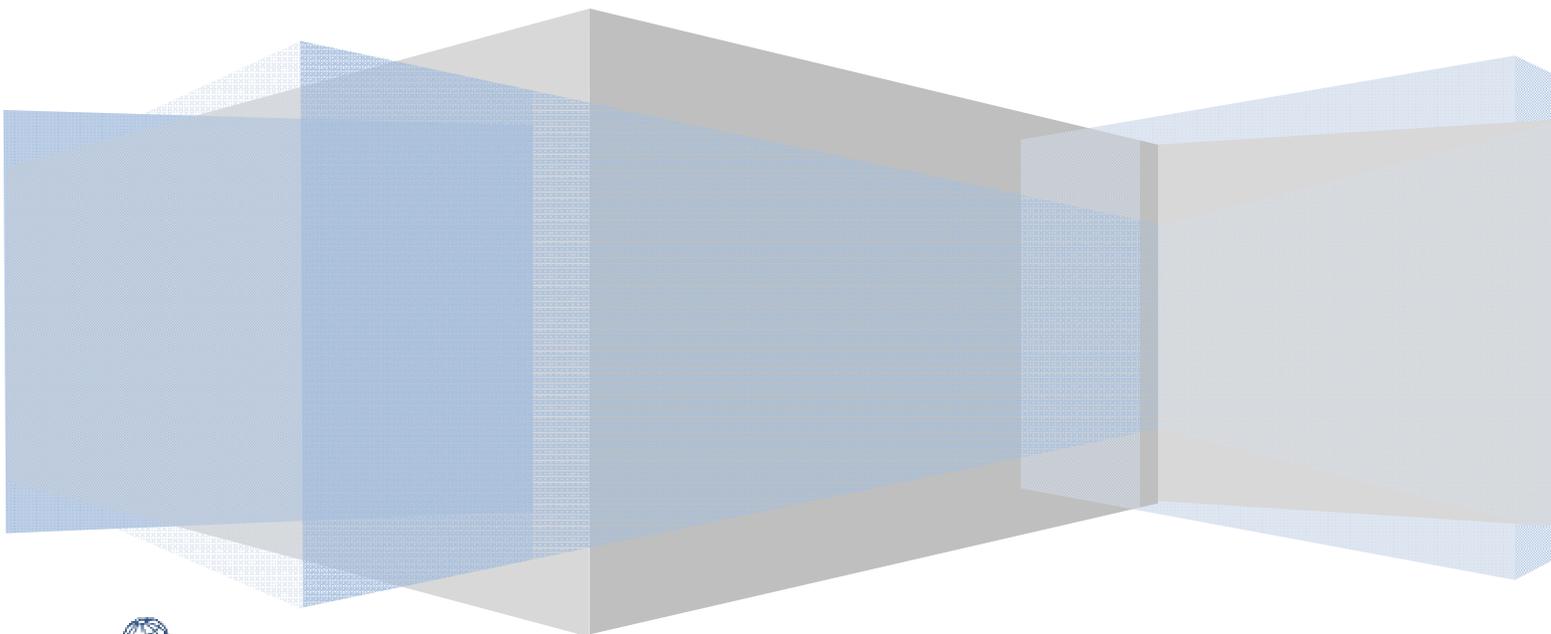# Impact of the Economy

A Local Area Study in the Dallas-Fort Worth Region
The Research Committee of the Dallas Chapter of the IIA

Impact of the Economy- A local area study in the DFW region

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Introduction

The global economic crisis of 2008 has been rightly called one of the five events that defined the decade for the Internal Auditors[1]. The IIA's GAIN Knowledge Alert[2] report highlights some of the key observations, including:

- The economic recession has impacted not only organizations, but their respective internal audit activities as well

- Internal audit activities are transitioning risks that received extensive focus in recent years and concentrating more on emerging risks that resulted from the changing economic conditions

While the topic of the economy has been the core of discussions and debates recently on a wider basis, this research project focuses on the following specific aspects:

- *Very little data is available specific to our local practice area- DFW region*. A vast majority of the existing research studies focuses on the national and international level which includes economic regions that are experiencing a wider span of economic activities. For example- the respondents come from BRIC countries that are showing a positive economic growth and also from "developed" countries that are showing negative or marginal economic growth. On a national level, vast majority of the studies includes areas that are heavily impacted, such as Detroit or California and the areas that are less impacted such as Texas. The current research project focuses on assessing the impact of the economic crisis at the local area level.

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[1] http://www.theiia.org/blogs/chambers/index.cfm/post/Five%20Events%20That%20Defined%20the%20Decade%20for%20Internal%20Auditors

[2] Knowledge Alert - The Financial Crisis and Its Impact on the Internal Audit Profession- March 2009

- *Identification of the perception difference by level, industry type or organization size-* The different levels of personnel (management versus staff), industry (private sector versus government) and organization size (small/local versus large/international) are expected to have a difference in risk perception and approaches adopted.

  The current research project focuses on assessing the perception difference among various respondent groups.

- *Approaches adopted by companies in the DFW area to manage the economic downturn-* The DFW area possesses the unique distinction of having a wide diversity of industries and sizes of organizations, which provides a better opportunity for the topic at hand. For example - In comparison to New York (Financial Center), Los Angeles (Entertainment) or Houston (Energy/Oil & Gas), DFW area has a fairly representative mix of companies from all industries.

- *Pattern of internal audit resources used –* The use of resources, both internal audit and non-internal audit are expected to show a lag with the economic cycles[3]. The current research project will focus on assessing the lag pattern between three key indicators: The economy of the local area (measured by job loss/ growth statistics), the overall organization's budget and head count and the internal audit department's budget and head-count.

Impact of the Economy on Business

The current economic crisis has impacted businesses of all sizes and in all industries. If a business has been lucky enough to not be impacted monetarily, their consideration of risks and future implications of the economy have been impacted. The degree of impact does vary by business and is dependent upon many factors such as the length and severity of the recession, the size and structure of the business and how well prepared/positioned the business is to cope with a recession.

