Factors that Influence Facilities & Administrative Cost Rates at Research Intensive Universities

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Executive Summary

This study attempts to provide insight with respect to factors that influence facilities and administrative cost rates at research intensive universities. A similar study was done in 1987 and was based on information provided by fourteen universities. The 1998 study relies on information from the same fourteen universities.

This study ascertains that the range of rates billed to the government has narrowed since 1987 for both administrative rates and facilities rates. For administrative rates, the average rate, the highest rate, the rate range, and the standard deviation have all decreased between 1987 and 1998, while the lowest value has increased. Because administrative rates were capped for reimbursement by the government in 1991, no analysis of administrative factors is conducted. For facilities rates, the highest rate, the rate range and the standard deviation have all decreased while the average rate and the lowest rate have increased. With respect to the range of facilities rates, this report looks at a number of factors, both tangible and intangible, in order to gain insight into differences.

The factors explored are: research size, research mix, interest rates, cost of energy, heating and cooling degree-days, age of physical plant, amount of debt, investment in buildings and equipment, and research square footage. Other important factors are also discussed, including a university's ability to cost share and the government's negotiation practices. While the variance in individual factors is consistently greater than the variance in the overall facilities rate, it is not possible to say which factors are most influential.

Hopefully this study will help to inform those who want to learn more about research costs and to inform the debate that seems to be continuous about one aspect or another of indirect costs.

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Introduction

This report provides insight with respect to factors that influence facilities and administrative costs at research intensive universities. Before 1996, "facilities & administrative costs" were known as "indirect costs." The terms are synonymous and when used throughout this report are intended to have the same meaning.

The Council on Governmental Relations (COGR) was asked if it could explain why there is continued variance in university indirect cost rates. A similar question about rates had been raised with COGR about a decade ago, and in 1987 a report was published entitled "Indirect Cost Rates at Research Universities, What Accounts for the Differences." The 1987 study was based on 14 universities, which were selected to provide a representative sample reflecting public or private governance, geographical diversity, a range of indirect costs rates, and a wide range of expenditures for federally sponsored research. In 1987, these 14 universities accounted for about 25 percent of federally funded expenditures for academic science. In 1997, these same 14 universities account for 23 percent of federally funded expenditures for academic science. Given the potential advantages of having a new study based on the same 14 universities, we proceeded in that manner. These universities are listed in Appendix I, along with their 1987 and 1998 facilities and administrative cost billing rates. However, rather than simply replicating the earlier study, we approached this analysis in a somewhat different fashion, desiring to add new insight and more understanding of the question - what factors influence facilities and administrative cost rates at research intensive universities?

Summary of the 1987 Study

The 1987 study identified a number of factors which accounted for variances in rates among the 14 universities. The facility-related variances were summed up by pointing out differences in: (1) building size and intensity of use; (2) debt level: (3) depreciation/use allowance policies; (4) size of research base relative to investment in buildings and facilities; (5) utility costs; (6) geographic location; and (7) mix of research. The standard deviation of facilities-related rates was roughly twice that of administrative rates. The report predicted that there would be less deviation in future facilities components as more universities began to invest in modernizing their research facilities. It also noted that variations in university cost recovery policies contributed to the overall rate difference.

Context for this Report

Since the 1987 report there have been significant revisions to OMB Circular A-21. This Circular provides principles for determining costs applicable to grants, contracts and other agreements with educational institutions. Among the more significant of the changes to Circular A-21, which have affected current rates, are the following:

1. The old single "Indirect Cost Rate" has been divided into separate facilities & administrative rate components, with the administrative rate component capped at 26 percent.

2. A number of costs have been made unallowable for reimbursement and others prescribed as either a direct or indirect cost; usually affecting the capped administrative component.

3. Restrictions have been placed on the amount of reimbursement for interest.

4. Rules of the Government Cost Accounting Standards Board must now be followed by universities in the administration of university grants and contracts. This adds to the administrative costs of research.

5. Additional direction has been prescribed on composition of the research base and on how major cost elements, such as graduate research assistant tuition, are to be distributed.

The fact that rate variations remain an issue, in the wake of three earlier revisions to Circular A-21 since 1991 and a fourth revision recently completed, may imply that there is an ongoing perception that the amount of variation is somehow unnatural and likely the result of either inefficient or ineffective management or artificial and inappropriate accounting treatments. This current analysis says rate variations are likely to be attributed to actual cost differences from university to university and may also be attributed to differences in a university's cost recovery approach and the government's rate negotiation practice.

