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ABSTRACT

The workforce of the DOD was reduced by thousands as the military services worked to meet diminished budget numbers in 2013 due to sequestration. The workforce reduction combined with decreased funding allocated for training is having hazardous effects on the human capital of the DOD. The quantitative data within this case study shows a 5 percent drop in employees between 2012 and 2013, but also an 8.37% decrease in education and training funding. Since the effects of sequestration were alleviated due to the Bipartisan Budget Act of 2013, the data shows that the DOD has not recovered from the budget impacts of sequestration. The research highlights the concerns associated with diminishing the workforce and the funding allocated for education growth, but also discusses future research recommendations on methods to absorb budget cuts to prepare for the unknown future in 2018.
INTRODUCTION

The effects of sequestrations during 2013 were undeniably harsh as budgets were reduced without little preparation, the workforce was cut in order to meet the demands of a smaller amounts of funding, and much of the civilian workforce was left contemplating the job security of their positions\(^1\). In the two years following the Budget Control Act of 2011, Congress worked to reform the budget, but was unable to agree on reform which result in sequestration in 2013. Due to the effects of the Budget Control Act of 2011 and sequestration, the DOD was required to make significant cuts that had a direct impact on the human capital, or knowledge and abilities of the people that complete the mission. One of the major implications of Sequestration was the significant budget cuts that had to be applied to reach significantly reduced budget levels and a large portion of these cuts degraded the human capital of the DOD. This research highlights the areas of human capital, workforce recruitment and education, which were degraded heavily due to the budget cuts and examine the implications for the future.

This analysis uses a case approach to provide an in-depth analysis of the effects that sequestration has had on human capital in a systematic method.\(^2\) By answering the research question of how has the budget sequestration affected the retention and educational development of the DOD’s professional military and civilian workforce, issues can be highlighted that need to be considered in the event sequestration budgets return in the future. The case study brings adequate attention to those consequences so additional research can be completed in the event sequestration budget levels return.

The remainder of the research paper will offer a discussion on the background of the key legislation that shaped the sequestration budget crisis from 2013 to the present. The three main pieces of legislation that will be discussed in the background are the Budget Control Act of 2011
and the Bipartisan Budget Acts of 2013 and 2015. In order to properly understand the analysis that will follow the background, there needs to be an effective description of the events that results in declining budgets and a drop in DOD human capital. The next three sections of research will examine historical numbers on the workforce and education and training funding to analyze the effects of sequestration since 2013. As previously mentioned, the intent is to highlight concerns in the event sequestration level budgets return in the future, so the final quantitative analytical section will offer a trend analysis of what may occur in the future if sequestration budgets do return. Lastly, the research will conclude with recommendations from that trend analysis and a summary of the keys facts and data from the research. Through this case study the audience will understand the effects sequestration has had on DOD human capital and the importance to research additional methods for applying cuts in the future.

BACKGROUND

The drastically reduced budgets that resulted from the legislation was not the intended outcome of the Budget Control Act of 2011, but was only designed to serve as a mechanism in place to ensure that Congress were to reach an agreement of budget reform. In the two years following the Budget Control Act of 2011, Congress was unable to reach budget reform and the mechanism of sequestration level budget cuts did not work as intended. House Armed Services Committee Ranking Member Adam Smith discussed the consequences that sequestration would have on the DOD and described them as dangerous to the ability of the DOD to carry out their missions. With the consequences fully understood by members of Congress, many believed that Congress’ elected body would not allow sequestration to take effect. The remainder of the background will discuss in more detail the Budget Control Act of 2011, Bipartisan Budget Acts of 2013 and 2015, and alternative viewpoints on sequestration.
**Budget Control Act of 2011**

The Budget Control Act of 2011 was introduced in 2011 by Senator Tom Harkin (D-IA) and is known as the public law that enforced sequestration budget reductions on the discretionary budget of the United States. The primary intent of the Budget Control Act of 2011 was to serve as a forcing mechanism against Congress to reach an agreement on how to reduce the budget deficit of the United States, but if Congress was unable to reach an agreement automatic spending cuts would take place, known as sequestration. The U.S. military is the largest recipient of the discretionary budget, so any automatic funding cuts to discretionary funding would have severe consequences to the DOD. The goal as reflected in Title IV of the Budget Control Act of 2011 was to reduce the national deficit by $1.5 trillion from fiscal year (FY) 2012 – FY2021 and if Congress would be unable to agree on how that will be done automatic budget cuts would be enforced on the discretionary budget.