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[3] http://www.pbs.org/newshour/bb/business/july-dec09/economy_10-29.html

Specifically, the Dallas Fort Worth Metropolitan area is home to businesses across many industries. As of 2009, twenty-five Fortune 500 Companies have headquarters in the Dallas-Forth Worth Metropolitan area, which ranks it second in the U.S. metropolitan areas generating revenue from Fortune 500 Companies[4].

There are several expected impacts on businesses during a recession. First, revenue and profits decline. In an effort to curb declining profits, cost cutting measures are taken. Some examples of cost cutting steps include reductions in headcount (which can be seen in the unemployment rate below), production, advertising, and inventory. The measures taken by any single company then impact additional businesses further down the chain (i.e.: marketing firms, suppliers, etc).

Other than headcount reductions obtained via the unemployment rate, company/industry and region specific data regarding cost cutting measures is not readily available. Specifically for the Dallas-Fort Worth-Arlington Metropolitan area in 2009, unemployment increased by approximately 4 percent and as of January 2010 was approximately 8.7 percent. Even with the increase in the unemployment rate, the Dallas-Fort Worth-Arlington Metropolitan area has remained below the national average since the start of the recession[5].

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[4] http://www.dallaschamber.org/files/Fortune500.pdf
[5] http://www.bls.gov/web/laulrgma.htm

Economic Indicators

In order to help business's navigate the changing economic, different economic indicators are available to pinpoint where a business may stand in a particular economic cycle. The term business cycle (or economic cycle) refers to economy-wide fluctuations in production or economic activity over several months or years. These fluctuations occur around a long-term growth trend, and typically involve shifts over time between periods of relatively rapid economic growth (expansion or boom), and periods of relative stagnation or decline (contraction or recession)[6] . Some examples of economic indicators include; the unemployment level which is the number of unemployed as a percentage of the total population of working age[7], the Gross Domestic Product (GDP) which is the total market value of all final goods and services produced in a country in a given[8], and the inflation level which refers to the overall general upward price movement of goods and services in an economy[9].

In order to help us determine how the local DFW region was performing economically relative to the national economy, economic indicators that could help achieve a better understanding of the health were researched. The research committee chose Department of Labor (DOL) statistics as a mechanism to help achieve this goal by identifying and then analyzing pertinent economic indicators. The DOL statistics were

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[6] O'Sullivan, Arthur; Steven M. Sheffrin (2003). Economics: Principles in action http://www.pearsonschool.com/index.cfm?locator=PSZ3R9&PMDbSiteId=2781&PMDbSolutionId=6724& PMDbCategoryId=&PMDbProgramId=12881&level=4> . Upper Saddle River, New Jersey 07458: Pearson Prentice Hall. pp. 57,310. ISBN
[7] http://www.investorwords.com/5145/unemployment_rate.html
[8] http://www.investorwords.com/2153/GDP.html
[9] http://www.investorwords.com/2452/inflation.html

chosen because of they were industry neutral, so therefore any data that is used should be free of any potential bias.

Project Plan

The project was initiated in September 2009, when the committee brainstormed a number of potential topics and selected the current topic for presenting to the IIA- Dallas Chapter's Board of Governors for approval. See the timeline in the chart below for details.
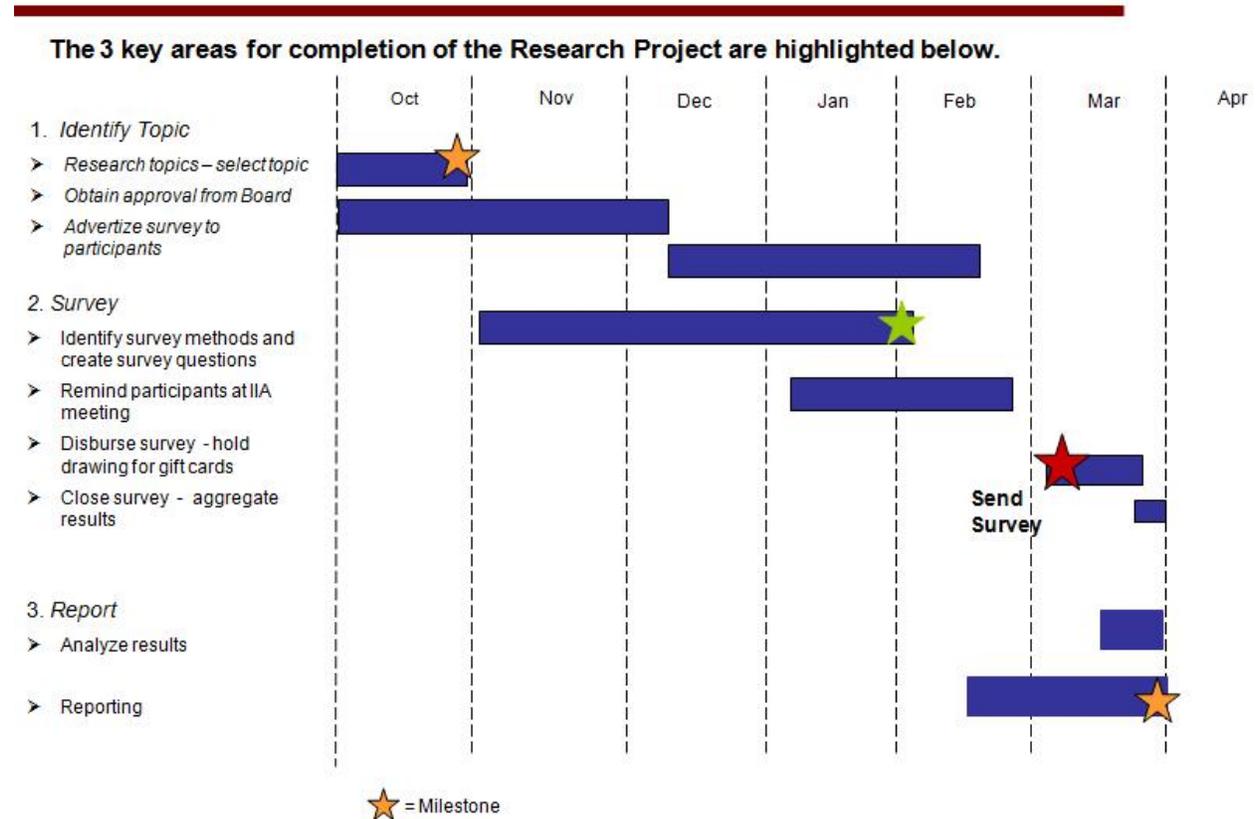

Exhibit 1. IIA Research Project Timeline

Survey Design

To achieve the objectives of the study, the committee identified three sets of participants as follows:

1. Internal Audit Staff

2. Internal Audit Management Personnel

3. Non-Internal Audit Management Personnel

The committee requested that the Chief Audit Executives (CAEs) from the DFW area provide names of survey respondents from their respective organization with at least one person from each of the above categories to take the online survey.