This report will focus both on a number of specific factors and on rate components themselves, in each case identifying the absolute numerical range of variance and the distribution of the variance as measured by the mean and standard deviation. The standard deviation gives one a feeling for the degree of variance from the average. The number of universities included in this study was limited, they were not chosen in a random manner, not all rates are final, and extrapolations and prorations were sometimes necessary. Therefore, we have not attempted a regression analysis to determine whether the observed differences in what we characterize as independent variables account substantially for differences in rates. Nevertheless, this report demonstrates how various factors may influence facilities and administrative cost rates.

The Administrative Component

The administrative portion of the rate has always been subject to the least amount of variance. The 1987 data when restated to reflect billing rates in effect, which is the focus of our current study, produced a mean of 26.3 points, a range of 11.6 points and a standard deviation of 3.2 points. In 1991, OMB Circular A-21 was revised for the purpose of placing a 26 percent cap on recovery of administrative costs. In the current study, the mean for the administrative component of the 1998 billed rates is 25.0 points, the range 3.5 points and the standard deviation 1.2 points. Given the relatively modest roles such differences play in the overall Facilities & Administrative Cost rate variance, this study did not attempt to further articulate how university characteristics (such as level of service, size of overall university, or organizational structure) might affect these rates.

Factors Affecting Facilities Costs

Our analysis indicates that in 1998 the arithmetic mean for the current billing rates for facilities is 30.4 points, the range 20.5 points and standard deviation 6.7 points. This compares to 27.2 points, 32.4 points, and 9.5 points for these same numbers respectively from the 1987 study.

In reviewing responses to the extensive questionnaire we developed, we determined that data availability and constraints precluded a meaningful regression analysis which would explain all rate differences. Instead, we asked a more basic question, "Are there enough measurable differences in the underlying individual university profiles that would lead one to believe that the resulting total variance is reasonable?" To answer this question, we attempted to identify measurable, tangible variables. Those which we will discuss seem to fall into two groups, one which we would characterize as general and the other specific. For elements in the general category, it is reasonable to assume that the different profiles will have varying impacts on costs, but it is not possible to identify that impact in a straightforward and simple way. On the other hand, the specific factors would typically translate into rate differences in a relatively direct way. Both of these types might be characterized as independent variables if this were a regression analysis.

While there are a number of factors, including the size of the instructional program or amount of university research (as opposed to sponsored research), which potentially could affect research rates, we focused on two general variables which seemed to us likely to have the greatest impact on facility profiles. The first is research size and the second is research mix.

Research Size

The size of organized research programs, which include both federal and nonfederal support, is measured by the Modified Total Direct Cost (MTDC) base as prescribed by OMB Circular A-21. The research base is the total of direct research costs, but is usually expressed in terms of MTDC, because the base does not include equipment, nor does it include subcontracts over $25,000. For this study group, the bases range from a high of $249M at the University of Wisconsin-Madison to a low of $27M at Brown University. The mean is $141M and the standard deviation is $70M.

Size has the potential to be a factor; most importantly in allowing for economies of scale in certain instances. For example, one could imagine that if a larger and a smaller university were placed geographically side by side, it might be possible for the larger one to negotiate a greater discount on a commodity like raw energy than the smaller one or that a cogeneration plant or similar facility of a larger size might produce greater efficiencies than one of a smaller size. On the other hand, we know that there are both breaks and inversions in the economies of scale curve. For example, at some point in the physical expansion of a campus, adding even one building will require a large investment in utility capacity. Similarly, limited availability of land might force expensive construction out of proportion to immediate gain in space, in order to accommodate growth in a research program. Clearly the size of the organized research MTDC base has a continuing and concrete impact on the way in which each university builds, operates, and maintains its facilities.

Research Mix

The other significant general variable examined here is the mix of the research program. Table A shows the percent of research in each of five academic categories for each of the fourteen universities in this study. Here we used space as a proxy for total expenses because of the availability of data. The largest variation comes in the percentages of research in biological and medical sciences, which usually requires the most expensive facilities. This category constitutes almost 100 percent of the research at the University of California, San Francisco (UCSF) while only 20.0 percent at Princeton University. On the other hand, the category of math and computer sciences, which typically use less expensive facilities, ranges from zero at UCSF to 11.8 percent at the Massachusetts Institute of Technology (MIT). How this translates into facilities rate components cannot be precisely identified. However, one would expect such varying research profiles to generate different facilities demands ranging, from square feet per principal investigator, amount of air handling and purification, temperature and climate control, and the like.

