Plan Management Navigator
Analytics for Health Plan Administration

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What Drives Short-Term Scale Effects?

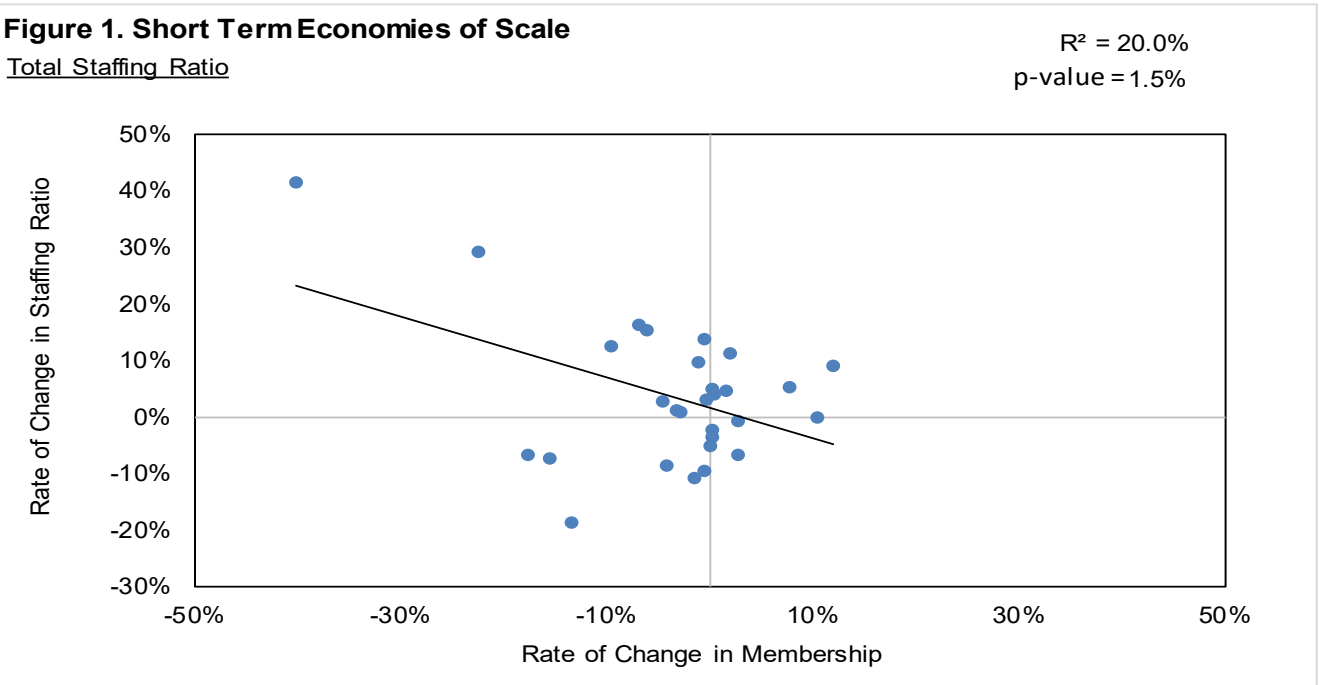
While long term economies of scale in health plans occur in only a few functions, and their impact is modest on those functions, short term economies of scale are far more important. In the Late November 2018 edition of *Plan Management Navigator*, we showed that there is a statistically significant negative relationship between membership growth and cost growth. Put a different way, costs tend to be sticky when membership changes *in the short term*.

This edition of *Plan Management Navigator* helps to explain these relationships. Broadly speaking, the relationship between membership growth and staffing ratio growth has a similar relationship to membership to costs, though more dramatic. Offsetting the effect of staffing on costs, plans that accelerate their growth seem more likely to increase outsourcing. In one function, compensation tends to accelerate.

Linking Staffing and Growth

Figure 1 shows the relationship between changes in membership and changes in staffing ratios. It is very similar to that of the cost relationship published in November. The p-value of 1.5% means that the relationship is statistically significant. The staffing ratio slope is steeper for this relationship, -0.53 versus -0.34 for costs. With an R^2 of 20.0%, compared with 22.5% for the cost relationship, it has slightly less explanatory power.

