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**THE DISTRIBUTION TRENDS OF LABOR COST  
IN A GOVERNMENT ORGANIZATION**

By

**ROBERT CARLOS**

B.A., Economics, University of New Mexico, 2020

Graduate Thesis Paper

Submitted in Partial Fulfillment of the  
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**ABSTRACT**

This study will research growth in cost of support personnel in the Air Force Research Lab (AFRL), Directed Energy Directorate (RD). It will provide comprehensive, six-year comparison of costs from Fiscal Year (FY) 2014 to 2020. Furthermore, the study will analyze trends, and provide recommendations for best practices and optimum resource allocation.

Significant management concern has arisen due to the recent trend in rising indirect labor costs. A comparison of indirect and overhead to direct labor costs details a growth trend illustrating the uneven development and inefficiencies in the distribution of labor cost in the directorate.

The cost of labor is rising faster than the allocated funding appropriations, and the primary source of this increased cost is in indirect, and overhead costs. The ever-increasing ratio of indirect to overhead labor cost can ultimately decrease the directorate's purchasing power in Science and Technology (S&T).

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## INTRODUCTION

This study explores the recent growth trend in indirect/ overhead labor costs for the Directed Energy Directorate (RD), a laboratory within the Air Force Research Laboratories (AFRL). As discussed herein, indirect/ overhead costs are necessary to support the primary work being conducted by federal agencies, but excessive indirect costs can reduce the funding available for Science and Technology (S&T).

The Air Force Research Laboratories began in 1997 after the consolidation of several existing air force laboratories, including the Philips Research site located at Kirtland Air Force Base, Albuquerque, New Mexico. Two AFRL laboratories: The Directed Energy Directorate (RD) and the Space Vehicles Directorate (RV), were established to advance defense science and technology in the research, development, testing, and evaluation (RDT&E) activities. The AFRL's mission is to lead the discovery, development, and integration of warfighting technologies for the United States air, space, and cyberspace forces. Directed energy research involves laser systems, high power electromagnetics, weapons modeling and simulation, as well as electro-optics for space superiority. Space vehicles research serves as space research and development, including space-based surveillance and space capability protection. (Air Force Research Laboratory History, 2014). Six major offices comprise the Directed Energy Directorate: 1) Finance Division (RDF), 2) Contracting Division (RDK), 3) Mission Planning and Support Division (RDM), 4) High Power Microwave Division (RDH), 5) Laser Division (RDL), and 6) Space Electro-Optics Division (RDS). There are sub-branches specific to the research within each division. The funding required to support personnel that are not directly working on Science and Technology, including Contracting Specialists, Financial Management Analysts, and

Program Analysts are identified as indirect costs. Personnel that work directly on Science and Technology are considered direct costs, such as engineers. In general, business practices supporting personnel are considered overhead. However, at the AFRL, overhead is the function of paying personnel that support both the RD and RV missions. Indirect costs are also come from paying personnel that support only one directorate rather than both. Indirect and overhead costs are merged in this study, since both efforts are identified as indirectly supporting the scientific effort.

In an effort to decrease administrative expenditures and management, the structured tasks were centralized in 2014. Several dual-purpose overhead functions within the Phillips Research Site merged to support both the RD & RV directorates. Dual-purpose offices include the finance office, and the contracting office. These offices handled funding and contracts for both directorates. After considering the highly tactical missions of both directorates, leadership decided to separate two support offices including the finance office in 2019, and the contracting office in 2020. The reason to separate support offices is unclear. Nonetheless, the separation of responsibility for finance and contracting allowed for more focus and decision-making support for the individual directorates. This decision also increased program advocacy by the respective directorates. This separation of support tasks ultimately increased administrative costs. Instead of both directorates sharing one Chief Financial Officer, (CFO), and one Chief of Contracting Office, (COCO), there are now two CFOs and COCOs in their respective directorates, as well as other duplicate administration work forces. Nevertheless, this separation ultimately created a more focused approach to the individual directorate mission.

During the directorates' consolidation and centralization of support personnel, individual



programs and technical offices of both directorates established specific positions such as program analysts. The program analysts functioned as the financial experts with immunity from pecuniary liability. Without the ability to be finance management certified, program analysts could not approve funding, and they became reliant on financial managers to process the proper funding documents. The process structured a culture of co-dependency where program analysts prepared all preliminary work and financial managers executed that preliminary work. The dual functionality generated inefficiencies and a lack of qualified financial management implementations such as cost estimating analysis.

The ultimate success of the AFRL depends on its efficient and effective allocation of resources. The goal of financial managers is to provide decision makers the support they need to better allocate financial resources to Science and Technology, rather than increasing ineffective support personnel. Sargent (2018) describes defense science and technology research, development, testing, and evaluation (RDT&E) activities. RDT&E includes funding such as basic research, applied research, and advanced technology development. Sargent (2018) also states that a competitive military advantage of S&T is of great interest to Congress. In FY 2017, the Air Force received over \$3 billion dollars in Defense S&T, proving the importance of continual innovation of war-fighting technologies.

Kendall (2014) under the overall Secretary of Defense for Acquisition, Technology, and Logistics, release guidance to increase buying power and to eliminate unproductive processes and bureaucracy.

Galama and Hosek (2008) reported that although the United States lead the world in S&T, there is a concern about losing this position. The possibility of reducing future S&T purchasing power may reduce the Air Force's effectiveness in defeating world adversaries.