Specific Variables

There are numerous specific, tangible variables, which normally have a more direct impact on facilities rates; we have focused on eight. The first four of these are: 1) average interest rate; 2) cost of units of raw energy; 3) number of degree-days; and 4) age of plant. Four others are expressed on a relative basis, which we have chosen to be per dollar (or in one case per thousand dollars) of organized research MTDC. These factors include: 1) amount of outstanding debt, 2) investment in plant, 3) investment in equipment, and 4) research square footage.

1. **Average Interest Rate** -- For those universities with external borrowing, rates paid on outstanding indebtedness range from 5.0% at the University of Illinois-Urbana and the University of Pennsylvania to 7.1% at Cornell University-Endowed Colleges. The mean is 5.9 percent and the standard deviation is 0.7 percent. The higher the interest rate, the greater the upward pressure on the corresponding component in the facilities rate. Interest rates are a product of credit ratings, length of maturities, date of issuance, and structural provisions. In addition, private universities were subject to a $150M cap on use of tax exempt bonds prior to August of 1997, which resulted in several of them having to issue debt on a taxable basis. Taxable bonds usually carry a higher cost. Given the significant impact that debt normally has on a university's balance sheet and financial statements, it is reasonable to assume that each university is managing towards the lowest possible interest rates, consistent with their financial condition, ability to bear risk and similar constraints.

2. **Units of Raw Energy** -- Rates paid per megawatt hour of electricity range from $86.00 at MIT to $34.00 at the University of Washington. The mean is $62.37 and the standard deviation is $16.00. Fuel costs per decatherm range from $5.46 at University of Missouri-Columbia to $2.39 at the University of Washington. The mean is $3.85 and the standard deviation is $0.83. Much of the rate variance here is due to 1) geography, 2) availability of hydroelectric power, 3) local or regional environmental standards which allow burning of certain types of low-cost fuels, and a 4) variety of logistical costs. Unique circumstances abound. For example, the University of Pennsylvania is able to buy processed steam from a local company serving multiple customers in the City of Philadelphia. Cornell University is investigating an innovative plan to use permanently chilled water from the depths of Lake Cayuga to provide cooling for their campus. Successful implementation of that project would result in reduced costs to Cornell University and a lower facilities' rate charged to the federal government. Paradoxically, this improvement would likely increase the variance in utility rates.

3. **The Number of Degree-Days** -- For heating, degree-days range from 7,810 at University of Wisconsin-Madison to 2,767 at University of California, San Francisco. The mean is 5,216 and the standard deviation is 1479. For cooling, degree-days range from 1,163 at Princeton University to 238 at the University of Washington and the University of Illinois. The mean is 639 and the standard deviation is 345. Differences in these demand levels are determined by geographic location. It is interesting to note that while universities may adjust their instructional program to avoid heating or cooling at the most expensive times, typically by extending winter breaks or avoiding summer

sessions, research programs must operate year round and bear the cost impact of weather extremes at either end of the scale.

4. **Average Age of the Plant** -- The average age of building shells ranges from 49.0 years at University of Wisconsin-Madison to 18.0 years at the The Johns Hopkins University. The mean is 35.3 years and the standard deviation is 7.8 years. Older building shells usually translate into low building depreciation costs. Some participants assert that old buildings constrain both operations and renovations in a manner which drives up costs. While new buildings can be constructed using the most efficient techniques now available, older buildings often have more expensive but historically important facades to maintain and may impose space limitations when retrofitting for upgraded and more efficient utility systems and similar work.

5. **Amount of Outstanding Debt** – The range is from zero at University of Missouri-Columbia, which has no debt attributable to research, to $1.20 of debt per dollar of research MTDC at The Johns Hopkins University. The mean is $0.54 and the standard deviation is $0.40. For a number of reasons, including the significant risk that the research volume will not be available to sustain repayment requirements, borrowing is not normally a university's first choice for such capital investments. From this perspective, direct appropriations from governmental entities or private donations are significantly more attractive. However, in the absence of a match of interests or timing from such sources, debt is often the only option for providing upgraded research facilities necessary to move research programs forward.

