lower limit on university outputs. Within the university, it may be the case that the behavior of each decision maker is consistent with such an efficiency with respect to those specific constraints applicative to the behavior in question, but inconsistent with such an efficiency for the university as a whole. It is this potential paradox that is the reoccuring theme of arguments for the implementation of intra-university prices.

This concern with intra-university prices is consistent with societal concerns with respect to costs and quality in higher education. Given the large aggregate expenditures for

higher education, it is not unexpected that such concerns exist. There is a considerable literature that attempts to identify the influence of several factors on university outputs. But typically absent from those attempts is the set of intra-university prices that affect what is, after all, the efficiency of production for higher education. Few incentives in terms of rewards or punishments exist to cause decision makers to make marginal adjustments under the existing scheme.

As is true with respect to the consideration of most alternative arrangements, potential benefits associated with such arrangements should be carefully considered before a choice from among the arrangements is made. The efficiency results associated with an intra-university pricing structure are several.[6] Such a system recognizes that the intuition

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[6]A statement of results previously has been made by David Breneman in a Ford Foundation report on quantitative research to assist administrators in the management of complex systems. As a potential prototype, Breneman and others considered a plan for the pricing of university space. The plan is constructed with the minimum necessary changes in traditionl budgetary structures to allow for such a pricing. The responsibility for the assignment of space -- for teaching, research, office, lab., and other university service -- was made that of the dean of the college within which such activity occurs. Deans, it was suggested, would include a line in departmental budgets for space. Heads would be allowed to trade allocations within various lines (categories), consistent with market behavior. Starting at the departmental or college level allows for the pricing of space without what by be perceived as the prohibitive task of pricing space across campus as a first step. Where a particular space is in controversy between two departments, the dean could appropriately "sell" that space to the department that makes the highest bid for that space.

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that economic agents directly involved with the production of university outputs are more likely to know what is efficient in the production of those outputs than others not directly involved.

Several colleges and universities have established internal prices for the transfer of goods and services (mostly services) between the various divisions within those institutions. Nowhere, however, does it seem that prices exist to the full extent suggested by the tranfer pricing model of efficient organizational behavior. The most extensive set of internal prices with which we are familiar are those at Carnegie-Mellon, the University of Vermont, and Washington University at St. Louis.

All colleges and universities have a transfer pricing system, irrespective of their recognition of such a system. For those colleges and university administrators that are unaware of the implications of intra-university pricing, those prices are often equal to zero. Computer center services, for example, are often priced to individual faculty members involved in research at a zero price per unit of service. Although such a price can be viewed as a subsidy in the production process for research output, that assignment has consequences that may not be in the best interest of that college or university. It may be expected that an assignment of a price equal to zero will lead to individual faculty member behavior that is inefficient: more empirical research

and less theoretical than is optimal; increased numbers of regression runs "just to see", irresponsible mistakes in programming, and "too frequent" requests for help given moral hazard. Certainly, the quantity of computer center service demanded by the individual faculty member is greater at a price equal to zero than the quantity that would otherwise be demanded at the actual price to the university.[7]

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[7]It may be such that some transfers of goods and services can not be priced at average cost without associated welfare loss. And, it may be that some tranfers -- even if priced at marginal cost -- would require expenditures associated with necessary monitoring that are greater than the sum of revenues that would result from the assignment of such prices. Explicit pricing schema do entail transaction cost as the 1991 Nobel laureate, Robert Coase, has demonstrated.

In General

In response to the basic question of why salaries have lagged behind at WKU versus EKU and MTSU, or any other comparable institution, the answer is many-fold. Among them, it is noted that WKU has suffered from the receipt of unpredictable and relatively low levels of funding in the form of state appropriations. In addition, prior WKU administrations apparently have not made clear and consistent commitments to increases in faculty salaries found at comparable universities. One is not talking here about an examination of public pronouncements about how serious the university has been with respect to this issue. Rather, one has to judge by results. As an institution, we have not placed as much explicit emphasis -- even with funds that we have received -- on raising faculty salaries as is apparent at comparable institutions.