With the belief that sequestration would not occur adequate planning did not occur in the event budgets were severely decreased, and the DOD actually chose to ignore sequestration in its initial plans. Without effective plans in place in 2013, the DOD was forced to make quick decisions on how to manage the budget cuts and a large portion of the cuts resulted in a workforce reduction, furloughs, and cuts to non-essential programs such as education and training. With the effects of sequestration so severe in 2013, with a workforce reduction at approximately 10 percent, legislation was developed in Bipartisan Budget Acts to lessen the burden in future years.
Bipartisan Budget Act of 2013 & 2015

The Bipartisan Budget Act of 2013 raised the sequestration level budget caps implemented due to the Budget Control Act of 2011. The legislation only applied to fiscal year 2014 and 2015 and unless Congressional agreements were reached in the future, sequestration level budgets will return in 2016. Once sequestration took effect in 2013, there was a sharp decline in available resources throughout the DOD. This drop in resources resulted in a drop in retention and educational development of the workforce as funding for these efforts were moved to mission essential programs. The Bipartisan Budget Act of 2013 provided a reprieve from the budget cuts due to the Budget Control Act of 2011 and provide the DOD efficient time to develop better plans to apply budget cuts in the future.

With the negative consequences of sequestration still fresh in the minds of DOD leadership and Congress, the Bipartisan Budget Act of 2015 was developed that raised sequestration level budget caps implemented due to the Budget Control Act of 2011 for FY2016 and FY2017. In the two years since the Bipartisan Budget Act of 2013 Congress was unable to reach an agreement on how to reduce the budget deficit, so additional legislation was necessary to eliminate the immediate effects of sequestration. Unless additional legislation is passed to again extend out the effects of sequestration or if Congress agrees on a plan to reduce the budget deficit, sequestration level budget cuts will return in 2018. The Bipartisan Budget Act of 2013 and 2015 has given the DOD ample time to recover from the budget cuts in 2013 and to effectively plan in the event drastic cuts have to be taken in the future, but the analysis in the remainder of the paper will examine the effects of the Budget Control Act of 2011 and the recovery that has happened during the time the Bipartisan Budget Act of 2013 and 2015 have been in effect.
Alternative Viewpoints on Sequestration and Background Summary

In order to make the necessary reductions to meet the funding levels established by the Budget Control Act of 2011, the DOD has had to examine contracting practices, business systems, and inventory management processes to reach the necessary cost reduction. Many of the deficiencies in contracting practices, business systems, and inventory management processes have been highlighted by the Governmental Accountability Office (GAO) as significant concerns in how the DOD operates. Many argue that sequestration is forcing the DOD to look for efficiencies within their standard process and make changes that are common in private industry to lower cost and would not have occurred if sequestration did not happen.

Many believe that the budget cuts are forcing a force reshaping and reduction that is necessary to get manpower to a more realistic level. A 2013 Air Force article noted that as many as 25,000 Airmen could be cut within five years in result of sequestration. Additionally the Army plans to cut 30,000 active and reserve personnel by the end of FY 2016, credited partially to the reduced budget levels. Many of these cuts can be attributed to the budget cuts in 2013 and the threat of those budget levels returning in the future, but many feel that these cuts are one of the positive effects sequestration is having on how the DOD operates.

These two alternative arguments highlight the fact that sequestration has not had an overwhelming negative impact to how the DOD operates on a day-to-day basis. The point of this paper is not to sell the reader on the overall impact that sequestration has had either in a positive or negative way, but to highlight some of the concerns that exist in human capital due to sequestration. The method in which the budget cuts were applied has had a negative impacts on
human capital the quantitative data that will be presented in the research will only add to the
discussion on how any future budget cuts will be applied in the future.

**QUANTITATIVE ANALYSIS & DISCUSSION ON WORKFORCE CUTS**

The Defense Manpower Data Center (DMDC) maintains an archive of manpower and
personnel data of the military and civilian workforce for the DOD. The data from the DMDC
archives will be used to analyze the workforce prior to the Budget Control Act of 2011 and to
evaluate the decrease of workforce numbers that occurred from the budget cuts that happened in
2013. The intent of examining the data before and during 2013 is to track how many positions
were cut within the DOD, but to also highlight which of the military services had the largest
reduction in workforce in 2013.

**Quantitative Analysis**

One of the factors that relates to the human capital of the DOD is the individuals that
work and support the mission within the civilian and active duty ranks. Due to the effects of
sequestration there was a significant drop in the civilian and active duty workforce numbers
when the numbers are presented from December 2011 to December 2013 in Table-1 below.

**Table 1. Total DOD Civilian and Active Duty (December 2011 to December 2013)**

<table>
<thead>
<tr>
<th></th>
<th>Dec-11</th>
<th>Dec-12</th>
<th>Mar-13</th>
<th>Sep-13</th>
<th>Dec-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOD CIVILIANS</td>
<td>762,243</td>
<td>758,927</td>
<td>750,819</td>
<td>729,856</td>
<td>723,402</td>
</tr>
<tr>
<td>ACTIVE DUTY</td>
<td>1,425,113</td>
<td>1,399,622</td>
<td>1,393,976</td>
<td>1,388,330</td>
<td>1,382,684</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,187,356</td>
<td>2,158,549</td>
<td>2,144,795</td>
<td>2,118,186</td>
<td>2,106,086</td>
</tr>
</tbody>
</table>

*Adapted from Defense Manpower Data Center, “DoD Data/Reports,” “Statistics & Reports,”
https://www.dmdc.osd.mil/*.
As Table 1 shows, both the civilian and active duty workforce saw significant reductions in the workforce in calendar year (CY) 2013 as a result of sequestration. The active duty reduction was not as significant and only resulted in a 3 percent drop from December 2012 to December 2013, but the DOD civilian workforce faced a significant reduction of 35,525 individuals or 5 percent. The active duty workforce had already faced a significant reduction in 2012 of around 25,500 and with the added reduction in 2013 a noticeable decrease in the individuals working as active duty members could be seen around the DOD.