Congress has expressed concerns about funding Defense S&T by increasing funding in basic research, applied research, and advanced technology development programs by 2% above the inflation rate between FY 2001 and FY 2009. However, across the entire Department of Defense (DoD), growth in S&T peaked in FY 2006 at \$13.3 billion, then decreased to \$11 billion in FY 2013, leaving an overall increase in FY 2017 to \$14 billion. (Sargent, 2018)

In the 2020 article “Accelerate Change or Lose,” General Charles Brown, Air Force Chief of Staff states: “In an environment that includes, but is not limited to, declining resources, aggressive global competitors, and rapid technology development and diffusion, the U.S. Air Force must accelerate change to control and exploit the air domain...” (Page 3)

The United States Air Force (USAF) Science and Technology Strategy 2030 focuses on the necessity for a transformational operational capability in support of the National Defense Strategy. The call to action is to make important changes to science and technology management at the headquarters and laboratory levels to more effectively develop those concepts and support their transition into the future force. In order to transform and innovate, USAF must constantly increase its efficiency in order to become more effective in defeating its adversaries. Investing in Science and Technology rather than support functions manpower should be a priority for Directed Energy.

The Air Force Research Laboratory Commander, Brigadier General Heather Pringle, highlights three 2021 priorities; to accelerate S&T 2030 Strategy Implementation, to consolidate “One AFRL”- serving the USAF and USSF, and to lead the best AFRL team. The first priority to accelerate S&T 2030 Strategy Implementation involves alignment of AFRL’s processes, resources, and priorities to better align with those of the Department of the Air Force S&T 2030 strategy. The number one priority is their ability to develop and

deliver disruptive innovation to USAF and USSF war-fighters. The second priority is to strengthen partnerships in the space domain to support both the Air Force and the Space Force. The third priority is to lead the best AFRL team possible by accelerating innovation and embracing the power of collective learning.

According to data presented in the FM Townhall, the AFRL Headquarters Financial Management 2021 priorities include: shifting Financial Management into an integrated organization that expands opportunities for the finance workforce, enhances decision support to the S&T mission, and provides exceptional financial support to mission partners that is consistent throughout the enterprise. One way to lead the best AFRL team is by changing the perception of Financial Management from transactional focus to mission focus (FM Town Hall).

After observing the growth of labor cost in Directed Energy as compared to the appropriated funds received, there is concern in decreasing purchasing power due to the growth of labor cost. Questions arise in the indirect labor cost growth compared to direct labor cost. What are the distribution trends in labor cost between direct, and indirect/ overhead between 2014-2020 in the AFRL Directed Energy Directorate? To further research the possible growth in the investment of support workforce, one area of focus is the distribution of labor costs between those working directly on the program and those working indirectly i.e., direct, and indirect labor types.

This study will focus on the distribution of labor costs between direct, indirect, and overhead for Directed Energy for over six years (2014-2020) among the following offices: the Finance Division (RDF), Contracting Division (RDK), Mission Planning and Support Division (RDM), High Power Microwave Division (RDH), Laser Division (RDL), and Space Electro-

Optics Division (RDS). Furthermore, this study intends to observe, analyze trends, compare, and provide best practices and optimum resource allocation recommendations.

## LITERATURE REVIEW

Huijben et al. (2014) describe overhead as a phenomenon that people associate with the 'fat' or 'self-rising flour' of an organization. However, it also outlines the importance of function to fulfill an organization's mission. One example of the 'fat' or 'self-rising flour' being finance, described as the lifeblood of any organization with primary responsibility to process of procuring financial resources and its judicious utilization with a view to maximize the shareholders wealth stated Savita (2011).

Attitudes surrounding administrative costs can be either positive or negative. Several scholars attribute administrative spending as a negative argue against wasteful spending attributed to salaries, unnecessary staff, or ineffective bureaucracy (Boon & Wynen, 2017; Hujiban et al., 2014). The other school of thought is that administrative costs correlate positively to organizational effectiveness and increased optimal levels (Bowman 2006). Many governments have attempted to reduce overhead functions in efforts to redirect resources to frontline services, (Gershon, 2004). Research by Boon and Wynen (2017) further discusses that overhead is often considered as a negative indicator of government waste.

Deciding how to allocate financial resource investments in support or overhead functions can be troublesome for administrators when deciding on optimum resource allocation. It is not easy to measure or recognize overhead functions or "added value", which can aggravate employee's emotions when overhead cuts happen. (Hujiben et al., 2014).

Another issue is the changing nature of supporting tasks. An example of this is how financial transactions and business practices have changed over the years. They have actually become more efficient with improvement financial systems.

Furthermore, in order to determine if an organization has excessive overhead, benchmarking

the organization with a similar one in the same sector is recommended. By benchmarking an organization's overhead size, it is easier to compare and determine the correct overhead size Hujiban et al. (2014) suggest.