Figure 1. Short Term Economies of Scale



The staffing in the various clusters of functions vary in their sensitivity to changes in membership. As shown in Figure 2, all have steeper slopes than cost relationships, all have lower p-values and greater explanatory power, except for Account and Membership Administration. We have highlighted those clusters with significant p-values - that is, below 10%. In the clusters of Medical and Provider Management and Corporate Services the sharp improvement in the relationship of membership growth and staffing ratio growth nears significance.

We would suppose that the activities in the clusters of Account and Membership Administration and Corporate Services would be especially insensitive to changes in membership. Put a different way, if membership increases these two clusters would together be more prone to cost or staffing ratio declines than the staffing ratio as a whole. After all, this includes various activities like Finance and Accounting, the Corporate Services function, Actuarial and Corporate Executive, which one might not consider to have much staffing flexibility. This relationship is shown in Figure 3.

While the relationship between staffing ratios changes and membership growth remains significant, it is less so than for expenses as a whole. Moreover, the explanatory power is less, while the slope is approximately the same. Interestingly, the relationship between the growth in membership and staffing ratios for this combination of clusters was almost identical to that of the cost trends.

Figure 2. Short Term Economies of Scale

Rate of Membership Growth and Staffing Ratio Growth

Function	R-Squared	Slope*	p-value	Number of Plans
Sales and Marketing	28.3%	-0.67	0.3%	29
Medical and Provider Management	8.4%	-0.39	12.6%	29
Account and Membership Administration	14.7%	-0.59	4.0%	29
Corporate Services Cluster	8.7%	-0.55	12.0%	29
Account and Membership Admin. plus Corporate Services	14.5%	-0.54	4.2%	29
Total Staffing Ratio	20.0%	-0.53	1.5%	29

*Slope here represents the percentage point change in staffing ratio growth for every percentage point increase in membership growth. For example, a plan has 5% membership growth in year 1 with 10% Account and Membership staffing ratio growth. If in year 2 the plan increases its membership growth rate 1 percentage point to 6%, it can expect its Account and Membership staffing ratio growth to decrease by 0.59 percentage points to 9.41%.

The similarity between the relationships to membership growth in total staffing ratios and the combination of Account and Membership Administration plus Corporate services differed from our hypothesis, above. Figure 4 shows how the specific functions behave when membership grows. Notably, in the Corporate Services cluster, only Finance and Accounting shows a statistically significant relationship between membership growth and cost growth. It is negative. The largest function in this cluster, the Corporate Services function, also as a negative slope but the relationship is weak. While Actuarial and Corporate Executive post even weaker relationships, their slopes are positive: that is, the faster the growth in membership, the faster the increase in staffing ratios.

By contrast, the relationship between staffing and membership growth was more robust in the Account and Membership Administration cluster. Both Claims and Information Systems had significant negative slopes. Neither Customer Services nor Enrollment relationships were significant.

All of the functions in the Sales and Marketing and Medical and Provider Management clusters had negative slopes. Of the four Sales and Marketing functions that had staff, Sales and Advertising and Promotion had a significant relationship with membership growth, though Marketing approached significance by our generous criteria.