Losing a significant portion of the workforce at any given time is difficult to work around and with the unknown budget future at that time, the situation created a stressful situation among most organizations within the DOD. With the DOD supported heavily on the knowledge and experience that the workforce provides, the actual long term effects of losing a significant portion of its workforce cannot be accurately measured. One example of the particular impacts caused by the quick turnover of employees is the early retirement and early separation incentives that were offered at Robins Air Force Base in 2013. From October 2012 to April 2013, 392 civilian employees at Robins Air Force Base accepted the terms of early retirement and early separation as a result of the cuts necessary to meet the budget demands in place as a result of sequestration. Assuming that most of the 392 individuals were at a retirement age with equivalent minimum experience of 20 years, more than 7,500 years of experience exited from the workforce at one military installation without the immediate intention to replace those individuals. Knowledge is an important pillar of what strengthens the human capital of the DOD workforce and with sudden turnover of a large portion of that knowledge and experience is potentially devastating to specific communities such as Robins Air Force Base. This is one of several similar examples of what happened throughout the DOD in 2013 to manage the budget.
impacts of sequestration, but each of the military services managed the budget cuts differently in regards to the impact on the civilian workforce.

The next portion of the research shows how each of the military services managed the budget cuts by analyzing the change in the number of civilian employees. Table 2 displays how the civilian workforce populated fluctuated and decreased in each of the services within the same time period as previously discussed in this section.20

Table 2. Total DOD Civilian by military service (December 2011 to December 2013)

<table>
<thead>
<tr>
<th></th>
<th>Dec-11</th>
<th>Dec-12</th>
<th>Mar-13</th>
<th>Sep-13</th>
<th>Dec-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR FORCE</td>
<td>173,669</td>
<td>173,441</td>
<td>172,840</td>
<td>169,440</td>
<td>168,721</td>
</tr>
<tr>
<td>ARMY</td>
<td>285,246</td>
<td>280,690</td>
<td>275,754</td>
<td>264,902</td>
<td>261,345</td>
</tr>
<tr>
<td>NAVY</td>
<td>198,750</td>
<td>200,761</td>
<td>198,518</td>
<td>194,801</td>
<td>192,673</td>
</tr>
<tr>
<td>TOTAL</td>
<td>657,665</td>
<td>654,892</td>
<td>647,112</td>
<td>629,143</td>
<td>622,739</td>
</tr>
</tbody>
</table>


All of the military services in Table 2 managed the budget cuts differently in regards to applying those cuts to the workforce. The Army has the largest number of civilian personnel to support its mission and as a result they proportionally had a larger reduction within the civilian workforce.

In the time frame represented in Table 2, the Army reduced its civilian workforce by 23,901 individuals which represented an 8 percent decrease. The Air Force and Navy were able to apply the budgets cuts required by sequestration and only lose approximately 3 percent of the civilian workforce. The civilian workforce cuts for the Air Force and Navy may seem minor in comparison to the Army, but any significant cuts to a workforce within a timeframe of a year will cause lasting effects on the human capital of an organization. Between December 2012 and
December of 2013, the military services had to quickly reduce their workforce and the timeframe in which it happened is as significant as the drop in the total workforce.

When examining Table 1 and Table 2, it is hard to ignore the impact. The number of people who make up the civilian and military workforce within the DOD dropped quickly in a short time frame, but the numbers do not represent the non-quantitative data driven impact to morale that is associated with altering human capital in the same manner that occurred in 2013. The stress placed upon the personnel during this time cannot be quantified, but it has to be taken into consideration as a cost that civilian and military workforce had to bear as the unknown future of the budget was decided outside of their control. Many of the civilian workforce were furloughed for six days in 2013 in efforts to reduce the $11 billion deficit that the DOD was facing as a result of sequestration and had a direct impact on readiness of the military as most civilians were forced to remain home on a normal duty day.21

As the numbers indicate, over 30,000 positions were removed to meet the budget demands of sequestration and the individuals left remaining were forced to complete their organizations missions as effectively as possible. The DOD absorbed a 5 percent reduction in positions in 2013, but the next section of this case study will examine how the DOD has recovered since 2013 with the budget relief granted by the Bipartisan Budget Act of 2013.