Rooney et al. (2003) showed that as organizations age, their administrative cost rise related to total expenses. They further discussed that administrative costs are related to the organization size as a result of economic of scale assumptions. Blau (1978) suggests that the relative size of administrative overhead costs decline with increasing organizational size. Larger-scale operations (i.e., centralized overhead) follow the economics of scale theory that suggests that larger scale operations decrease overhead costs. Organizing the different roles or tasks can be assigned to specialized functions allocated. Centralizing management is logical to decrease cost while still forming the multivariate work functions and tasks to centralized management. Hujiban, et al., (2014), conducted a series of structured interviews with similar organizations to determine what influences the support workforce's size. The six main relevant factors associated with support functions are: The sector to which the organization belongs, the control philosophy, such as 'tight control' and 'loose control', the overhead departments' service provision levels, such as the stipulation of support extended, the historical development of overhead and the prevailing culture, the organization of overhead across various departments and the coordination between centralized and decentralized overhead departments are often insufficient, and the affordability of overhead plays an important role. Many factors influence the size of support functions, even within the same sector. As outlined, the reasons vary depending on the willingness of the directorate to invest in reasonable overhead costs without over-burdening resources. Larger organizations can reduce overhead cost by centralizing responsibilities. An important note is the

decentralization of an organization overhead task include duplicate tasks efforts.

Centralization is a human resource structure organize by similar position tasks compared to decentralization when work functions are separated and structured in independent offices.

When organizations centralize overhead workforce, middle management can be discontent regarding the centralization leading to the decentralized again, managers intending to regain control, which Hujiban et al. (2014) call undesirable for the organization.

Boon and Wynen (2017) claim that as organizations grow, activities related directly to the mission of the organization decrease, while support administrative activities increase.

Although larger organizations can distribute overhead costs across a wider range of activities, the growth in the organization naturally yields to needing more overhead staff to support the management, (Terrien & Mills, 1995).

In the interviews conducted by Hujiban et al. (2014), that when then notified an organization of the possibility to save millions on overhead, the response was that they think in billions there referring that saving a couple of millions was 'pocket change'. That same reality is also important when dealing with large amounts of appropriations; one can think that efforts to decrease and save in support cost are irrelevant.

According to Cook and Graser (2001), overhead costs related to the activities cannot be charged directly to any particular product. This means that the indirect, and overhead support contributions cannot be attributed directly to a program. The Military Airframe Acquisitions Costs Report conducted by Rand in 2001 affirms that overhead is a very significant cost driver in engineering and manufacturing.

Wing et al. (2004) address three importance motives of paying for overhead costs rather than cutting the overhead budget: 1) paying low salaries challenges the ability of personnel to

recruit and retain a skilled, and experienced workforce, 2) under staff support personnel can increase the risk of sacrificing the mission, and 3) wrongly limiting costs or ignoring the needless or wasteful expenditures.

The U.S. Air Force Science and Technology Strategy 2030 voices the necessity for a transformational operational capability in support of the National Defense Strategy. The call to action is to make important changes to science, and technology management at the headquarters and laboratory levels to more effectively develop those concepts and support their transition into the future force. In order to transform and innovate, USAF must make changes to become more effective in defeating our enemies.

Significant changes are needed to improve operational capabilities across any organization, yet there also many variations in optimum allocation of support functions. Many scholars discuss the negative reputation associated with overhead costs, (Boon & Wynen, 2017; Hujiban, et al., 2014). However, the same scholars agree of the importance of overhead to lead the mission.

The longevity of any organization also impacts the overhead cost primary related to total costs, (Rooney, et al., 2003). The theory of economics of scale defends the centralization of overhead costs. Those costs ultimately increase the size of organization, and in concept at least, decrease overhead cost due to the spread of overhead cost over a larger organization, (Blau, 1978; Boon & Wynen, 2017; Hujiban, et al., 2014).

Moreover, reducing overhead can be counterproductive, Wing, et al. (2004), argue the importance for optimum allocation in order to avoid risk to mission essential performance and to retained skilled and experienced workforce.

This literature review has centered on the research questions that determine what the



distribution trends in labor cost between direct, and indirect, and overhead costs have been between 2014, and 2020 in the AFRL Directed Energy Directorate. It outlines the complexity of determining the optimum allocation of support personnel, while keeping in mind the importance of overhead costs to any organization. This review will reveal the trends over the past six years in order to better understand the state of support personnel in the Directed Energy Directorate.

## METHODS

The quantitative data for this study was obtained from the AFRL's Job Order Cost Accounting System, (JOCAS), time and attendance database. This data includes labor hours, and labor cost amounts organized by fiscal years. Labor costs are categorized into direct, indirect, and overhead using the Fundamental definitions provided in the AFRL Financial Management Desktop Procedures Guide. The difference between labor types comes from their specific contribution to various scientific efforts. For example, labor costs from paying a program manager or engineer supporting a program are considered direct hours. In contrast, labor costs from a supervisor or program analyst are considered indirect hours. For simplicity, indirect and overhead hours are merged, since both efforts indirectly support a scientific effort.

The data analysis includes a labor type distribution trend from FY 2014 to FY 2020 of direct, indirect to overhead labor cost. The percentage of growth of direct, indirect to overhead cost was measured per year as well as the 6-year total percentage growth from FY 2014 to FY 2020.

The ratio, or proportion between indirect/ overhead labor costs to direct labor cost was also calculated. The analysis was conducted for the directorate as a whole, and each division, including RDF, RDK, RDH, RDL, RDM, RDS.

In order to better understand the labor cost growth, data were normalized to FY 2014.