After looking at reams of data, one is struck by the fact that WKU is suffering from a "1,000" cuts, each one sapping its basic educational (viz. instructional) strength. In the past, WKU has taken on new endeavors and/or expanded existing activities that must be financed -- even if they are not included in the formula for funding provided by the state at amounts greater than those which are funded. Clearly, these are choices the institution has made and, indeed, we recognize that they may be appropriate with respect to the choice of an objective function that is to be maximized by the university. Nevertheless, even if appropriate with

respect to the choice of an objective function, they have consequences. And one of the consequences is that faculty salaries are relatively low. There seems to be no one place where masses of funds are lying idle. Instead, there are many which drain financial resources from faculty salaries.

Appendix A

Additional Ideas for Consideration

1. With respect to grants, as sources of funds, WKU does not seem to treat these in a way that maximizes incentives to the individual or unit that garners them. The "off" and "on" return of a portion of overhead from grants lessens the desirability of seeking grants by those who must do the diffucult work to obtain such grants. Alternative treatments of grants would be expected to increase the number of grants received.

2. The way the we treat part-time faculty may invite inefficiency and, hence, potentially absorbs funds that could be used elsewhere. The prevailing view by decision makers seems to be that the dollars available for part-time faculty employment are pactically open-ended. It seems to be the view that whatever funds are spent for part-time faculty are separate and do not impact funds for full-time faculty. It is very difficult to have a new full-time position authorized -- lots of documentation, justification is required (as it should be). Alternatively, it is very easy to offer additional sections of courses covered by part-time faculty. It one goes over budget (as often happens), no cost seems to be incurred for the unit that makes this decision -- additional funds are simply received to cover the expenditure. On the other hand, if a unit spends less on part time faculty it may not be able to use the funds elsewhere -- pooling of funds by unit does not yet include

this type of expenditure. Such treatment invites inefficiency -- sections may be increased in numbers beyond those that would be optimal (they and those taught by full-time faculty may have less enrollment than otherwise would be the case). Again, the point is that a % here and a % there and pretty soon it is no wonder that WKU faculty salaries are less (relative to schools compared in this report).

3. Continued review of fees charged for services (when beneficiaries can clearly be delineated) should be made -- as has recently been done for the shuttle service, graduation, computers, and, perhaps the health service. All fees should be systematically (on some time frame) reviewed. One additional fee that can be considered is a fee for application to the graduate college. We apparently have not previously charged one in the past. This lack of a positive price leads to a larger quantity of resource inputs devoted to handling the larger quantity of applications than would be the case, if a positive price were charged. To the exent that students risk no pecuniary cost by applying, frivolous applications are encouraged.

4. J. Robert Wirag's report on the Student Health Service suggests several alternative ways to establish a system that would, by in large, pay for itself. Since the current method of financing has required funds from the general fund, it constitutes a drain on general university resources. Additional fees that cover the expenses for this service to reduce the general funding drain are needed. The current

health fee of $12.50 and the charge of a $5 fee for visits to the health center are appararently low. Charges for clinical tests are "below reasonable and customary charges." The charges for pharmaceutical products do "not cover the costs of providing them." Either the fees for the service should be increased to eliminate the deficit (and drain on general university funds), or a way to have an external group (HMO or similar organizations) should be considered. It should be recognized that such an external group may, nevertheless, be located on campus.

5.

Table 1A
UNRESTRICTED REVENUES AND EXPENDITURES FOR AUXILIARY ENTERPRISES
WKU

Year	'86	'87	'88	'89	'90
Revenues	$ 9,588,579	$10,387,753	$11,433,127	$11,810,057	$12,234,655
Expenditures	9,771,415	10,308,930	11,283,506	11,724,155	11,789,698
Net	- 182,836	78,823	149,621	85,892	444,557

Source: Annual Financial Reports, various years.