QUANTITATIVE ANALYSIS & DISCUSSION ON WORKFORCE RECRUITMENT

As in the previous section, the data displayed and analyzed was obtained from DMDC. The Bipartisan Budget Acts of 2013 and 2015 granted relief to the DOD from the severity of the budget cuts, so it is expected that the civilian and active duty workforce should recover from the
cuts. By examining the most recent data available from DMDC if the trend of cuts in personnel continued after 2013 or if recruitment of additional individuals occurred

Quantitative Analysis

A significant portion of the workforce reductions due to sequestration in 2013 lagged into the first half of CY 2014. As shown in Table 3, the total number within the civilian and active duty workforce continued to drop until June 2014.

Table 3. Total DOD Civilian and Active Duty (March 2014 to March 2015)

<table>
<thead>
<tr>
<th></th>
<th>Mar-14</th>
<th>Jun-14</th>
<th>Dec-14</th>
<th>Mar-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOD CIVILIANS</td>
<td>717,976</td>
<td>716,556</td>
<td>725,933</td>
<td>725,395</td>
</tr>
<tr>
<td>ACTIVE DUTY</td>
<td>1,366,194</td>
<td>1,357,218</td>
<td>1,321,731</td>
<td>1,317,317</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,084,170</td>
<td>2,073,774</td>
<td>2,047,664</td>
<td>2,042,712</td>
</tr>
</tbody>
</table>


When comparing the total for June 2014 to the initial numbers display for December of 2011, the total DOD civilian and active duty workforce has experienced a drop of 5 percent in two and a half years. Even though civilian numbers have increased slightly since June 2014, the active duty end strength has continued to decrease in a large part to the Army’s effort to cut approximately 40,000 soldiers to reach a 450,000 end strength. The services have seen a drop in end strength since 2013 that contributes to the total active duty numbers decreasing in Table-3, but the Army has seen a 16 percent drop in military end strength or approximately 90,000 members since December 2011. This trend is likely to continue as the Army currently has
25,000 active duty members to reduce until the reach the intended goal end strength of 450,000.24

As mentioned previously, the DOD civilian workforce numbers continued to drop into CY 2014 and as of June 2014 the civilian workforce absorbed a 6 percent reduction when compared to the workforce in December 2011. As expected, the DOD was able to recruit additional employees, and as of March 2015, the civilian workforce was able to recover employees to totals similar to the end of CY 2013. The numbers have not recovered to levels that were consistent prior to sequestration, but the increase indicates a trend in DOD civilian workforce recruitment to fill needed positions within the DOD. The information in Table-4 breaks out how the DOD civilian workforce has changed since December 2013 within each of the services.

Table 4. Total DOD Civilian by military service (March 2014 to March 2015)

<table>
<thead>
<tr>
<th></th>
<th>Mar-14</th>
<th>Jun-14</th>
<th>Dec-14</th>
<th>Mar-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR FORCE</td>
<td>167,187</td>
<td>169,470</td>
<td>169,237</td>
<td>169,598</td>
</tr>
<tr>
<td>ARMY</td>
<td>259,195</td>
<td>257,792</td>
<td>258,879</td>
<td>256,927</td>
</tr>
<tr>
<td>NAVY</td>
<td>191,669</td>
<td>192,613</td>
<td>194,088</td>
<td>194,988</td>
</tr>
<tr>
<td>TOTAL</td>
<td>618,051</td>
<td>619,875</td>
<td>622,204</td>
<td>621,513</td>
</tr>
</tbody>
</table>


As can be seen in Table 4, the Army reduction within its workforce is also applicable to the civilian manpower and the decreased in employees continues into March 2015. The Army is expected to continue to reduce the civilian workforce as the active duty force phases its reduction into FY 2018, and the total civilian reduction will be approximately 17,000 employees.25 The situation as described that the Army is currently facing is different than that of the Air Force and
Navy, so the continued decreased in civilian workforce represents an unexpected outcome in the analysis that can be explained with outside data. Since budget relief was provided in 2013, the Air Force and Navy have added additional individuals to the civilian workforce. As of March 2015, the Air Force has recovered approximately 60 percent of the positions that were removed since December 2011, and the Navy has recovered 47 percent. It is evident that the services place importance on human capital as they try to recruit new individuals to fill existing needs created by sequestration, but I do not see the benefit of hastily removing years of experience from the workforce due to sequestration to hire new employees once the situation changes.

The data also supports the claims from individuals who support sequestration as a mechanism to force the DOD to cut waste and reduce the workforce to more realistic levels. The workforce was reduced by significant amounts, but there was little to no reports of mission failure within the DOD due to an inadequate number of people to complete the work. The DOD could have easily maintained higher levels of employment in the event budgets were not reduced, so the possibility exists that sequestration in fact did cause a needed workforce reduction.