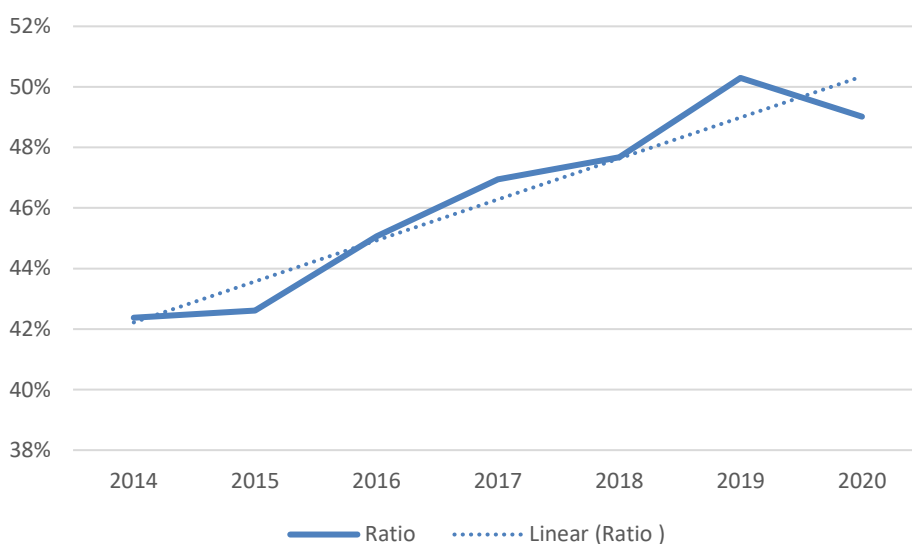
External factors for the growth in labor cost such as increased personnel or promotion of step/grade was not accounted for in this analysis. Normalizing the data removes the Cost of Living Adjustment, (COLA), nevertheless, promotions and human capital outlay also contribute to the cost growth.

To find out if the purchasing power of S&T was affected by the growth of labor cost, the funding appropriations give through the President's Budget, (PB), was analyzed as well. We distributed the PB to each Core Technical Competencies, (CTC), and measured the percentage growth each year. The PB growth was then compared to the labor cost growth for the entire directorate and each CTC. Since the PB growth should account for the growth in COLA, the non-adjusted data was used for better comparison.

## DATA DESCRIPTION AND ANALYSIS

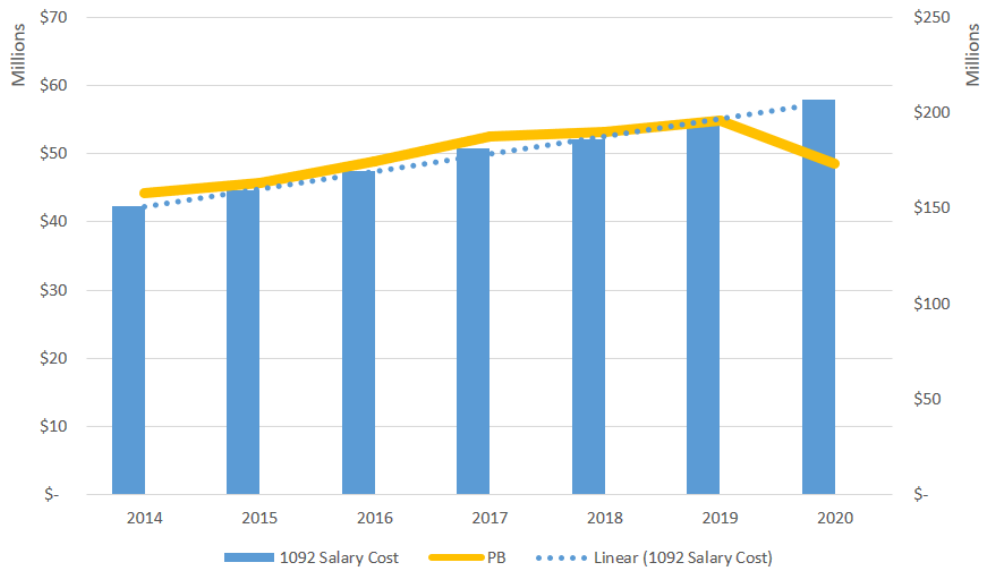
Indirect and overhead labor costs grew faster than direct labor costs resulting in the growing allocation of resources in support functions rather than those directly involved in Science & Technology (S&T) research. The ratio of indirect to direct labor cost peaked in FY 2019 at 50:50 ratio and maintained relatively constant in FY 2020 at 49:51. The indirect/ overhead ratio increased by nearly 15% between FY 2014-2020 as indicated in Figure 1.

*Figure 1: Indirect/ Overhead to Direct Ratio Trend*



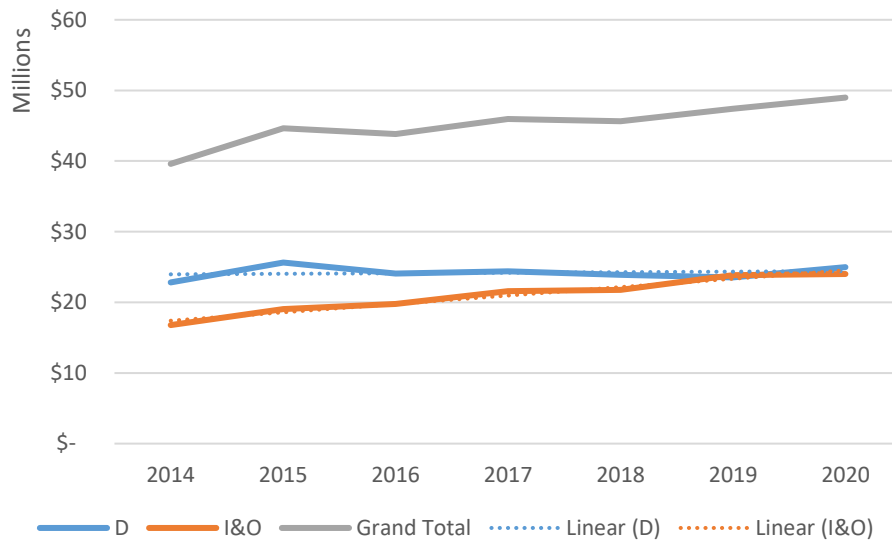
During this period, the total labor cost increased from \$42.3 million in FY 2014 to \$58 million in FY 2020, about a 33% growth. Concerns in allocation of resources rise as the President's budget (PB) increases at a diminishing rate of 11%, compared to a comparable labor cost that grew by 33%. The growth of indirect labor cost rises at a higher rate than the appropriated funds, this rise causes the purchasing power of appropriated S&T to diminish as the must-pay labor cost continues to increase, see Figure 2.