Survey Structure

The survey was composed of the following parts:

- Part I: Personal information and the respondent's organization-related questions

- Part II: Extent of internal audit practices adopted (intended for Internal auditors only)

- Part III: Historical head-count and budget details of the internal audit department and the organization (all participants).

The respondents were required to respond to all the questions under Part I and Part II. Due to the detailed extent of data requested under Part III, the respondents were not required to answer all the questions. Under Part III, the pattern of employment level changes was displayed as shown below and respondents were asked to complete the data input matrix.
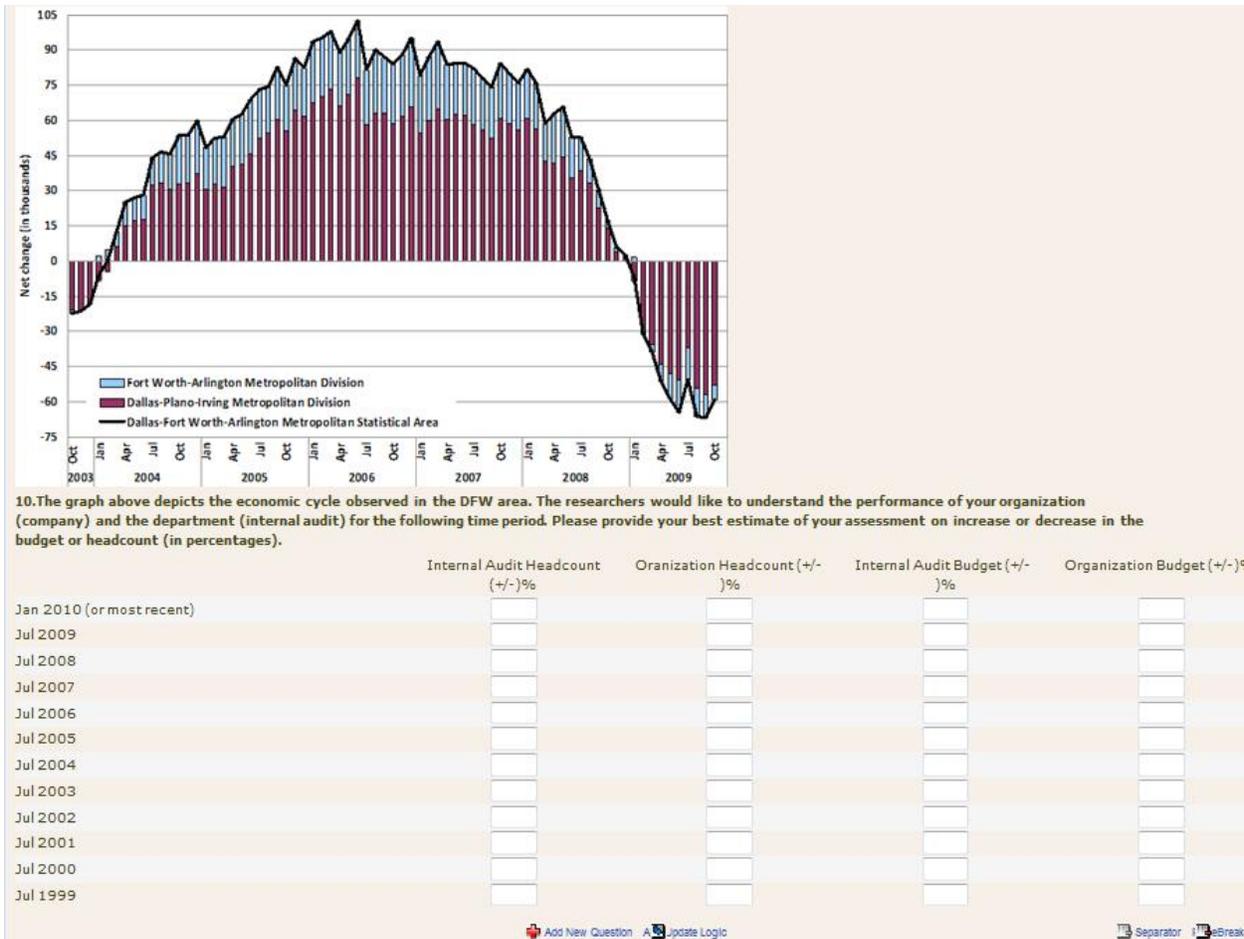
Exhibit 2. Screenshot of the question in part III of the survey

Participants' Profile

The research committee solicited practitioner members in the Dallas and Ft. Worth area. Gift debit cards for a drawing were offered to increase participation. We communicated our invitation to participate via member announcements during monthly luncheons, as well as email and organizational newsletters, beginning in January 2010.

In the survey, we first asked the respondents to classify themselves by identifying their internal audit experience. While a majority of the respondents were experienced internal auditors or had prior internal audit experience, we had a wide mixture of participants. Exhibit 3 below depicts the experience levels. Those who classified as

"None" were primarily from other functional areas within business organizations, such as finance and corporate accounting, purchasing and information technologies.

Respondents by Experience Category

- Very experienced (more than 15 years/ Internal Audit Director)

- Moderately experienced (more than 8 years but less than 15 years/ Internal Audit Manager or Supervisor)

- Experienced (more than 2 years but less than 8 years/ Senior Auditor)

- Staff (less than 2 years of experience)

- None (no experience or worked previously in internal audit or related function)

11%
7%
20%
35%
27%

Exhibit 3. Experience in Internal Audit

Job levels of respondents also varied, with the majority of participants either manager or supervisor levels. These are depicted in Exhibit 4.