6. **Investment in Plant** -- Total investment in plant per dollar of research MTDC ranges from $13.21 at Cornell University – Endowed Colleges to $0.88 at University of Wisconsin-Madison. The mean is $3.11 and the standard deviation is $3.19. Each university makes its own decision about the amount it wishes to invest in research facilities. Decisions are normally occasioned by the need to develop capabilities in areas as new faculty investigators initiate research, to address emerging new inter-disciplinary opportunities, or to change the focus in various fields. It would be unusual if all universities were at the same stage of their investment programs at any given point in time. Universities have varying degrees of success in obtaining competitively awarded federal grants and contracts for facilities. That success or lack thereof, contributes to rate variances, because federal funds awarded for facilities construction do not result in an amortization charge in the indirect cost rate.

7. **Investment in Equipment** -- Investment in equipment per dollar of research MTDC ranges from $1.27 at the University of Michigan to $0.29 at Princeton University. The mean is $0.66 and the standard deviation is $0.30. As with facilities, the participants report that considerations such as addressing new areas of knowledge dictate investments in equipment. As with buildings, varying success in securing federal instrumentation awards may cause rate differences, since instruments acquired with federal funds are not reflected in indirect cost rates.

8. **Research Square Footage** -- The amount of research square feet per one thousand dollars of MTDC ranges from 20.0 sq. ft. at University of Missouri-Columbia to 3.8 sq. ft. at UCSF. The mean is 9.6 sq. ft. and the standard deviation is 4.6 sq. ft. Here is one place where the research mix may have the most influence, although direct correlations

would be difficult to establish. However, there appear to be different norms for laboratory sizes in the various disciplines. Other factors likely to contribute to differences are the age of plant and the amount and price of available land.

The factors discussed above are meant to be illustrative but not exhaustive. One could pursue data on average building size, campus acreage and urban vs. rural location, but we have not done so. Nonetheless, the variables discussed above serve to give one a feeling for the kinds of factors that influence facilities and administrative cost rates.

Economic and Negotiation Factors

Given the amount of variation in tangible factors such as those reviewed above, one would expect the rates charged to the government to be different. However, it would be unreasonable to draw the conclusion that all differences in rates are solely the result of these factors. Rates are also influenced by economic and negotiation factors relating to the universities themselves and to their federal cognizant agencies.

While all universities contribute resources of their own or have non-federal sources available to support their organized research programs, economic conditions and resources vary considerably from university to university and so do the amounts and ways in which universities engage in such cost sharing. Sometimes university economic circumstances manifest themselves in a particular way, such as the need to debt finance research buildings or the ability to sustain investment in plant or equipment. More often, however, these circumstances are reflected in the range of accounting and negotiating approaches employed by universities.

There are pressures both internal and external to the environment at each university which bring such differences in approach into play. There is the desire by researchers to have university rates that they believe are competitive in the funding process. This tends to dampen accounting and negotiating aggressiveness, particularly at universities whose underlying cost structure is high based on tangible factors. Economic relationships may also have a powerful impact on these matters. As the 1987 COGR report observed, state universities on average proposed and negotiated lower indirect cost rates than those at private universities. The aggressiveness of their calculations (in terms of special studies, useful lives or depreciating groupings of assets) may be affected by the reimbursement arrangements between the university and the state.

University decisions do not, of course, take place in a vacuum. Each rate is the result of a negotiation with a federal cognizant agency. The negotiating agencies and their regional offices may have particular preferences about the best way to ensure that the allocation of costs at universities is equitable to the government. Sometimes this is dictated by particular circumstances at a university. For example, in some cases the government insists that large laboratories or similar programs be carved out from other research and given unique cost allocation treatment. The results are inevitably a different rate for the unit and the balance of the university than had the total cost to the government simply been spread in one single rate.

At other times the negotiation hinges on how the government prefers to structure the rate. The Department of Health and Human Services (DHHS) believes that it is in the best interest of their agency to have relatively stable and predictable rates. Therefore they favor multi-year non-adjustable (i.e. "predetermined") rate agreements. However, since there is always the chance

that the costs or bases will change significantly over the life of such an agreement, DHHS will routinely look for a rate which is discounted from the university's calculation in order to minimize risk to the government. This provides a cushion against the chance that an actual rate for any one year, if computed, might be below the negotiated rate. While universities must accept the discount under such a model, they have the advantage of predictability in the rate for planning and budgeting purposes and they save on proposal and audit costs. Should the rate increase, the risk is one-sided and the university does not recover its costs.