*Figure 2: Growth of Labor Cost Compared to PB*



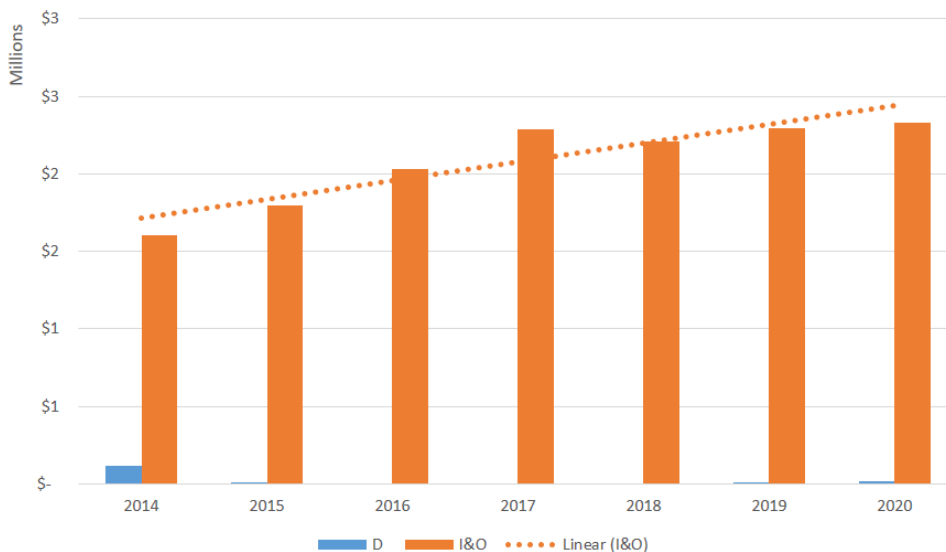
After removing the growth of cost-of-living (COLA), labor growth was nearly 20% between 2014 and 2020. The data shows that the increase in labor cost is not primary associated with COLA, but with the promotions in step/ grade and manpower overlays. As the direct labor cost increased by 10%, indirect and overhead labor costs grew by 38%. The adjusted data in FY 2020 indirect/ overhead was \$23.3 million; it grew by \$6.5 million from 2014, see Figure 3.

Figure 3: Labor Cost Distribution



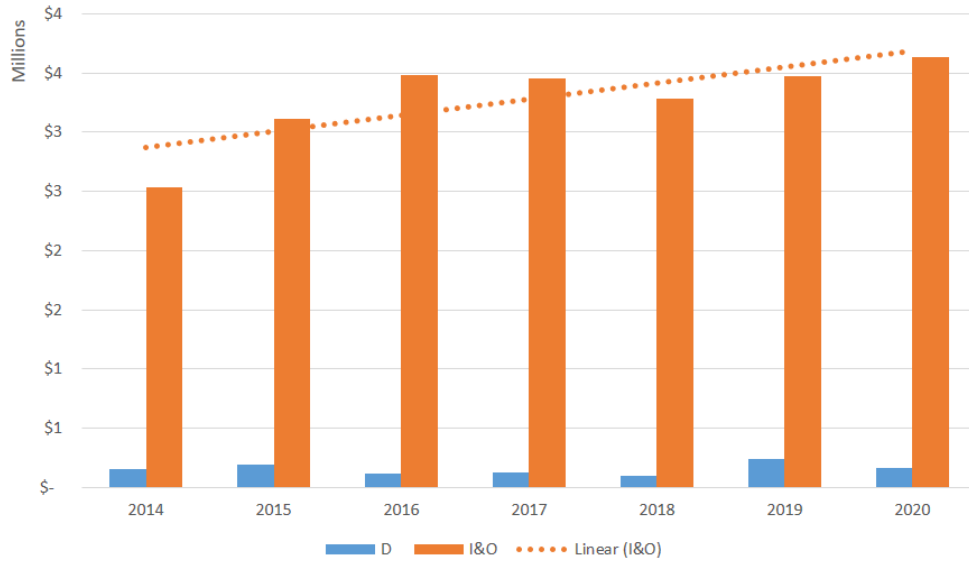
The Finance Office, (RDF), indirect/ overhead increased 40% to \$2.3 million in FY 2020, about \$730 thousand difference from FY 2014 indicated in Figure 4. In FY 2019, the finance separation of support between RD and RV occurred, which could be a reason for the growth.