While the average dollar figures are not all that large in budgets of $70-$80 million per annum, auxiliary enterprises can be yet another in a long line of claimants on the university's scarce resources. It may be hoped that the relatively larger surplus generated in 1990 is a harbinger of the future. Despite the recent surpluses, two questions still remain to be answered that are crucial to their

administration. Are revenues as large as they could reasonably be expected to be? Are expenditures as small as they could reasonably be expected to be?

6. Reconsider the incentive grant allocation. Is the current structure of tuitions (prices) revenue maximizing?

7. Consider some alternative ways to generate revenues from temporary surplus funds through innovative funds management (MTSU uses "repos").

Appendix B

DEFINITIONS: CURRENT FUNDS REVENUE CLASSIFICATIONS

Educational and General

Tuition and Fees

All charges (net of refunds) against students for educational and general purposes. Tuition and fees should be recorded as revenue even though there is no intention of collection from the student. The amounts of such remissions or waivers should be recorded as expenditures and classified as scholarships and fellowships or as staff benefits associated with the appropriate expenditure category to which the personnel relate. They include all charges which must be paid by a student; for example, as a condition for: (1) applying for admission to the institution, (2) enrolling in the institution, (3) enrolling in specific courses (e.g., breakage and lab fees), or (4) graduating from the institution or receiving a transcript.

Charges for room, board, and other services rendered by auxiliary enterprises are not included in this category, but are classified as auxiliary enterprise revenue.

Governmental Appropriations - Federal
Governmental Appropriations - State
Governmental Appropriations - Local

Include those funds received from or made available to an institution through acts of a legislative body. Governmental appropriations should be categorized on the basis of the governmental level (federal, state, or local) of the legislative body providing the appropriation. <u>They do not include governmental grants or contracts</u>. These three sources of revenue include all unrestricted appropriations and all restricted appropriations to the extent expended for current operations.

The determination of whether a particular governmental appropriation should be classified as restricted or unrestricted funds should be based upon the ability of the institution to effect a change in the intended use of the funds during the reporting period. If a change can be made without having to go through the legislative process, the funds should be considered unrestricted.

Governmental Grants and Contracts - Federal
Governmental Grants and Contracts - State
Governmental Grants and Contracts - Local

Include revenues from governmental agencies which are received or made available for specific projects or programs. Examples are research projects, training programs, and similar activities for which amounts are received or expenditures are reimbursable under the terms of a governmental grant or contract.

Governmental grants and contracts should be categorized on the basis of the level (federal, state, or local) of the agency providing the funds to the institution.

Restricted funds are included in this revenue source for a given year only to the extent that they represent revenues supporting expenditures during that year. Unspent restricted funds should remain as restricted current fund balances to be carried forward to the next period and included in current funds revenue in the year in which they are actually spent. The revenues include only the revenues equal to direct expenditures incurred in conjunction with the grant or contract. Amounts equal to associated indirect cost reimbursements should be separately reported as unrestricted revenue.

Private Gifts, Grants, and Contracts

Includes amounts from individuals or nongovernmental organizations. The funds included in this revenue source are of two types: (1) private gifts and grants, and (2) private contracts. Private gifts and grants include those funds received from private donors for which no legal consideration is involved, i.e., no specific goods or services must be provided to the donor in return for the funds. Private contracts include those funds received for which specific goods and services must be provided to the funder as a stipulation for receipt of the funds. This category includes all unrestricted gifts, grants, and bequests as well as all restricted gifts, grants, and contracts to the extent that revenues received are expended in the year received.

Indirect Cost Reimbursement

Includes amounts recovered for the indirect support of federal, state, local, and private grants and contracts.

Investment Income

Includes current funds revenue, interest, and dividends not reported under endowment or any other non-expendable fund income.

Endowment Income

Includes: (1) unrestricted income of endowment and similar funds, (2) restricted income of endowment and similar funds to the extent expended for current operating purposes, and (3) income from funds held in irrevocable trust by others.