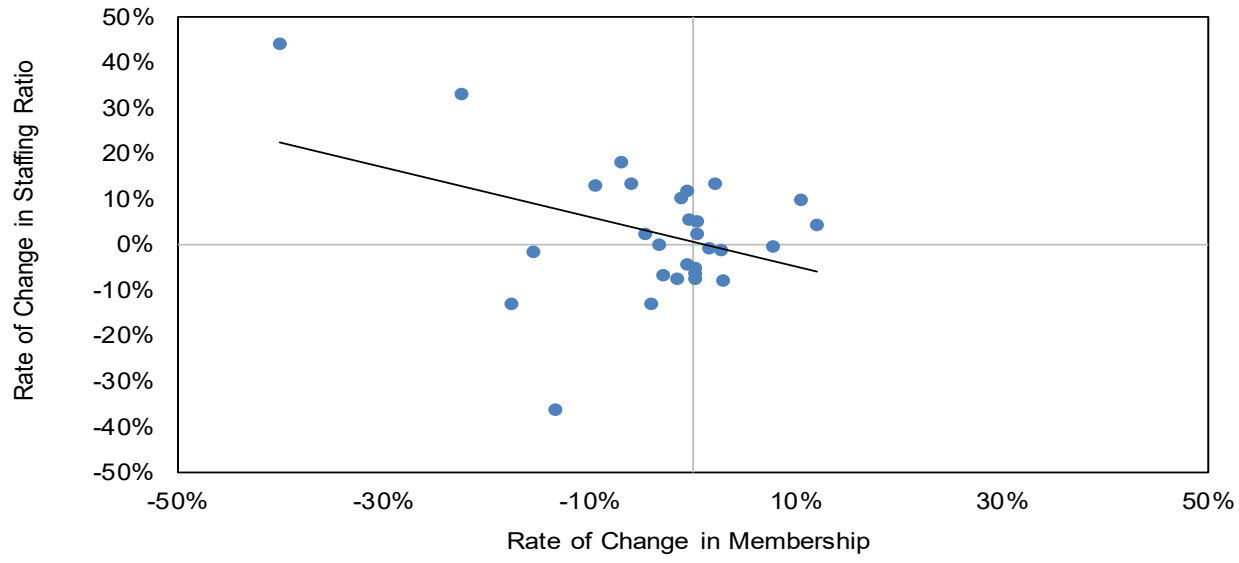
The Medical and Provider Management cluster was mixed. The slopes were both negative but only the Provider Network Management and Services Function was significant.

Figure 3. Short Term Economies of Scale

Account and Membership Admin. plus Corporate Services

R^2 = 14.5%

p-value = 4.2%



The relationships between costs and growth are generally similar to staffing ratios and growth. Eleven of the fourteen functions that have FTEs display slopes going in the same direction. A few were especially important: Sales, Information Systems and Finance and Accounting. Collectively, these functions compose 31% of insured expenses. (Marketing's staff slope was only 0.2 percentage points from significance.) So it is no surprise that for all health plan costs, both cost and staffing ratios bore significant relationships to growth, and the slopes were negative. As noted earlier, the slopes for staffing were generally steeper.

Figure 4. Short Term Economies of Scale

Rate of Membership Growth and Staffing Ratio Growth

Function	R-Squared	Slope*	p-value	Number of Plans
1. Rating and Underwriting	0.7%	-0.30	66.0%	29
2. Marketing	9.6%	-0.87	10.2%	29
3. Sales	27.6%	-0.59	0.3%	29
4. External Broker Commissions	NM	NM	NM	0
5. Advertising and Promotion	18.4%	-34.90	3.2%	25
6. Provider Network Management and Services	9.7%	-0.81	10.0%	29
7. Medical Management / QA / Wellness	3.5%	-0.26	32.9%	29
8. Enrollment / Membership / Billing	0.2%	0.49	80.6%	29
9. Customer Services	0.2%	-0.09	83.0%	29
10. Claim and Encounter Capture and Adjudication	35.5%	-1.00	0.1%	29
11. Information Systems Expenses	11.3%	-0.67	7.5%	29
12. Finance and Accounting	22.9%	-1.15	0.9%	29
13. Actuarial	1.9%	0.38	47.8%	29
14. Corporate Services Function	5.8%	-0.49	20.8%	29
15. Corporate Executive & Governance	1.4%	0.83	54.5%	29
Total Staffing Ratio	20.0%	-0.53	1.5%	29

*Slope here represents the percentage point change in staffing ratio growth for every percentage point increase in membership growth. For example, a plan has 5% membership growth in year 1 with 10% Finance and Accounting staffing ratio growth. If in year 2 the plan increases its membership growth rate 1 percentage point to 6%, it can expect its Finance and Accounting staffing ratio growth to decline by 1.15 percentage points to 8.85%.