Figure 4: RDF Labor Cost Distribution Trend



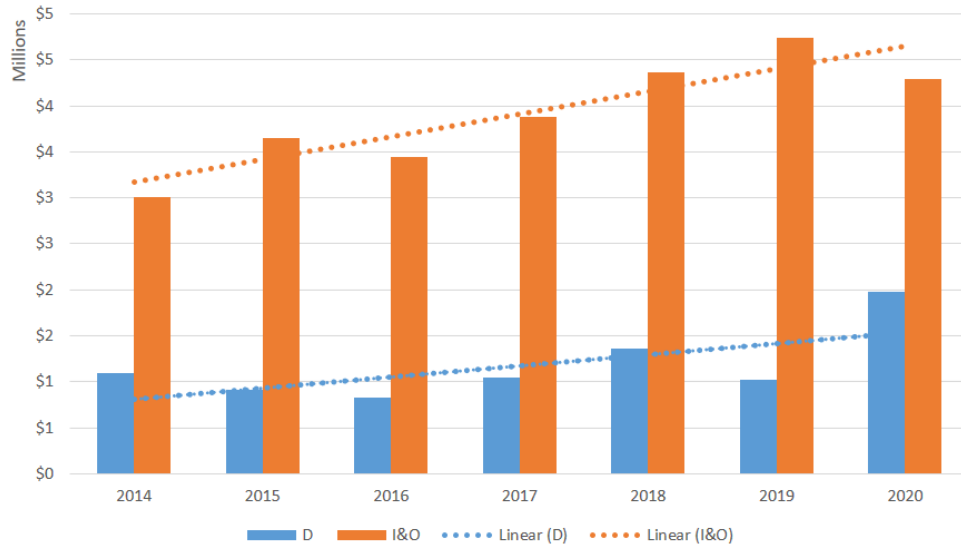
The Contracting Office (RDK) also experienced a growth in indirect/ overhead of 57%, about \$1.5 million, leading to a total cost in FY 2020 of \$3.6 million illustrated in Figure 5.

Figure 5: RDK Labor Cost Distribution Trend



The Mission Planning and Support Office, (RDM), likewise increased indirect/ overhead by 40% or about 2.2 million, and direct labor cost increased 99%, about \$1 million indicated in Figure 6.

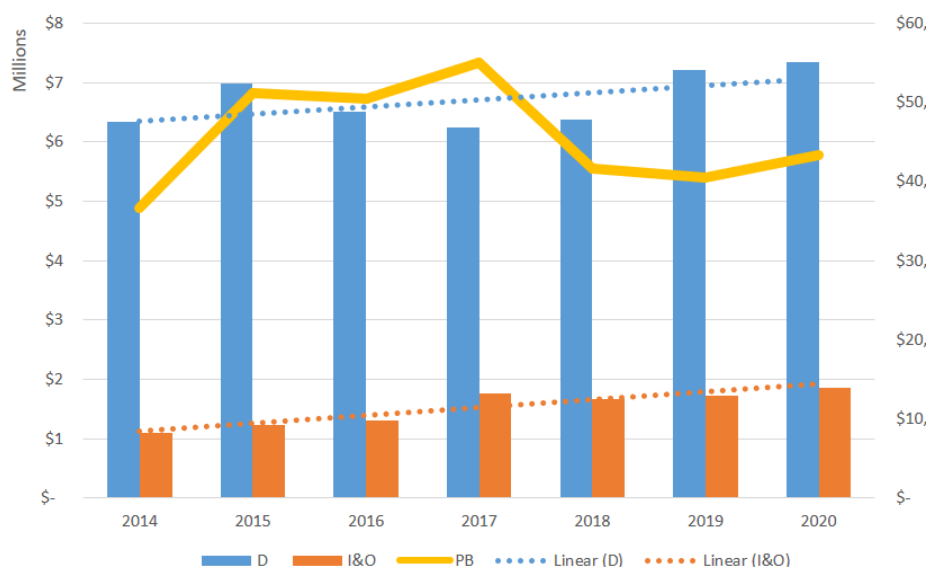
Figure 6: RDM Labor Cost Distribution Trend



The High-Power Microwave Division, (RDH), trend for direct labor in FY 2020 was \$7.4 million. The cost grew 13%, about \$779 thousand, relatively constant compared to the

indirect labor cost of \$1.9 million, which increased by 57%, about \$1.5 million shown in Figure 7. The ratio of indirect to direct labor cost is 20:80 or 1:4. Based on the FY 2021 technical indirect budgets, total support cost \$2.1 million. From which about \$1.2 million investment is in the business office. In comparison with the PB that increased by 27%, labor costs also grew by 23%.

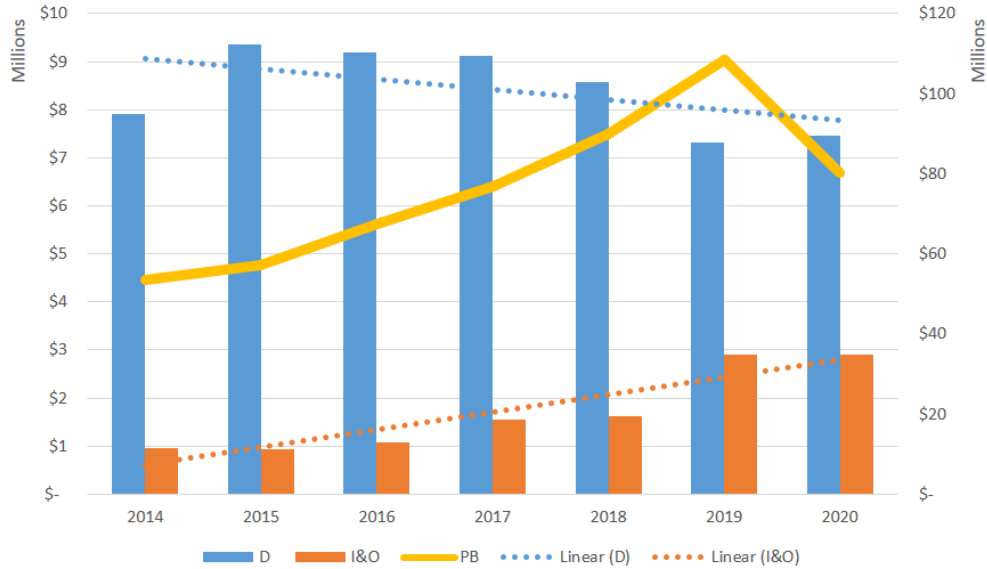
*Figure 7: RDH Labor Cost Distribution Trend compared to PB*