Respondents by Job Level

- Internal Audit Executive (Chief Audit Executive/Vice President/Director)
- Internal Audit Manager (Manager/Supervisor)
- Internal Audit Senior/Staff
- Other

5%

37%

43%

15%
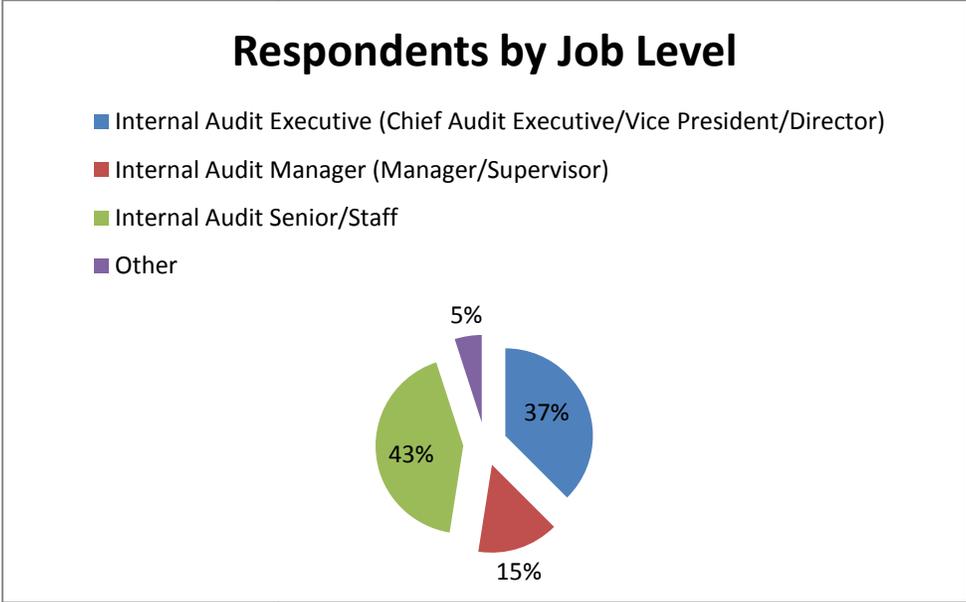
Exhibit 4. Respondents by Job Level

Exhibit 5 depicts the variety of organizational sizes for our respondents. The majority of our respondents are employed by mid-sized and large organizations, with 86% reporting that their organization employs more than 1,000 and 42% working for organizations employing greater than 5,000 people.

Organization Size - Number of Employees

■ 1 to 50   ■ 51 to 500   ■ 501 to 1,000
■ 1,001 to 5,000   ■ 5,001 to 50,000   ■ More than 50,000

0% 2%
9%
22%
20%
47%
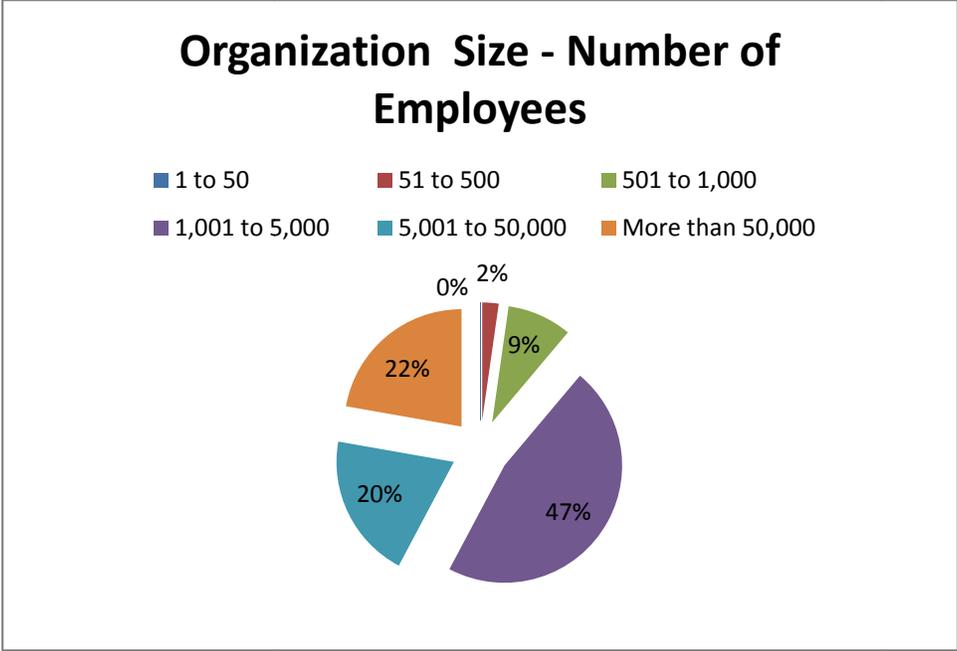
Exhibit 5. Respondents by Size of the Organization

The respondents were from all industry segments with the exception of construction and Leisure & Hospitality industry, with a majority of the respondents from the education and health services.

Industry	Number	Percentage
a. Construction	0	0.00%
b. Education & Health Services	13	28.89%
c. Government	2	4.44%
d. Information Services	1	2.22%
e. Leisure & Hospitality	0	0.00%
f. Manufacturing	3	6.67%
g. Natural Resources & Mining	1	2.22%
h. Financial Activities	3	6.67%
i. Professional & Business Services	1	2.22%
j. Transportation & Utilities	5	11.11%
k. Wholesale & Trade	4	8.89%
l. Other	12	26.67%

Exhibit 6. Respondents by Industry

Survey Data Reliability

One of the key data sets requested by the survey was detail regarding the changes in budget and head-count for the organization and the internal audit department for the past ten years. The committee determined the mid-point of the years and the most recent period (January 2010) as the representative data points. Due to the extensive historical data that is needed for such analysis and the extent of resource commitments needed, the research committee was cognizant of the potential data reliability risk. The respondents were asked to comment on their 'level of comfort' regarding the accuracy of the data provided, it was noted that only about half of the respondents were comfortable with their knowledge of the historical trends of the IA department or the organization's headcount and budget details.