When budget reductions occur often the method of reducing spending results in a reduction of the workforce which reduced human capital. Smarter processes have to be developed to mitigate the impacts of severe budget cuts as repeated cuts to the human capital of the DOD are beginning to have consequences in the way the DOD operates. A GAO report suggests that there are potential critical skill gaps that exist within the DOD that pose a high risk to the mission of federal and DOD agencies. If a threat exists in how the federal government is managing the workforce, the DOD has to examine how budget cuts are applied and how it effects human capital. Experience is a necessity to lessen the risk associated with critical skill
gaps, but the military services chose in situations similar to that at Robins AFB, GA to remove years of experience from the workforce. The key word in the GAO assessment is strategic; the DOD has to take a strategic look at how budget cuts effect human capital in terms of recruiting and educating the workforce. More discussion on this will be presented later is the case study when trend analysis is used to estimate the future state of DOD human capital.

**QUANTITATIVE ANALYSIS & DISCUSSION ON EDUCATION FUNDING**

In order to meet the requirements of title 10 U.S.C. section 228 and the Department of Defense Appropriations Bill, 2015 (H. R. 113-473), the Under Secretary of Defense Comptroller must submit a quarterly report to Congress detailing the allocation of funds within the operation and maintenance budget. The 4th quarter of each report details how much funding was obligated to support mission requirements for the year, but more importantly to this research the report shows funding used to support education and training. The data is divided into certain important mission areas to include professional development education, civilian education and training, and specialized skill training. The data is derived from the financial systems of each of the individual services and is provided to the committees within Congress that interact with the DOD.

This analysis shows how the DOD is growing the knowledge base of the human capital that makes up the workforce. By examining the funding that has been allocated in support of education and training prior to sequestration and comparing to funding levels after 2013, the intent is to determine if funding has return to appropriate levels once the Bipartisan Budget Acts provided necessary budget relief. I will examine total funding allocated for education and training per year for each of the services and analyze the funding in the mission areas of professional development education and civilian education and training.
Quantitative Analysis

The analysis presented in this section will examine how much funding has been obligated or utilized to educate and train the workforce before, during, and after sequestration. Table 5 presents the amount of funding obligated per year for education and training for each of the Army, Navy, and Air Force from 2012 to 2015 as it is presented in the quarterly report provided to Congress from the Under Secretary of Defense Comptroller.

Table 5. Total education and training obligations by military service (FY 2012 – FY 2015)

<table>
<thead>
<tr>
<th>* in thousands</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>$4,893,955</td>
<td>$4,541,327</td>
<td>$4,573,918</td>
<td>$4,448,441</td>
</tr>
<tr>
<td>Navy</td>
<td>$1,837,135</td>
<td>$1,613,420</td>
<td>$1,793,718</td>
<td>$1,779,292</td>
</tr>
<tr>
<td>Air Force</td>
<td>$3,767,554</td>
<td>$3,465,050</td>
<td>$3,536,412</td>
<td>$3,384,756</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$10,498,644</td>
<td>$9,619,797</td>
<td>$9,904,048</td>
<td>$9,612,489</td>
</tr>
</tbody>
</table>


As shown in Table 5, there has been a significant drop in funding utilized to educate and train the workforce since sequestration occurred in 2013. Within 2013, the amount of funding obligated for education and training was reduced by 8.37%, which is greater than the approximate 5 percent drop that occurred in workforce numbers during the similar timeframe. One would assume that the amount of funding allocated to education and training would fluctuate the amount of individuals needing training changed, but the funding for education has decreased at a larger percentage than the workforce from 2012 to 2015. When the two percentages are compared, the analysis indicated that the DOD is not only educating fewer people in the workforce, but with less spending the individuals remaining potentially have less opportunity for
education than prior to sequestration. Less funding is being used to support education and training throughout the DOD, but in relation to other budget areas, is the decrease in funding consistent.

The data in Table 6 shows that the decrease in funding used for operations, mobilization, administrative support, and training for the Air Force has remained fairly consistent when broken out by percentage.

Table 6. Percentage comparison of O&M funding used by Air Force (2012 vs. 2015)

<table>
<thead>
<tr>
<th>* in thousands</th>
<th>2012</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Obligations</td>
<td>$48,164,238</td>
<td>$45,781,959</td>
</tr>
<tr>
<td>Operations</td>
<td>56.10%</td>
<td>57.83%</td>
</tr>
<tr>
<td>Mobilization</td>
<td>18.03%</td>
<td>17.93%</td>
</tr>
<tr>
<td>Admin</td>
<td>15.42%</td>
<td>16.85%</td>
</tr>
<tr>
<td>Training</td>
<td>7.82%</td>
<td>7.39%</td>
</tr>
</tbody>
</table>


The O&M budget for the Air Force has reduced from 2012 to 2015, but the funding allocated to each of the four areas shown in Table 6 has been fairly consistent once the budget cuts were applied. The percentages show a minor increase to operations and administrative support, but it appears that the budget cuts within the Air Force have been applied consistently throughout the four budget areas presented. Even if the effects of the budget sequestration has had negative consequences on the amount of training individuals receive, the analysis shows that the impacts have been evenly disbursed. The impacts may be consistent in other budget areas, but it is important to analysis which areas of education and training were effected the most so future budget cuts may be applied differently.
The two subcategories most impacted by sequestration were professional development and civilian education, and the next portion of analysis will highlight those impacts for each of the services. As shown in Table 7, there was a 13.59% decrease in funding used for professional development from 2012 to 2013 directly due to sequestration.