Where and Why Did Cost-Growth Relationships Differ from Staffing-Growth Relationships?

Of the fourteen functions with staff, 6 had a significant relationship between costs and growth and 6 had a significant relationship between staffing ratios and growth. For three functions, noted above, there was a close correspondence between staffing and costs, but in some cases there was not, suggesting the presence of other factors. The effect of growth on Rating and Underwriting and Marketing were evident for costs, but not staffing, while Advertising and Promotion, Provider Network Management and Services and Claim and Encounter Capture and Adjudication were evident for staffing but not costs. (Actuarial was evident for costs but not staffing, but the cost slope was positive, not negative.) This difference may be surprising because the link between costs and staffing are so clear: after all, staffing costs represent approximately one-half of all costs for health plans.

So what mitigated this intuitively-appealing relationship? One possibility is that as membership grew, plans adapted by outsourcing more. Staffing fixedness would be outweighed if staffing was augmented by outsourced staff. In Figure 6 we display calculations of the increase in the percent of FTEs that are outsourced relative to the growth in membership.

Figure 5. Short Term Economies of Scale

Membership Growth and Staffing Ratio Growth, Cost Growth Agreement

Function	Slope*	p-value	Notes
1. Rating and Underwriting	✓	×	
2. Marketing	✓	×	
3. Sales	✓	✓	
4. External Broker Commissions	NM	NM	
5. Advertising and Promotion	✓	×	
6. Provider Network Management and Services	✓	×	Staffing significant
7. Medical Management / QA / Wellness	✓	✓	Neither significant
8. Enrollment / Membership / Billing	×	×	
9. Customer Services	✓	✓	
10. Claim and Encounter Capture and Adjudication	✓	×	Staffing significant
11. Information Systems Expenses	✓	✓	
12. Finance and Accounting	✓	✓	
13. Actuarial	×	✓	
14. Corporate Services Function	×	✓	Neither significant
15. Corporate Executive & Governance	✓	✓	Upward slope. Neither significant
Total Staffing Ratio	✓	✓	

This tendency to outsource with growth seems to have happened in Provider Network Management and Services. The slope is positive, has a p-value of 4.0% and an R^2 of 18.5%. The relationship is even stronger for Customer Services, which had no significant cost or staffing relationship with membership growth. (Recall that Customer Services costs per member did not have significant relationships between either cost or staffing to membership growth.) Many of the employees in these two functions answer inquiries, which are sensitive to membership levels. The function of Claim and Encounter Capture and Adjudication also displayed a positive membership growth-outsourcing relationship, though the p-value was slightly higher than we considered significant. No other functions had that mitigating effect.

Increases in compensation may also have an effect on costs, which could eliminate the effects of membership changes on cost increases. We analyzed the relationship between compensation and growth. Only Actuarial exhibited this relationship. It was had a low p-value of 0.5% and a steeply positive slope. The Actuarial function has employees with unique qualifications and opportunities for lateral mobility. It also enjoyed near significance and a positive slope in its propensity to outsource with growth.

Figure 6. Short Term Economies of Scale

Rate of Membership Growth and Percentage of FTEs that are Outsourced

Function	R-Squared	Slope*	p-value	Number of Plans
1. Rating and Underwriting	1.0%	0.13	67.1%	20
2. Marketing	3.7%	-0.44	38.0%	23
3. Sales	0.1%	-0.01	91.2%	21
4. External Broker Commissions	NM	NM	NM	0
5. Advertising and Promotion	9.0%	-0.33	31.9%	13
6. Provider Network Management and Services	18.5%	0.35	4.0%	23
7. Medical Management / QA / Wellness	0.1%	-0.02	91.4%	25
8. Enrollment / Membership / Billing	7.8%	0.42	19.6%	23
9. Customer Services	26.2%	0.88	1.5%	22
10. Claim and Encounter Capture and Adjudication	10.4%	0.31	11.7%	25
11. Information Systems Expenses	3.6%	0.24	34.2%	27
12. Finance and Accounting	1.4%	0.18	58.8%	24
13. Actuarial	11.3%	0.21	12.6%	22
14. Corporate Services Function	1.7%	0.17	50.6%	28
15. Corporate Executive & Governance	1.4%	0.20	64.8%	17
Percentage of Total FTEs that are Outsourced	7.4%	0.19	15.4%	29