Level of Comfort Regarding Accuraccy of Data Provided

- Very comfortable
- Somewhat comfortable
- Not very comfortable
- Just guessing

18% / 31% / 27% / 24%
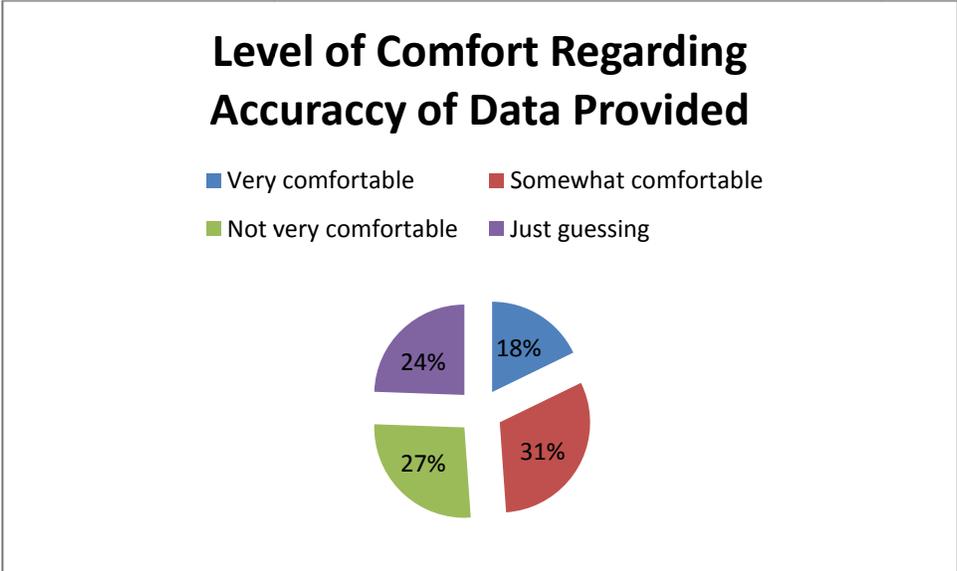
Exhibit 7. Reliability of Data Provided by Respondents

The committee considered only the data points provided by the respondents who were either "very comfortable" or "Somewhat comfortable". Of the 22 respondents from these categories, about 73% were either at the manager level or above. See the table below for details.
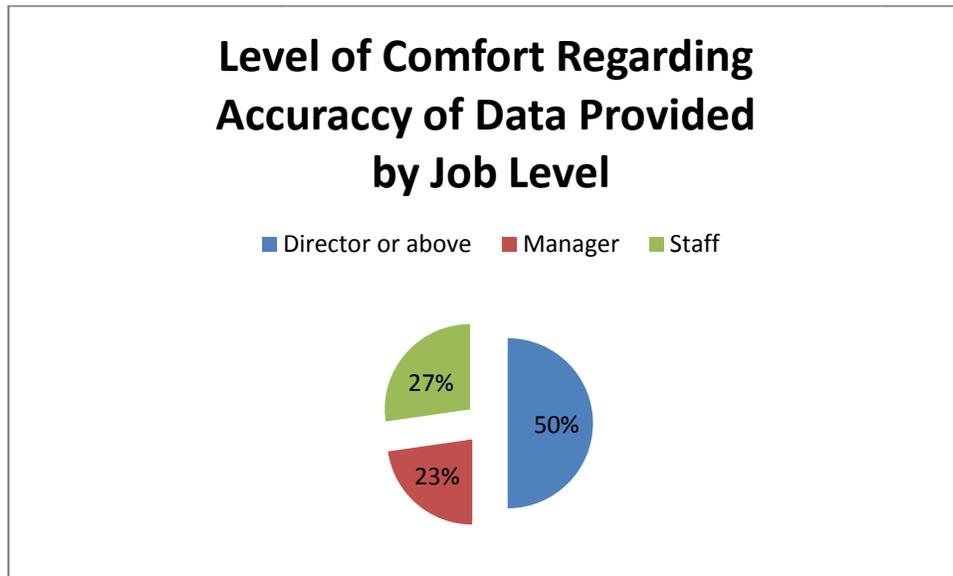
Level of Comfort Regarding Accuraccy of Data Provided by Job Level

■ Director or above   ■ Manager   ■ Staff

As expected, the respondents with higher ranking in the organization appear to have a higher level of comfort regarding the accuracy of the data provided (16 out of 26; 61%) compared to (6 out of 17; 35%) at the staff level.

Results

Perception of Improvement in the Economy

We began by asking the participants how the economy has affected their organization in general. The majority of respondents (90%) felt their organization has been affected either moderately or significantly as shown in Exhibit 9.

Effect of the Economy on Their Organization

- Positive impact (increase in revenue or headcount)
- No impact (no change in revenue or headcount)
- Moderate impact (slight decrease in revenue or headcount)
- Significant impact (significant decrease in revenue and retrenchment)