The Lasers Division, (RDL), trend for direct labor cost in FY 2020 was \$7.5 million, which decreased 6%, about \$680 thousand indicated in Figure 8. However, indirect labor costs of \$2.9 million increased 141%, about \$1.9 million. The current indirect to direct labor cost ratio is 28:72. Based on the FY 2021 technical indirect budgets, total support cost \$3.4 million. From which \$1.1 million investment is in the business office. Compared to the President's budget increased by 51%, labor costs also grew by 17%.

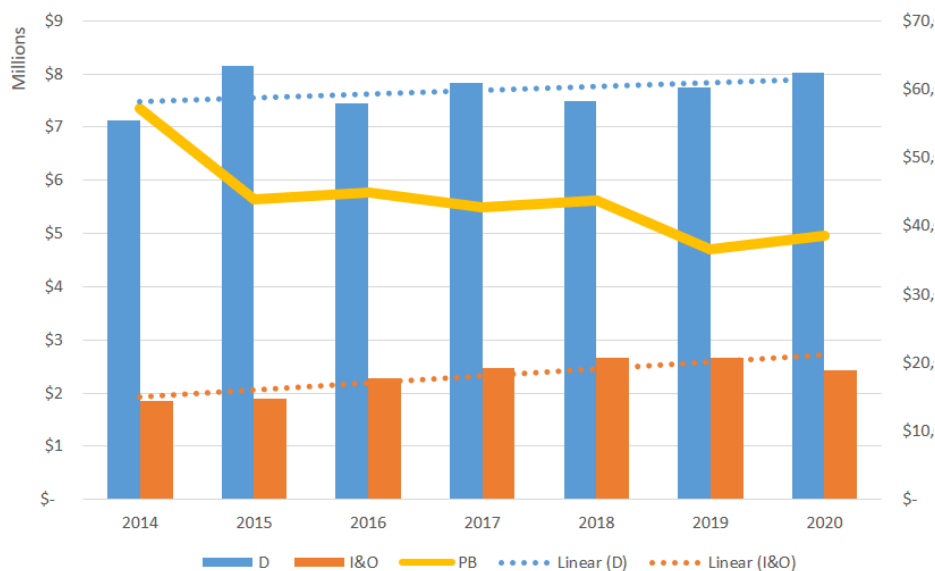


Figure 8: RDL Labor Cost Distribution Trend compared to PB



The Space Electro-Optics Division, (RDS), trend for direct labor cost in FY 2020 was \$8 million. This figure grew 10%, about \$659 thousand, compared to the indirect labor cost of \$2.4 million that grew by 27%, about \$508 thousand, as illustrated in Figure 9. The indirect to direct labor cost ratio decreased to the current position of 23:77. Based on the FY 2021 technical indirect budgets, total support cost \$4.1 million. From which about \$900 thousand investment is in the business office. Compared to the President's budget increased by 34%, labor costs also grew by 16%.

Figure 9: RDS Labor Cost Distribution Trend compared to PB



The disparities in labor types of cost distribution continue to increase positively in favor of indirect/ overhead diminishing manpower investments related directly to the mission of AFRL. The growing indirect/ overhead manpower cost ultimately decreases S&T purchasing power. The business offices cost is about \$2.8 million, and the finance office cost is about 2.3 million. Total invested in finance and business offices is \$5 million as shown in Figure 10.

Figure 10: Business Office Cost compared to Finance

Office	Labor Cost
RDHB	\$ 775,540
RDLB	\$ 1,027,088
RDSP/MP	\$ 1,003,770
Business Offices Subtotal	\$ 2,806,398
Finance Office (RDF)	\$ 2,331,850
<b>Total</b>	<b>\$5,138,248</b>

## DISCUSSION

The growing cost of labor cost is increasing faster than the funding appropriations, and the primary growth in indirect and overhead is of concern. The growth disparity is between labor cost and funding is 22%. Consequently, the ever-increasing indirect/ overhead labor cost can ultimately decrease S&T purchasing power. The S&T 2030 strategy calls for transformational operational capabilities to support the National Defense Strategy. The solution is to make essential changes now in order to become more effective and transition in the future. Previous OUSD guidance has pushed the USAF to increase purchasing power by eliminating unproductive processes and bureaucracy. Most recently, AFRL Commander Intent, to accelerate S&T 2030 strategy implementation and to lead the best AFRL team. The growth of indirect/ overhead among the technical offices such as RDL, RDH, and RDS is a concern since the major support functions such as finance and contracting are accounted in their respective offices. Between FY 2014 and 2020, RDL's indirect labor cost grew by 141%, increasing their support personnel ultimately affects RDL's S&T purchasing power since the allocation of resources are allocated in duplicated personnel such as program analyst whose functions are comparable to existing responsibilities of those in contracting and finance office.