*Slope here represents the percentage point change in the change of the percent of FTEs that are outsourced for every percentage point increase in membership growth. For example, a plan has 5% membership growth in year 1 with a 6 percentage point increase of Customer Services FTEs that are outsourced. If in year 2 the plan increases its membership growth rate 1 percentage point to 6%, it can expect its percentage point increase of Customer Services FTEs that are

With this analysis we are unable to explain how Rating and Underwriting was susceptible to short term scale, measured in costs but not staffing, while Advertising and Promotion was susceptible to growth influence on staffing ratios but not costs. The effects of non-labor expenses are a possibility.

Conclusion

In the short term, many health plan administrative expenses are subject to economies of scale, and many of those are the result of staffing stickiness. In some cases, outsourcing and compensation mitigates this relationship.

Figure 7. Short Term Economies of Scale

Rate of Membership Growth and Internal FTE Staffing Cost Growth

Function	R-Squared	Slope*	p-value	Number of Plans
1. Rating and Underwriting	5.8%	-0.27	21.0%	29
2. Marketing	5.4%	-0.35	22.5%	29
3. Sales	0.2%	0.07	83.4%	29
4. External Broker Commissions	NM	NM	NM	0
5. Advertising and Promotion	0.0%	-0.02	96.5%	24
6. Provider Network Management and Services	0.2%	-0.09	80.5%	29
7. Medical Management / QA / Wellness	0.3%	-0.06	79.2%	29
8. Enrollment / Membership / Billing	1.3%	0.26	55.7%	29
9. Customer Services	0.1%	0.05	84.7%	29
10. Claim and Encounter Capture and Adjudication	0.2%	-0.04	82.9%	29
11. Information Systems Expenses	3.6%	-0.24	32.3%	29
12. Finance and Accounting	1.4%	-0.19	54.4%	29
13. Actuarial	27.5%	1.72	0.5%	27
14. Corporate Services Function	2.4%	-0.21	42.1%	29
15. Corporate Executive & Governance	0.0%	-0.06	94.8%	29
Internal Staffing Costs per FTE	0.0%	0.00	97.7%	29

*Slope here represents the percentage point change in internal staffing cost growth for every percentage point increase in membership growth. For example, a plan has 5% membership growth in year 1 with 10% Actuarial internal staffing cost growth. If in year 2 the plan increases its membership growth rate 1 percentage point to 6%, it can expect its Finance and Accounting internal staffing cost growth to increase by 1.72 percentage points to 11.72%.

Note

We hope that you won't hesitate to reach out to us concerning this article. We will be addressing long-term economies of scale in the coming weeks.

Also, we are developing panesl for the 22nd consecutive Sherlock Benchmarks. We believe these are the gold standard for health plan benchmarks because of our robust panel, experience, business model and other attributes.

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Appendix A: Functions Included in Each Administrative Expense Cluster

The 16 main functional areas of administrative expenses used in our benchmarking study are grouped into four clusters to gain an overall perspective. Most of the functions have sub-functions. When totaled, there are 60-70 functions and subfunctions into which each plan segments administrative costs. They are grouped as shown below. Miscellaneous Business Taxes are excluded from the Corporate Services cluster for the purposes of this analysis. Subcategories of functions are also omitted.

Sales and Marketing

- Rating and Underwriting
- Marketing
- Sales
- External Broker Commissions
- Advertising and Promotion

Medical and Provider Management

- Provider Network Management and Services
- Medical Management / Quality Assurance / Wellness

Account and Membership Administration

- Enrollment / Membership / Billing
- Customer Services
- Claim and Encounter Capture and Adjudication
- Information Systems Expenses

Corporate Services Cluster

- Finance and Accounting
- Actuarial
- Corporate Services Function
- Corporate Executive and Governance
- Association Dues and License/Filing Fees

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