Sales and Services of Educational Activities

Includes revenues derived from the sales of goods or services which are incidental to the conduct of instruction, research, or public service. It may include the income from programs which provide support to the instruction, research, and public service areas. This category does not include the revenues generated by hospitals operated by an institution. However, revenues derived from health clinics that are not part of a hospital or an auxiliary services student health services program should be reported in this category. Examples of sales and services of educational activities revenue include film rentals, scientific and literary publications, testing services, university presses, laboratory schools, teaching clinics, and dairy products.

Budgeted Fund Balance as Support

Includes funds brought forward from previous fiscal years and budgeted in the current period to fund current funds expenditures.

Other Revenue

All sources of current funds revenue not included in other classifications. Examples are gains and losses on investments in current funds, miscellaneous rentals and sales, expired term endowments, and terminated annuity of life income agreements, if not material.

Sales and Services of Auxiliary Enterprises

This category consists of all revenues including funds assigned to debt service generated by the auxiliary enterprise operations of an institution. An auxiliary enterprise is an entity which exists to furnish goods or services to students, faculty, or staff and charges a fee that is directly related, although not necessarily equal, to the cost of the service. The distinguishing characteristic of auxiliary enterprises is that they are managed as essentially self-supporting operations. The general public may incidentally be serviced by some auxiliary enterprises. Auxiliary enterprises include operations such as food service facilities, residential facilities, student health services, intercollegiate athletics (if operated essentially as a self-supporting activity), college unions, and college stores.

Sales and Services of Hospitals

Includes the revenue (net of discounts, allowances, and provision for doubtful accounts) generated by a hospital operated by an institution. Revenue from daily patient services, revenue from special services, revenue from other services, and revenue of health clinics that are part of the hospital should be included in this category. Not included are revenues for research and other specific-purpose gifts, grants, and endowment income restricted to the hospital.

Source: Council on Higher Education, 1991/93 Reporting Guidelines

DEFINITIONS: PROGRAMS

Educational and General

Instruction

Includes all funds budgeted or expended for credit and noncredit courses for academic, vocational, and remedial purposes in regular, special, and extension sessions. Expenditures for departmental research and public service that are not separately budgeted are also included. This category includes subcategories for general academic instruction, occupational/technical instruction, summer and special session instruction, community education, and preparatory/adult basic education.

Research

Includes funds budgeted or expended for activities specifically organized to produce research outcomes, whether commissioned by an agency external to the institution or separately budgeted by an organizational unit within the institution. Subject to these conditions, it includes funds budgeted or expended for individual and/or project research as well as those of institutes and research centers. Funds for departmental research that are separately budgeted specifically for research are included in this category.

Public Service

Includes funds budgeted or expended for activities established primarily to provide noninstructional services beneficial to individuals outside the institution. This category includes subcategories for community service, cooperative extension service, and public broadcasting services.

Libraries

Includes all funds budgeted or expended for all activities that directly support the collection, cataloging, storage, and distribution of published materials in support of an institution's academic programs. To be included in this activity, a library should be separately organized and serve more than one academic department or activity.

Academic Support

Includes funds budgeted or expended primarily to provide support services for the institution's primary missions - instruction, research, and public service. This category includes the subprograms of museums and galleries, audio-visual services, academic computing support, ancillary support, academic administration, academic personnel development, and course and curriculum development.

Student Services

Includes funds budgeted or expended for those activities whose primary purpose is to contribute to the student's intellectual, cultural, and social development outside the context of the formal instruction program. This category includes subcategories for student services administration, social and cultural development, counseling and career guidance, financial aid administration, student admission, student records, student health services, and intercollegiate athletics.

Intercollegiate athletics is categorized as a student services "educational and general" expenditure unless it is operating as a self-supporting activity and, therefore, reported as an auxiliary enterprise operation. Examples of intercollegiate athletics expenditures are salaries of coaches and trainers, officiating, travel, grants-in-aid, ticket sales, and advertising. Excluded from intercollegiate athletics are those activities that relate to intramural athletics and to student financial aid.