On the other hand, the Department of Defense (DOD) tends to treat universities as it does its large defense contractors. DOD prefers to have more frequent detailed audits and negotiations and, therefore, typically negotiates annual rates with provisions for adjustments for over - or under -recovery (i.e. "carry forward"). This gives DOD the ability each and every year to reassess the rate situation. Since the carry forward provision allows them to recapture in subsequent years any instances where the billing rate might have resulted in an over-recovery by a university, they do not need to build in a discount to protect against such fluctuations. Operating under this model, universities may more fully recover their costs but lose certainty in planning and must incur the added cost and effort of annual rate preparations and audits.

It should be noted that in all instances negotiations are carried out by professional individuals whose judgement is shaped by past experiences and training. Knowledgeable individuals can and do differ in their judgement about a whole range of items, from particular cost distribution algorithms to estimating the impact of future events like a new building coming on line.

Differences in agency orientation, available financial resources, economic relationships and negotiating style and environment may contribute to rate differences. Many persons believe these factors have substantial influence on rates, but this analysis is unable to measure actual impact. Sometimes these economic and negotiating factors mitigate variances and sometimes they increase variances. But, simply stated, no amount of accounting standardization will result in uniform rates, given the underlying differences in both real cost elements and in these intangible factors.

Variance in Billed Facilities Rate Components

As a result of general and specific factors, tempered or exaggerated by economic and negotiation conditions, the fourteen universities currently show considerable variance in the facilities rate components:

1. **Interest** -- This component ranges from 7.4 points to zero points, with a mean of 2.0 points and a standard deviation of 1.8 points. The amount of debt, interest rate, and average life of debt are the factors that contribute to this result.

2. **Equipment Depreciation** -- This component ranges from 8.0 points to 2.0 points, with a mean of 4.7 points and a standard deviation of 1.8 points. This is primarily a function of the total investment of institutional funds in equipment. It can also be affected by success in receiving competitively awarded federal funds, by capitalization limits, by different classifications of useful lives, and by whether an institution has chosen to recover equipment costs through use allowance or depreciation.

3. **Building Depreciation** -- This component ranges from 6.3 points to 1.0 points, with a mean of 3.9 points and a standard deviation of 1.6 points. The factors here mirror those for equipment depreciation.

4. **Utilities** -- This component ranges from 11.1 points to 2.8 points, with a mean of 6.7 points and a standard deviation of 2.2 points. Raw energy costs are the primary determinant factor. Special cost analysis studies may have played a role in the past, but these are already scheduled to be converted to a uniform factor. That factor may reduce variance among universities which performed utilities studies, but since not all of the 14 universities in this group are eligible to use the standard factor initially it will not necessarily reduce the range of differences described here.

5. **Other Plant Operation and Maintenance** -- This component ranges from 16.3 points to 7.1 points, with a mean of 10.0 points and a standard deviation of 2.9 points. The research mix and age of plant are probably the most dominant influences here, although capitalization policies would also have an influence.

6. **Library** -- This component ranges from 7.1 points to 1.0 points, with a mean of 2.9 points and a standard deviation of 1.8 points. While there are differences in such measures as the number of volumes per dollar of sponsored research MTDC, the number of subject areas for which a research level collection is maintained, and expenditures on a per capita basis, it is likely that most of the variation in this component is attributable to costs which are identified by conducting special costs analysis studies. Such studies are performed because the default allocation formula relies principally on head count and does not reflect programmatic factors that influence library costs. The costs analysis studies do a more precise allocation of actual costs, but such studies are discouraged by some federal negotiators because these more detailed calculations result in higher percentages of library costs being assigned to research.

Summary

Both actual cost differences and differences in government negotiating practices account for variances in facilities rates. The factors that influence costs are both general and specific. The factors examined in this study include: 1) interest rates, 2) costs of energy, 3) number of degree-days, 4) age of physical] plant, 5) amount of outstanding debt, 6) investment in plant, 7) investment in equipment and 8) research square footage. There are also differences in government negotiating practices and aggressiveness in claiming full cost, but this analysis is unable to measure that impact.