2% 9% 39% 50%
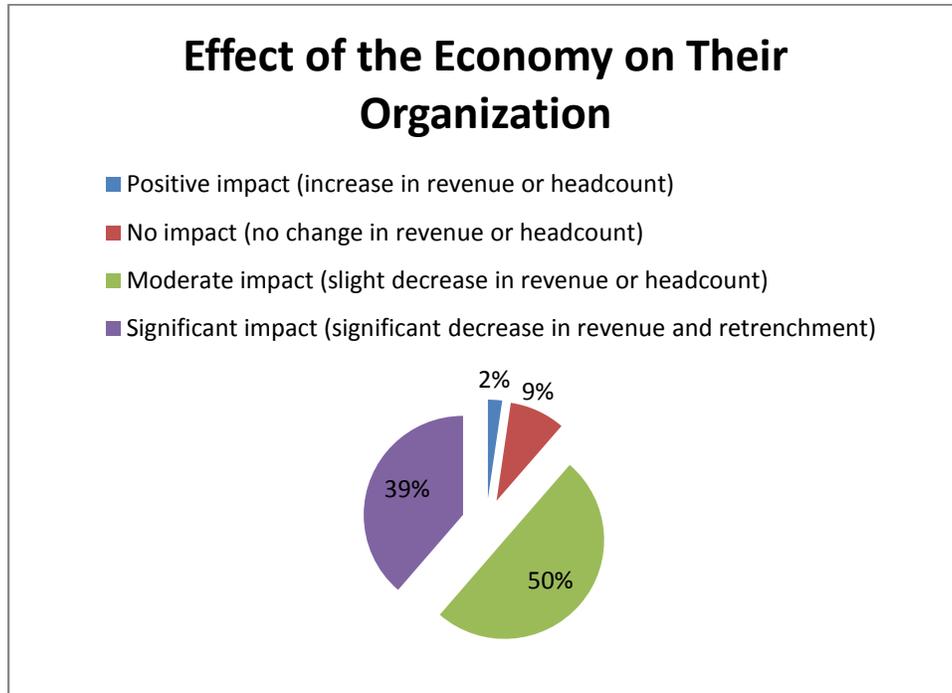
Exhibit 9. Respondents' opinion on economic impact to their organization

When asked about the prospects of the economy improving, about half of our respondents expect the recovery time to be more than 2 years and a slightly lower percentage (46%) expect a near term recovery (less than 2 years).

When asked when their organizations will be rehiring or experiencing an increase in resource allocation, the pattern indicated that there is a perception of lag in resource commitments in comparison to the improvement in the economy.

Perceptions of Timing for Improvements in the Economy

Timeframe for expected recovery

Timeframe for increased resource allocation or hiring

(Bar chart with y-axis from 0 to 18 in increments of 2, categories: Current year, Later part of current year, Next year, In the next 2 years, More than 2 years, Not sure)
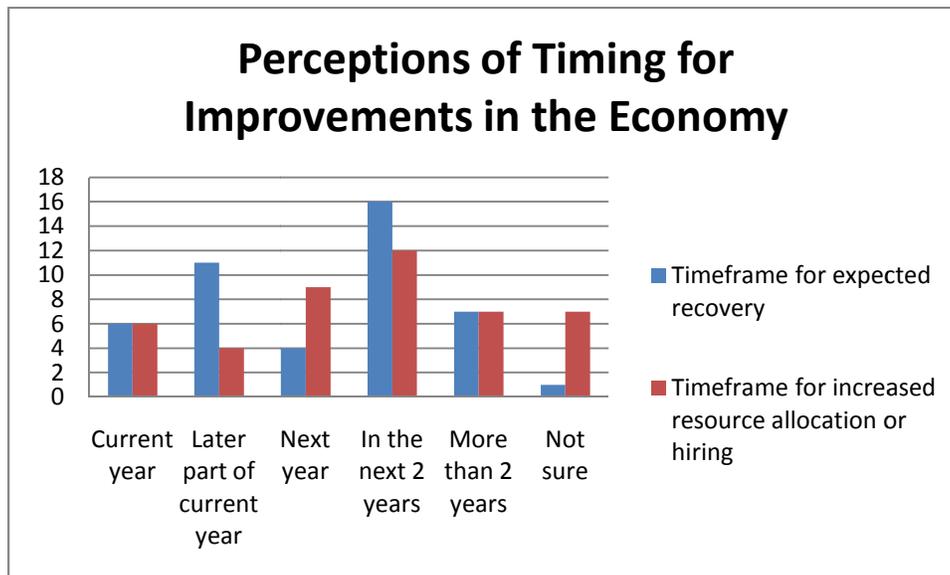
Exhibit 10. Respondents Opinion on the improvement of the economy and when the hiring will increase at their organizations

Approaches Used to Address the Changing Risk Profile

The respondents within the internal audit function were asked to consider the following factors in addressing the changing risk profile and resource availability:

- Co-sourcing arrangement (partially contract IA function to professional service firms)
- Out-sourcing arrangement (completely contract IA function to professional service firms)
- Offshore execution (execute portion of the audit or the entire audit from offshore locations)
- Remote execution (work from home/office and reduce travel in part of full)
- Controls rationalization for compliance reviews (test controls at optimal level/ cross utilize the results for compliance requirements)
- Head-count reduction (reduce the budget/salary/auditors)
- Risk re-assessment (reduce the number of audits)
- Organization structure adjustment (employ two staff in the place of one manager or Director)
- Merge similar functions (combine internal audit and SOX testing group)

- Increased IA department responsibilities (for example- assist the external auditors to reduce the audit fees or take responsibility for additional functions to reduce the costs)

A nine point scale was used for this assessment, with 1= least adopted and 9= highly adopted. An overwhelming majority of the respondents indicated that their organizations were adopting controls rationalization (5.43) followed by increased responsibilities to IA department (4.59) and merging of similar functions (4.47). Offshore execution (1.47), out-sourcing arrangements (1.47) and remote execution were noted to be least adopted. See Appendix I for details.

Further, the "Internal Audit Staff" survey respondents were asked to rate the extent of changes in the IA practices related to them, on a nine point scale of 1=Not at all and 9=Used extensively:

- Increased emphasis on efficient delivery of audits
- Additional hours of work/effort required
- Emphasis on cross training
- Reduction in salary or less raise

These details are shown in Appendix 2, part A. Note the mean response was above the average of 4.5 for all the above items with the exception of reduction in salary or less raise. Based on the responses, there appears to be an increased emphasis on efficient delivery of audits (6.39), additional hours (5.33) and emphasis on cross training (4.67). The extent of reduction in salary was noted to be at 3.39, indicating that salary reduction for the retained IA staff has not been widely experienced.

The "Internal Audit Managers" survey respondents were asked to rate the extent of changes in the IA practices related to them for the following factors:

- Increased efficiency, effectiveness and efficacy monitoring
- Increased budget pressure
- Increased demand for audits
- Increase in risk of fraud

These details are shown in Appendix 2, part B. Although the mean of all responses was above average or close to average, there was a perception of increased focus on efficiency, effectiveness and efficacy monitoring (6.33) and increased risk of fraud (5.10) and the mean was around 4.48 and 4.67 regarding the increase in budget pressure and demand for audits.