Table 7. Total professional development obligations by military service (2012 to 2015)

<table>
<thead>
<tr>
<th>* in thousands</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>$190,254</td>
<td>$156,073</td>
<td>$165,208</td>
<td>$171,503</td>
</tr>
<tr>
<td>Navy</td>
<td>$183,815</td>
<td>$152,156</td>
<td>$165,767</td>
<td>$164,911</td>
</tr>
<tr>
<td>Air Force</td>
<td>$202,888</td>
<td>$190,291</td>
<td>$192,771</td>
<td>$212,708</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$576,957</td>
<td>$498,520</td>
<td>$523,746</td>
<td>$549,122</td>
</tr>
</tbody>
</table>


All of the services have increased funding used for professional development since 2013, but the Army and Navy are both approximately 10 percent below funding levels prior to 2013. The Air Force only absorbed a 6 percent cut to professional development funding in 2013 and in 2015 utilized funding at levels higher than in 2012 for professional development. It is unclear why there is such a discrepancy among the services in the amounts of funding utilized for professional development, but the Army and Navy are clearly at a disadvantage compared to amounts utilized prior to sequestration.

As shown in Table 8, the severity of the funding cuts to civilian education is similar to what was encountered within professional development.
From 2012 to 2013, the military services faced 17 percent decrease in funding utilized to develop the civilian workforce and in 2015 there was still a 12.5% decrease in relation to funding levels in 2012. The Navy was impacted the most by sequestration in terms of civilian education funding, and in 2015 the Navy civilian workforce had approximately 22 percent less funding utilized for development. The cuts to civilian education funding in some instances is two to three times higher than the rate in which the civilian workforce was reduced due to sequestration, so the workforce reduction does not appear to be the direct driver of the civilian education funding reduction. Other areas, such as training support and flight training are part of the education and training budget, and research should be completed to determine if these budget accounts could absorb additional budget reductions rather than decreasing funding for civilian education.

Proponents of sequestration who believe that sequestration is a positive thing for influencing needed change in DOD processes, can examine this information and champion that cause by stating that the DOD is finding efficiency savings within training. Sequestration has forced the DOD to implement programs, such as Financial Improvement and Audit Readiness (FIAR), to strengthen our processes and insure we are being stewards of taxpayer resources.30

Table 8. Total civilian education obligations by military service (2012 to 2015)

<table>
<thead>
<tr>
<th>* in thousands</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>$161,880</td>
<td>$136,512</td>
<td>$132,181</td>
<td>$143,807</td>
</tr>
<tr>
<td>Navy</td>
<td>$74,064</td>
<td>$59,463</td>
<td>$53,545</td>
<td>$57,788</td>
</tr>
<tr>
<td>Air Force</td>
<td>$177,552</td>
<td>$146,921</td>
<td>$152,744</td>
<td>$159,974</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$413,496</td>
<td>$342,896</td>
<td>$338,470</td>
<td>$361,569</td>
</tr>
</tbody>
</table>

Reductions in training could signal that the DOD is making better decisions on determining what the best training is and how to more effectively deliver the training to the proper individuals. I would argue that training will be provided to the amount that is allocated, but if more funding is available the DOD would have a better equipped workforce. The GAO has identified that the workforce needs certain skills, so more funding would allow for individuals to develop those skills. There are instances where sequestration has forced much needed changes in how the DOD operates and FIAR is one, but more research has to be done to analyze the lasting effects of sudden budget cuts.

Professional development and civilian education absorbed a large portion of the funding cuts associated to the education and training budget, but both of these areas relate to the long term educational growth of the workforce that support the mission of the DOD. As mentioned previously, the GAO has determined that there is significant deficiencies within the strategic human capital of the DOD, but the DOD decided to degrade the budgets that support the growth of human capital. The Air Force has recovered from the budget cuts in regards to professional development, but in all other instances, the military services have failed to reinvest in the long-term growth of the workforce in terms of education. In the event that sequestration returns in 2018, the DOD risks having a workforce not trained effectively to meet the critical skills. The DOD has to make the necessary changes now to prepare for the potential of sequestration level budgets returning in 2018 since the human capital of the DOD cannot absorb repeated cuts to long-term educational growth. The analysis of education and training funding indicates that there was a significant reduction in funding due to sequestration, but the reduction was fair in comparison to other O&M budget accounts. The DOD has to examine how budget cuts were
applied to these education and training accounts since the areas that were effected the most directly linked to the long term development of the workforce.

**APPLYING TRENDS INTO FUTURE**

The DOD and public is aware of the severe consequences that have occurred due to sequestration, but the research presented in previous section outlines the impacts in regards to human capital. The analysis in this section will show the potential impacts of allowing the same method for applying budget cuts will have on the workforce and education. It is important to understand the impacts of what has already occurred, but by analyzing what may happen in the future if sequestration returns in 2018 will hopefully stress the importance to apply budget cuts in other ways.