The amount of funding appropriated to the AFRL is issued by Congress signed in law each fiscal year. Between FY 2014 and 2020, the funding has increased but it's not a guarantee that it will continue to increase. Sargent (2018) showed that the DOD appropriations peaked in FY 2006 at \$13.3 billion but it later decreased and increased again. It appears that as the RD receive more funding it is invested in indirect/ overhead manpower. The possibility that Congress makes budget cuts and distribute funding differently can occur.

AFRL RD must “accelerate change or lose”. If the trend continues at the same rate over the next 6 years labor cost could exceed \$80 million. If the same trend continues there will be an uneven equilibrium of support to our direct mission efforts. The implications of the ever-growing ratios of overhead can cause a reduction in budget allocated directly on mission efforts. Eventually the increasing budget allocation in indirect matters such as support personnel will lead a reduction in the research and delivery of S&T.

As Hujiban et al. (2014) suggest, when an organization holds inefficient positions, it has to consider either cost reduction actions or benefit improvement actions. Cost reductions would include personnel layoffs, which ultimately eliminates a given position. The benefit improvement actions can include a reorganization of work to accommodate for the inefficiencies of positions.

Reducing personnel is not pleasing, and not desired by administrators, yet it is the decision that some administrators take when confronted with a budget constraint. This necessitates an equilibrium between under-staffing and over-staffing personnel to reach optimum distributions between direct and indirect to overhead labor cost.

## CONCLUSION AND RECOMMENDATIONS

In summary, the distribution of labor cost has grown by \$16 million or 33% over a six-year period (2014-2020), even though the appropriated funding has only grown by 11%. When adjusting for COLA, labor cost increased by 20%., direct labor cost increased by 10%, and indirect and overhead costs increased by 38% respectively. The ratio of direct labor cost to indirect labor costs was determined to be nearly a one-to-one ratio. The funding allocated for S&T is diminished by the growing cost of indirect to overhead labor, and it increases at a significantly higher rate than funding appropriations.

Therefore, this study recommends that a human resource manpower impact assessment be conducted. The manpower impact assessment should include an operational audit that will recognize the direct workload of support positions. A manpower impact assessment is a human resource study that evaluates the workload as compared to personnel requirements. This comparison is necessary in order to implement changes to the workload. By comparing the effects of reducing the manpower supply of support personnel, adjustments can be made according to the assessment report. In the absence of a manpower assessment, it is recommended that indirect and overhead labor costs should be decreased in the long term without a formal reduction of workforce. AFRL Headquarters Financial Management 2021 priorities for the finance offices across the enterprise to enhance decision support to the S&T mission and change from a transactional focus to a mission focus. The full integration of finance in S&T will allow for the consolidation of currently duplicated functions in the business offices with those in the finance office, including the Program Analyst and Financial Management Analyst. This review recommends the consolidation of workload and job responsibilities in order to decrease personnel support cost without

conducting a work reduction. The consolidation of functions will decrease unproductive processes, and lower indirect labor costs leading to the growth of S&T purchasing power.

## REFERENCES

- Air Force Research Laboratory. (2014, December 15). Retrieved from <https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104463/air-force-research-laboratory/>
- Boon, J., & Wynen, J. (2017). On the bureaucracy of bureaucracies: Analysing the size and organization of overhead in public organizations. *Public Administration*, 95(1), 214-231.
- Brown: 'Accelerate Change or Lose'. Aug. 30, 2020
- Cook, C. R., & Graser, J. C. (2001). Military airframe acquisition costs. The effects of lean manufacturing. Rand Corp Santa Monica Ca.
- Galama, T., & Hosek, J. (2008). US competitiveness in science and technology. Rand Corporation.
- Gershon, P. (2004). Independent review of public sector efficiency: Releasing resources to the front line. Hm Treasury.
- Huijben, M., Geurtsen, A., & van Helden, J. (2014). Managing overhead in public sector organizations through benchmarking. *Public Money & Management*, 34(1), 27-34.
- Keck, K (2021, February 24). FM Town Hall
- Kendall, F. (2014). Better buying power 3.0. Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, 19.
- Pringle, H. (2020). Air Force Research Laboratory Commander's Intent. The Air Force Research Laboratory.
- Rooney, P. M., Hager, M. A., & Pollak, T. H. (2003). Research about fundraising and administrative costs. *Giving USA Update*, 2, 1-8.
- Sargent, J. F., Jr. (n.d.). Defense Science and Technology Funding. Congressional Research

- Service. Retrieved February 21, 2018, from <https://fas.org/sgp/crs/natsec/R45110.pdf>.
- Savita, T. (2011). Impact of working capital management on the profitability of limited companies. *Advances in Management*.
- Terrien, F. W., & Mills, D. L. (1955). The effect of changing size upon the internal structure of organizations. *American Sociological Review*, 20(1), 11-13.
- Wilson, H. (2019). US Air Force Science and Technology Strategy 2030 and Beyond. Dept of the Air Force Washington United States.
- Wing, K., Pollak, T., & Rooney, P. (2004). Toward a theory of organizational fragility in the nonprofit sector (Overhead Cost Study Working Paper. Urban Institute).