Overall Pattern in Internal Auditor employment and Resource Utilization

The research committee used the net change in employment statistics as a measure of economic activity. Please see Exhibit 11 below for the pattern of changes.
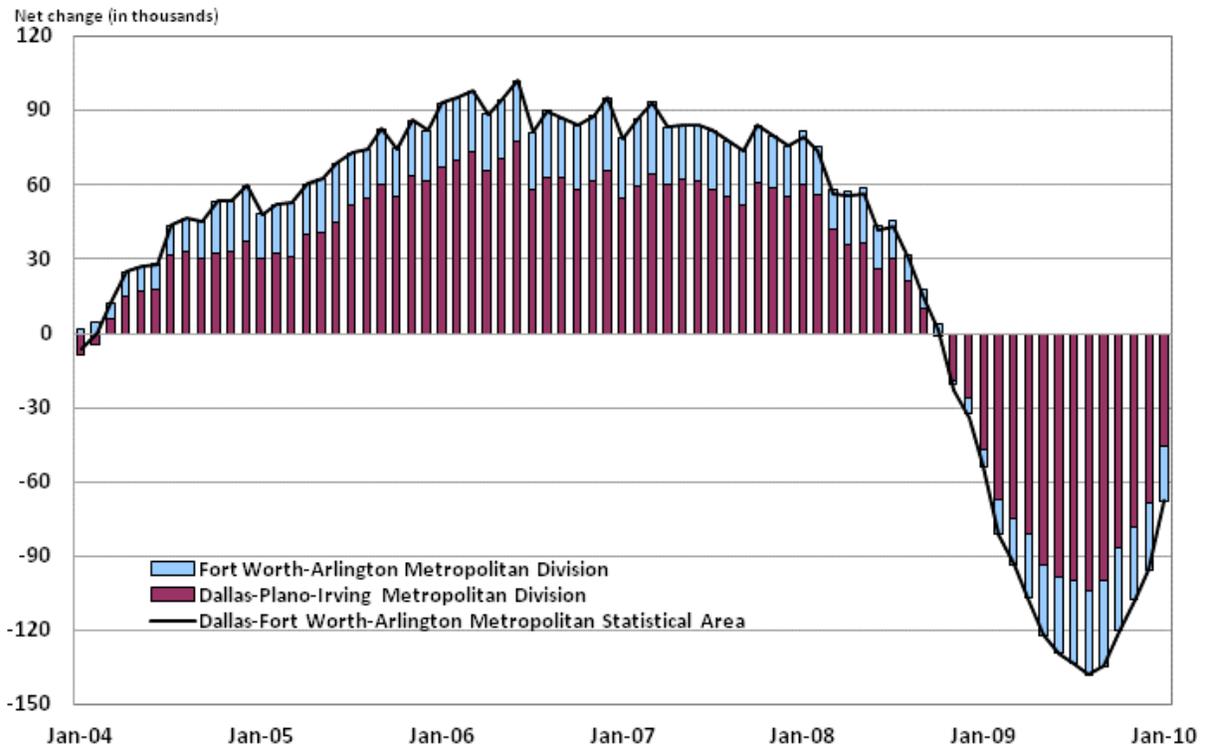
Exhibit 111. Total non-farm employment over-the-year net change in the DFW area[10]

Due to the data reliability limitations, instead of assessing the pattern for the entire cycle starting from July 1999 through January 2010, the committee analyzed the data pattern for the past three segments: January 2010, July 2009 and July 2008.

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[10] Source: United States Department of Labor- Southwest Information Office release dated March 19, 2010 (http://www.bls.gov/ro6/fax/dfw_ces.htm)

January 2010 (Compared to July 2009):

The committee only selected data from respondents who met the following criteria:

- The respondents indicated that they were either 'somewhat comfortable' or 'very comfortable' regarding the accuracy of the data provided.
- At least completed the data for the immediate past periods (Jan 2010 and July 2009).

Of the ten respondents who met the above criteria, five indicated additional budget or increase in headcount compared to July 2009 and five indicated no change in the budget and headcount. This trend appears to be consistent with the employment patter shown in the region.

July 2009 (compared to July 2008):

The committee selected only the responses that met the following criteria:

- The respondents indicated that they were either 'somewhat comfortable' or 'very comfortable' regarding the accuracy of the data provided.
- At least completed the data for the immediate past three periods (Jan 2010, July 2009 and July 2008).

Of the seven respondents that met the above criteria, all indicated reduction in either the headcount or the budget for the period. This trend appears to be consistent with the employment patter shown in the region.

Statistical Analyses

The committee used correlation analysis to understand the relationship between varioys factors. Appendix 3 presents correlations between responses to questions we have labeled 'Approaches Used to Address the Changing Risk Profile and Changes in IA Practices' (depicted in Appendix 1 and 2).

In regard to Approaches, noted the following patterns:

- The co-sourcing, out-sourcing and off-sourcing of IA activities are highly related.

- Adjustments to the organizational structure is related to reductions in headcount and risk reassessments.

- Risk reassessment is also related to co-sourcing of IA activities and control rationalization.

- Increased IA responsibilities is related to adjustment in organizational structure and merger of functions within the organization.

In regard to Changes in IA Practices, the following patterns were noted:

- Staff auditor responses to increased efficiencies, working more hours, and cross training are highly correlated.

- Audit management responses to increased demand for audits and increased budget pressure were correlated.

Conclusions and Implications

Based on the overall responses, almost all organizations appear to have been impacted by the economic downturn and a vast majority of the internal audit departments have focused on increased efficiency in delivering audits.

Some of the specific observations are:

1. The number of respondents with the perception of near-term improvement versus long-term improvement appears to be equally divided.

2. The respondents appear to have a perception of marginal lag in hiring or increased resource allocation compared to the economic cycle.

3. Based on the limited responses and data collected with limited reliability, it appears that the pattern of hiring and budget allocation of the internal audit

department is consistent with the employment levels in the region and align with the organization's trends on these parameters.