Assumptions will need to be made in order to apply the past trends to what may happen if sequestration returns in the future. The first assumption that must be made is that current growth and recovery since 2013 within workforce recruitment and education funding will remain at the constant rate until 2018. This assumption is necessary to determine what the future state will be in 2018 and what the impacts will be if budget cuts return. The next assumption that needs to be made is that the Army will continue to reduce the workforce by 17,000 civilians and a military end strength of 450,000. This assumption is necessary because the Army will not have workforce growth between 2015 and 2017 and that will be different than what is predicted for the Navy and Air Force.

**Quantitative Analysis**

The civilian workforce for the Navy and Air Force is currently growing at .46% and .21% respectively, see Table 8.
Table 9. Expected civilian workforce numbers by military service (2015 to 2018)

<table>
<thead>
<tr>
<th></th>
<th>2015 (Actual)</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR FORCE</td>
<td>169,598</td>
<td>169,954</td>
<td>170,311</td>
<td>166,956</td>
</tr>
<tr>
<td>ARMY</td>
<td>256,927</td>
<td>255,000</td>
<td>253,088</td>
<td>251,189</td>
</tr>
<tr>
<td>NAVY</td>
<td>194,988</td>
<td>195,885</td>
<td>196,786</td>
<td>193,106</td>
</tr>
<tr>
<td>TOTAL</td>
<td>621,513</td>
<td>620,839</td>
<td>620,185</td>
<td>611,251</td>
</tr>
</tbody>
</table>


During 2013, the Navy reduced the civilian workforce by approximately 1.97% and if this trend continues in 2018 the Navy risks losing an additional 3,680 positions if sequestration returns. During 2013, the Air Force reduced the civilian workforce by approximately 1.87% and if this trend the Air Force risks losing an additional 3,355 positions. When the amount of positions reduced in the Navy and Air Force are combined with the reduction of the Army, the civilian workforce risks being reduced to 611,251. This highlights the concerns associated with repeated cuts to a workforce in a short period of time, as the workforce has not yet had a chance to recover from 2013. The numbers in 2018 have the potential to be 6,800 employment positions lower than what was reported directly after sequestration in 2013.

The predicted civilian workforce numbers in 2018 for the Air Force and Navy are similar to what was reported during sequestration in 2013, but the total for all the military services is significantly lower due to the continued cuts by the Army. The issue for the Navy and Air Force is the amount of experience that could again leave the workforce if early retirement incentives are used to reduce the workforce in 2018. When early retirement incentives are combined with the increased rate of retirements of the baby boomer generation from the workforce, there is potential for an experience gap within the workforce. At first glance the estimated workforce
numbers for the Navy and Air Force in 2018 are not significantly different than 2013, but the aggregate amount of departures in a short term period of five year could pose a risk to critical skillsets within the DOD. Since the GAO established a report highlighting the potential risk in the DOD’s strategic human capital a different plan to absorb budget cuts has to be developed, but those risks are higher when the diminishing education funding is considered in the discussion.

With the major concerns highlighted in this section existing within the civilian workforce in 2018 if sequestration returns, the civilian education budget needs to be estimated and compared during the same timeframe. Table 10 uses the rate of change in the civilian education obligations from the data presented in Table 8 in order to estimate future utilization rates.

Table 10. Estimated civilian education obligations by military service (2015 to 2018)

<table>
<thead>
<tr>
<th>* in thousands</th>
<th>2015 (Actual)</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>$143,807</td>
<td>$147,455</td>
<td>$151,195</td>
<td>$127,501</td>
</tr>
<tr>
<td>Navy</td>
<td>$57,788</td>
<td>$59,910</td>
<td>$62,109</td>
<td>$49,865</td>
</tr>
<tr>
<td>Air Force</td>
<td>$159,974</td>
<td>$166,501</td>
<td>$173,293</td>
<td>$143,397</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$361,569</td>
<td>$373,865</td>
<td>$386,597</td>
<td>$320,763</td>
</tr>
</tbody>
</table>


A similar scenario exists in the estimated civilian education budget as it does in the estimated civilian workforce during the same period, as both have not had sufficient time to recover from reductions in 2013. All of the services on show a trend of growth that can continue in 2016 and 2017, but if the severe cuts return in 2018 the budgets have the potential to be reduced to levels lower than post sequestration. If past trends remain true, there could be a 22.43% drop in funding available for civilian education in a 6 year period. Presumably this would be a time when civilian education budgets should see a significant growth as new employees are being
replacing as employment separations increase. An example of the increase in separations is the approximate 25 percent increase in civilian separations within the Air Force from March 2014 to March 2015.\textsuperscript{34} The separation rate adds to the complexity of the issue of educating the civilian workforce since an adequate budget is necessary to train new positions and the turnover that exists within the services. Interestingly the Army may be in a better position in the event budget cuts return in 2018, since the budget reduction in civilian education coincides with a reduction in the civilian workforce. The services will be forced to decide on what the basic educational and training requirements are and limit or even cancel many of the developmental educational programs to the civilian workforce.

