The Reliance of External Auditors on Internal Audit's Use of Continuous Audit

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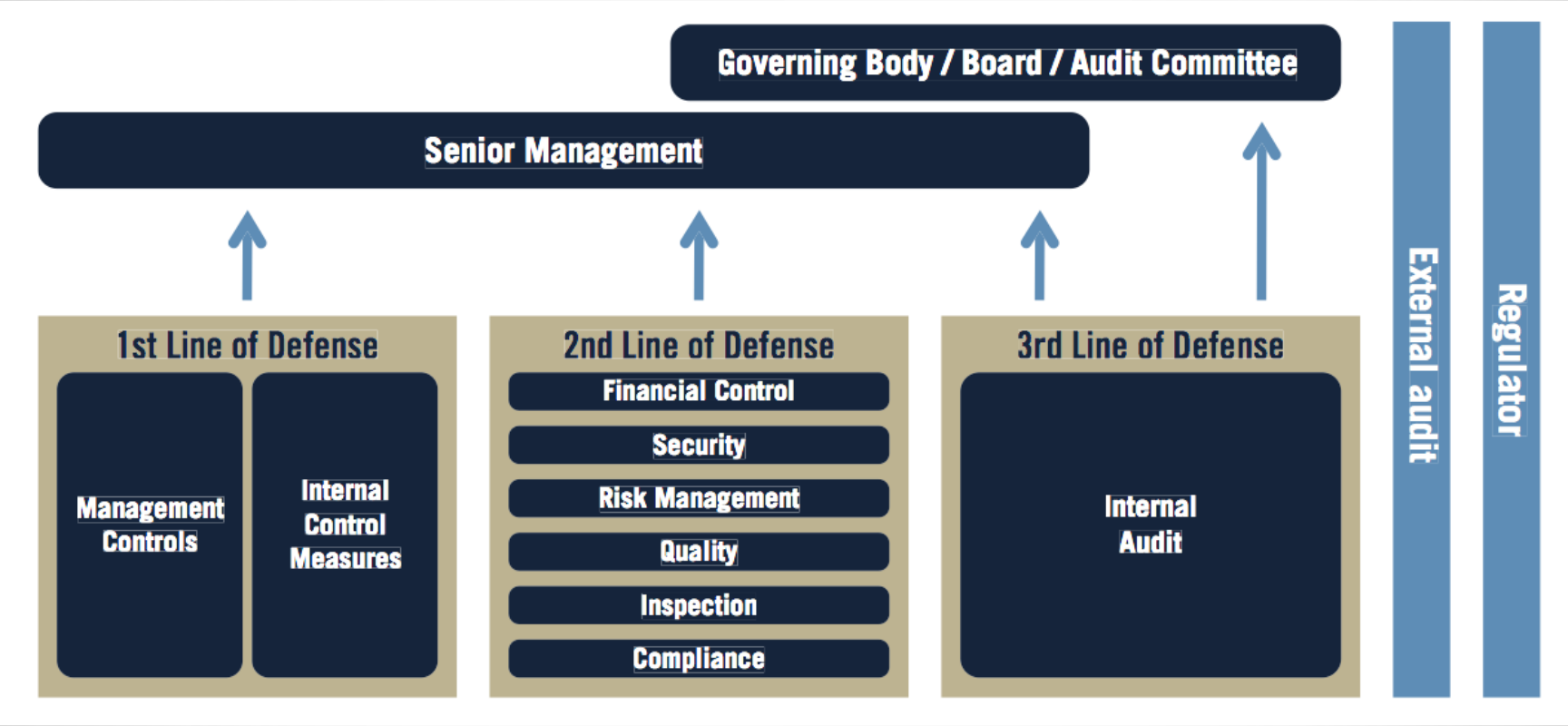
Purpose

- Evaluate the impact of IA's adoption of CA on the degree of reliance external auditors place on IA's work

- AS No. 5 – auditors encouraged to use work already performed by IA

Importance



From John Verver and Shane Grimm (ACL), "Integrating Analytics into Audit Risk and Compliance"

Contribution

- For practice:
  - Companies and managers -> improve effectiveness of Internal Control
  - Investors
  - Employees
  - Stakeholders
- For research:
  - CA + MW literature -> understand the presence of this technology in Internal Audit environments

Motivation

- Continuous audit technology research:

  - large majority have adopted or plan to adopt CA (PwC 2006, IIA 2009)

  - CA/CM in the initiation phase (Vasarhelyi et al 2012)

  - increases in automation of IT processes and controls (Protiviti 2013)

- How willing are auditors to rely on automated control systems and internal auditors' use of CA?
- Will reliance increase with evidence collected through CA technologies vs. human monitoring?