4. As expected, the level of awareness of the historical budget and headcounts (of both internal audit and the overall organization) was low with staff level personnel (35%) compared to the managers or above (60%).

5. Internal auditors at all levels felt there is a greater focus on efficient and effective execution of audits, and controls rationalization appears to be the most extensive measure used.

6. It appears that internal auditors are facing increased job responsibilities and merged organizational functions, at the same time that they are facing increased budget pressures, expectations for efficiency and demands for more audits.

Limitations and Lessons Learned

Based on the overall responses, the research committee noted the following limitations and lessons learned:

- Due to the lack of readily available details regarding the historical budget and head-count, the reliability of data may be compromised when collected by an online survey. The reliability of data may be further improved by conducting a facilitation session with all the respondents or including the human resources to establish a reliable baseline.

- Due to a number of vendor and professional organization surveys, it was noted that target audience may have been potentially subjected to the "survey overload phenomenon". A facilitation session may have been an appropriate tool.

Future Opportunities

The research committee sees the following future opportunities for expanding and extending the research on the current topic:

- Use the existing data points as baseline to compare with the actual future recovery data

- Extend the study to other geographical areas to assess sensitivities to local factors

- Reassess the survey tools to obtain more reliable data points for the existing study

Acknowledgements

Appendix I: Approaches Used to Address the Changing Risk Profile

To What extent does your audit shop do the following activities (Particularly in light of the economic conditions)?	Number of responses	Minimum	Maximum	Mean	Std. Deviation	Number of N/A
Co-sourcing arrangement (partially contract IA function to professional service firms)	38	1	7	2.82	1.887	2
Out-sourcing arrangement (completely contract IA function to professional service firms)	38	1	7	1.47	1.330	2
Offshore execution (execute portion of the audit or the entire audit from offshore locations)	34	1	3	1.15	.436	6
Remote execution (work from home/office and reduce travel in part of full)	38	1	8	2.55	2.063	2
Controls rationalization for compliance reviews (test controls at optimal level/ cross utilize the results for compliance requirements)	40	1	9	5.43	2.561	
Head-count reduction (reduce the budget/salary/auditors)	40	1	8	2.78	2.019	
Risk re-assessment (reduce the number of audits)	40	1	9	3.12	2.410	
Organization structure adjustment (employ two staff in the place of one manager or Director)	40	1	9	2.45	2.385	
Merge similar functions (combine internal audit and SOX testing group)	36	1	9	4.47	3.541	4
Increased IA department responsibilities (for example- assist the external auditors to reduce the audit fees or take responsibility for additional functions to reduce the costs)	39	1	9	4.59	2.908	1

Appendix II: Changes in IA Practices

Part A: Staff Auditor Questions

To what extent has your IA dept increased its use of the following						
	Number of responses	Minimum	Maximum	Mean	Std. Deviation	Number of N/A
Increased emphasis on efficient delivery of audits	18	1	9	6.39	2.477	1
Additional hours of work/effort required	18	1	9	5.33	2.521	1
Emphasis on cross training	18	1	9	4.67	2.544	1
Reduction in salary or less raise	18	1	9	3.39	2.682	1

Part B: Audit Management Questions

What extent has your IA department focused on the following						
	Number of responses	Minimum	Maximum	Mean	Std. Deviation	Number of N/A
Increased efficiency, effectiveness and efficacy monitoring	21	2	8	6.33	1.713	
Increased budget pressure	21	1	8	4.48	1.965	
Increased demand for audits	21	2	8	4.67	1.932	
Increase in risk of fraud	21	1	8	5.10	2.166	

Appendix III: Statistical Tables

Correlations for Approaches Used to Address the Changing Risk Profile									
	Co-source	Out-source	Off-shore	Remote execution	Control rationalization	Headcount reduction	Risk reassess	Adjust Org Structure	Merge Functions
Out-source	.424**								
Off-shore	.333*	.525**							
Remote execution	.169	.427**	.311						
Control rationalization	.058	.161	.229	.645**					
Headcount reduction	.249	.017	-.109	-.042	.064				
Risk reassess	.325*	.263	.279	.252	.324*	.354*			
Adjust Org Structure	.190	.253	-.075	-.023	-.007	.458**	.436**		
Merge Functions	-.116	.066	.077	-.023	-.012	.272	.090	.205	
Increase IA Responsibilities	.232	.224	.170	.113	.119	.346*	.307	.488**	.398*
**. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed).									

Correlations for Changes in IA Practices

	Increase Efficiency	Work More Hours	Cross Training	Increased Budget Pressure	Increased Demand for Audits	Increased Risk of Fraud
Work More Hours	0.707[**]					
Cross Train	0.535[*]	0.479*				
Salary Reductions	0.361	0.234	0.499*			
Monitor Efficiency				-0.050		
Increased Budget Pressure				0.307	0.307	
Increase Demand for Audits				0.449*	-0.081	0.187

**. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed).

Appendix IV: Interpreting Correlation Coefficient

In probability theory and statistics, correlation (often measured as a correlation coefficient) indicates the strength and direction of a linear relationship between two random variables. This is in contrast with the usage of the term in colloquial speech, denoting any relationship, not necessarily linear. In general statistical usage, correlation or co-relation refers to the departure of two random variables from independence.

Several authors have offered guidelines for the interpretation of a correlation coefficient. Cohen (1988), has observed, however, that all such criteria are in some ways arbitrary and should not be observed too strictly. This is because the interpretation of a correlation coefficient depends on the context and purpose. A correlation of 0.9 may be very low if one is verifying physical law using high-quality instruments, but may be regarded as high in the social sciences where there may be a greater contribution from complicating factors.

In this same vein, it is important to remember that "large" and "small" should not be taken as synonyms for "good" and "bad" in determining a correlation is of a certain size. For example, a correlation of 1.0 or-1.0 indicates that the two variables analyzed are equivalent modulo scaling. Scientifically, this more frequently indicates a trivial result than a profound one. Consider discovering a correlation of 1.0 between how many feet tall a group of people are and the number of inches from the bottom of their feet to the top of their heads.