Institutional Support

Includes funds budgeted or expended for those activities carried out to provide for both day-to-day functioning and the long-range viability of the institution as an operating institution. Subcategories include executive management, fiscal operations, general administration and logistical services, administrative computing support, and public relations/development.

Operation and Maintenance of Plant

Includes all funds budgeted or expended for the operation and maintenance of the physical plant, net of amounts charged to auxiliary enterprises, hospitals, and/or independent operations. This category includes subcategories for physical plant administration, building maintenance, custodial service, utilities, landscape and grounds maintenance, and major repairs and renovations.

Scholarships and Fellowships

Includes funds budgeted or expended for scholarships and fellowships in the form of outright grants to students selected by the institution and financed from current funds, restricted or unrestricted. Should also include trainee stipends, prizes, and awards, except trainee stipends awarded to individuals who are not enrolled in formal course work, which should be charged to instruction, research, or public service, as appropriate. When services are required in exchange for financial assistance, as in the College Work-Study Program, the charges should be classified as expenditures of the department or unit to which the service is rendered. Aid to students in the form of tuition or fee remissions should be included in this category. However, remissions of tuition and fees granted because of faculty or staff status should be recorded as staff benefit expenditures in the appropriate expenditure category.

Mandatory Transfers

Includes transfers from the current funds group to other fund groups arising out of binding legal agreements related to the financing of educational plant and/or grant agreements that require matching funds. This category includes subcategories for provision for debt service on educational plant, loan fund matching grants, and other mandatory transfers.

Nonmandatory Transfers

This category includes those transfers between the current funds group and other fund groups made at the discretion of the governing board to serve a variety of objectives, such as additions to loan funds, additions to quasi-endowment funds, general or specific plant additions, voluntary renewals and replacements of plant, and prepayments on debt principal.

Auxiliary Enterprises

Includes all budgeted and actual expenditures and transfers associated with the operation of auxiliary enterprises. An auxiliary enterprise is an entity that exists to furnish goods or services to students and that charges a fee directly related to, though not necessarily equal to, the cost of the goods or services. This category includes subcategories for auxiliary enterprises - student, auxiliary enterprises - faculty/staff, intercollegiate athletics (essentially self-supporting only), and mandatory transfers/auxiliary enterprises.

Hospitals

Includes all budgeted and actual expenditures and transfers associated with the patient-care operations of a university-operated hospital. Expenditures for those activities that take place within the hospital but are more appropriately classified as instruction or research are excluded. This category includes subcategories for direct patient care, health care supportive services, administration of hospitals, physical plant operations for hospitals, and mandatory transfers/hospitals.

Source: Council on Higher Education, 1991/93 Reporting Guidelines

DEFINITIONS: OBJECTS OF EXPENDITURE

Personnel Costs

Includes all funds budgeted or expended for salaries, wages, benefits (including, but not limited to, employer's share of FICA, retirement contributions, insurance, unemployment insurance, workers' compensation), and increments of all officers and employees, and payments to persons awarded personal service contracts.

Operating Expenses

Expenditures directly attributable to the operation of the institution and not otherwise classified.

Utilities

Utilities include fuel, electricity, water, and sewage. The operation and maintenance of institutionwide production and distribution systems, such as central heating and cooling plants and electrical, water, and sewage distribution systems, should be considered as part of utilities operations.

Grants, Loans, or Benefits

Expenditures for any grant, aid, loan or relief payment to individuals, or organizations, or jurisdictions not otherwise classified.

Debt Service

The amount of money required to pay the interest, principal, and required contributions to accumulate moneys for future retirement of lawfully incurred debt.

Capital Outlay

The exchange of values involved in acquiring land, buildings, equipment, or other permanent properties, or in their construction, development, or permanent improvement.

Source: Council on Higher Education, 1991/93 Reporting Guidelines