The 1987 COGR study predicted a narrowing of the variances in facilities rates as more campuses begin to modernize their research facilities. The range of rates in the 14 university sample in 1987 was 7.23 points at the low end and 39.61 points at the upper end. In 1998, the range for the same 14 universities is 19.00 points to 39.50 points. Appendix 1 shows that investments in buildings and equipment made by several universities previously at the lower end of the range have been partially responsible for this rate narrowing. Further narrowing may be attributed to more rigid government negotiation practices, but this assertion is not easily measured. In total, the range for facilities rates has decreased by more than a third and the standard deviation has decreased by more than a quarter.

TABLE A.

Organized Research Space Percentage on Square Footage Basis

University	Engineering	Physical & Earth Science	Math & Computer Sci	Biological & Medical	Psychological & Social Science
Brown	25.10%	22.20%	8.10%	37.80%	6.80%
Cornell (Endowed)	10.40%	13.50%	3.00%	70.40%	2.70%
Johns Hopkins	8.00%	13.00%	0.50%	72.50%	6.00%
MIT	36.00%	29.40%	11.80%	21.90%	0.90%
Princeton	30.00%	41.00%	2.00%	20.00%	7.00%
Stanford	23.10%	17.00%	3.60%	53.30%	3.00%
U of California-SF	0.00%	0.00%	0.00%	99.50%	0.50%
U of Illinois-Urbana	29.50%	17.20%	3.20%	41.50%	8.60%
U of Michigan	26.00%	15.00%	1.00%	53.00%	5.00%
U of Missouri-Columbia	23.30%	11.60%	0.10%	64.90%	0.10%
U of Pennsylvania	7.00%	11.00%	4.00%	66.00%	12.00%
U of Virginia	15.40%	24.70%	0.40%	56.70%	2.80%
U of Washington	14.30%	27.00%	0.20%	52.70%	5.80%
U of Wisconsin-Madison	14.50%	19.00%	1.00%	61.50%	4.00%
Arithmetic Mean	18.76%	18.69%	2.78%	55.12%	4.66%
Standard Deviation	10.36%	9.87%	3.41%	20.75%	3.34%
Highest Value	36.00%	41.00%	11.80%	99.50%	12.00%
Lowest Value	0.00%	0.00%	0.00%	20.00%	0.10%
Range (Hi-Low)	36.00%	41.00%	11.80%	79.50%	11.90%

COGR Survey

Comparison of F&A Rates:
FY 1987 vs. FY 1998

APPENDIX I.

University	FY 1987 Total Facilities	FY 1987 Total Admin	FY 1987 Total Negotiated	FY 1998 Total Facilities	FY 1998 Total Admin	FY 1998 Total Negotiated
Brown	36.40	28.60	65.00	34.00	26.00	60.00
Cornell (Endowed)	35.91	24.69	60.60	39.19	24.67	63.86
Johns Hopkins	32.70	26.30	59.00	39.50	25.00	64.50
MIT	35.72	23.77	59.49	39.20	24.30	63.50
Princeton	33.00	31.00	64.00	33.00	26.00	59.00
Stanford	39.61	30.39	70.00	32.51	26.00	58.51
U of California San-Francisco	7.23	25.17	32.40	21.00	26.00	47.00
U of Illinois-Urbana	28.72	26.48	55.20	31.50	24.00	55.50
U of Michigan	21.50	28.50	50.00	26.50	26.00	52.50
U of Missouri-Columbia	18.07	19.43	37.50	23.00	23.00	46.00
U of Pennsylvania	32.44	28.56	61.00	33.00	26.00	59.00
U of Virginia	21.74	28.26	50.00	28.50	22.50	51.00
U of Washington	16.89	24.33	41.22	25.00	26.00	51.00
U of Wisconsin-Madison	20.30	22.70	43.00	19.00	25.00	44.00
Arithmetic Mean	27.16	26.30	53.46	30.35	25.03	55.38
Standard Deviation	9.52	3.19	11.36	6.74	1.20	6.87
Highest Value	39.61	31.00	70.00	39.50	26.00	64.50
Lowest Value	7.23	19.43	32.40	19.00	22.50	44.00
Range (Hi-Low)	32.38	11.57	37.60	20.50	3.50	20.50