\textbf{RECOMMENDATIONS AND CONCLUSION}

The workforce in each of the services has decreased to levels prior to 2010 in a time where the threats are more diverse and when the DOD needs more critical skillsets to effectively complete the mission.\textsuperscript{35} In the event that sequestration returns in 2018 the growth within employment will reverse if the DOD utilizes the same method for absorbing budgets cuts as in 2013. Each of the services must think critically and examine where cost saving or avoidance can be achieved, so that there is not an additional significant loss of experience due to early retirements and personnel cuts due to budget shortfalls. In 2015 the Army Navy, and Air Force obligated $16.14 billion in funding for base operating support to operate forces and a portion of this could have offset what is necessary to maintain the civilian workforce, but research and analysis can identify where funding can be moved to match priorities.\textsuperscript{36} Furloughs of civilian employees were used during sequestration in order to meet the budget requirements in 2013, but if the method was used to produce more cost savings then positions could have possibly been retained. There are different reports on how much cost savings was realized due to the 6
furlough days in 2013, but the estimate is around one billion in civilian pay savings.\textsuperscript{37} If additional furlough days were enforced, additional cost savings could be realized, which could save potential positions in the civilian workforce. There is potential political, social, and employee satisfaction implications that result from additional furlough days, but if the goal is to retain education and experience within the workforce additional furlough days provide that option. By providing incentives for individuals to retire or separate from the workforce early provides cost savings, but the DOD has to determine if those cost savings is worth losing experience within the workforce. In 2013 early retirement and separation incentives may have been the best answer when combined with limited furloughs, but the DOD risks losing experience in critical skill sets if a similar method is applied in the event sequestration returns in the future. More research has to be done to determine the right mix of early retirements and furloughs to meet the experience demand needed to effectively complete the mission.

As highlighted in the research, civilian education funding has dramatically declined since sequestration in 2013 and immediate changes need to be made to insure the civilian workforce is properly developed. Within the education and training budget account specialized skill training and flight training is allocated a large portion of the funding, but this is reasonable based on the nature of the training provided.\textsuperscript{38} In recent years, reprogramming actions have added additional funding to these budget accounts, while civilian education has remained the same or even reduced.\textsuperscript{39} For example, by transitioning 1 percent of the Air Force flight training budget to civilian education, civilian education could grow by 6 percent. The DOD has to research ways of funding civilian education at higher levels now prior to the possibility of sequestration level budgets returning in the future since the budgets are currently low and will decrease even further. The civilian workforce is crucial in filling those critical skillsets necessary to complete the
mission and more funding has to be allocated to allow for the professional growth of these individuals.

It is hard to argue the effects that sequestration had in 2013 and the continued impacts the legislation has had on budgets within the DOD. There is a possibility that lower budget levels may return in 2018 when the Bipartisan Act of 2015 no longer provides budget relief and the DOD has to examine the long term implications for the budget actions that occurred in 2013 and since. With the reduction in the DOD workforce in 2013 and the diminished budgets for education and training, the DOD has the potential risk of not having the proper experience in critical skillset positions.

A plan must be established to provide little impact to the civilian workforce by limiting another round of early separations and retirements since another significant departure of experience from the workforce could cause issues. The research also showed that the education and training budget has diminished, but the cuts were fairly evenly distributed among the different operations and maintenance budget accounts. The education and training budget did significantly reduce the civilian education portion and it has not recovered properly as of 2015. The DOD has to allocate more funding to civilian education now from other accounts, so more education can take place prior to 2018. Through a stronger effort to educate and train our civilians now, the intent is the workforce will be better equipped if budget cuts happen in 2018 and less funding is available for this purpose.

Too often the DOD becomes stove-piped in their individual areas and are concerned with what immediate threats their program of responsibility is facing, but this intent of this research was to look at the total impact to human capital. With a reduction in the workforce to save
funding and less funding allocated to educate and train the people, there is a true risk associated with having the correct amount of properly trained individuals. If a workforce reduction is needed, there are better methods to achieve the end result than a quick decision to reduce the workforce to achieve a specific budget amount. Often the end result is not important if the path taken to get to that point is not considered, and in regards to the workforce and sequestration the method to get to a specific dollar amount of savings the DOD loss needed workforce experience. By highlighting the effects sequestration has had on the workforce through different program reductions, hopefully plans can be developed now to reduce the risk to human capital in 2018.
NOTES

3 Adam Smith, Economic Consequences of Defense Sequestration, 2011.
5 Ibid. Title IV.
24 Ibid.
25 Michelle Tan, Army Times, 2015.
28 Quarterly reports on allocation of funds within operations and maintenance, 10 U.S.C. § 228.
32 Ibid.
33 Michelle Tan, Army Times, 2015.
34 Defense Manpower Data Center, “DoD Data/Reports,” “Statistics & Reports.”
35 Ibid.
39 Ibid.
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