Hypothesis 1

- *H1a: The external auditor will rely more on internal audit work in a continuous audit environment than a traditional audit environment.*
- *H1b: The external auditor will rely less on internal audit work when a prior year audit reports a material weakness over internal controls.*
- *H1c: The differential effect of the internal audit testing approach (CA versus traditional) on external auditor's reliance on internal audit work will be lower in the presence of a prior year material weakness than in the absence of a prior year material weakness.*

Hypothesis 2

- *H2a: The external auditor will budget fewer hours for the audit of a high complexity account in a continuous audit environment than a traditional audit environment.*
- *H2b: The external auditor will budget more hours for the audit of a high complexity account when the prior year audit identified a material weakness over internal controls.*
- *H2c: A continuous audit environment will provide the largest reduction in budgeted audit hours for the valuation of a high complexity account when the prior year audit identified effective internal controls.*

Hypothesis 3

- *H3a: The external auditor will budget fewer audit hours for the engagement in a continuous audit environment than a traditional audit environment.*
- *H3b: The external auditor will budget more audit hours for the engagement when the prior year audit identified a material weakness over internal controls.*
- *H3c: A continuous audit environment will provide a smaller reduction in budgeted audit hours for the engagement when the prior year audit identified a material weakness over internal controls.*

Experimental Design

- 2 x 2 between subjects design
  - Target: Big 4 auditors with at least 3 yrs. experience
  - 87 usable responses
  - Incentive: $5 Starbucks or Amazon gift card
- Treatment conditions:
  - Frequency of internal audit testing: continuous audit or traditional audit
  - Prior material weakness: present vs. absent

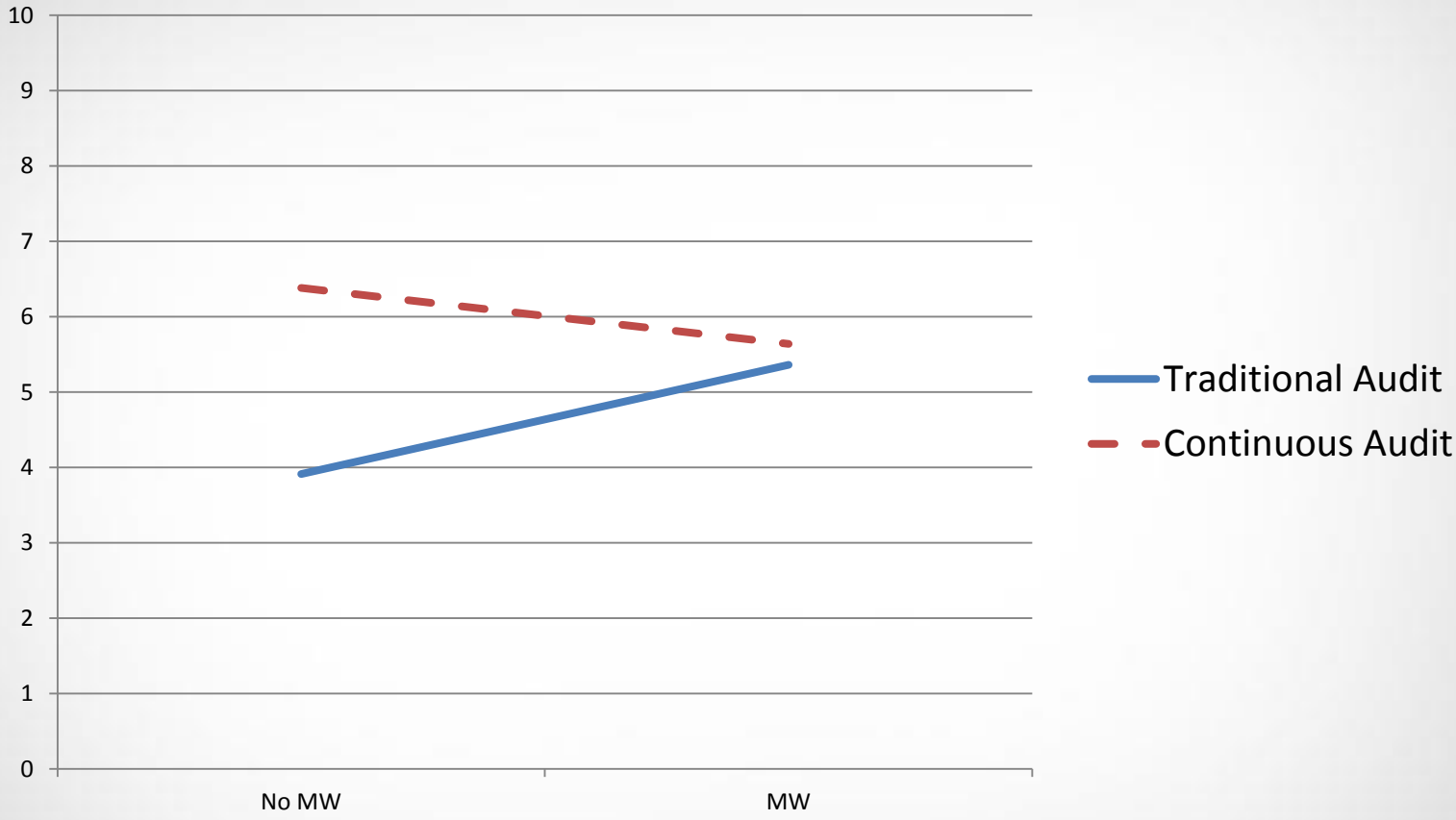
Experimental Task (I)

- Adapted from Glover et al. (2008)
- Continuing client case:
  - Background information: business, industry, and management
  - Prior year audit report on effectiveness of internal controls (complex account)
  - Current internal control environment (complex account)

Experimental Task (II)

- Dependent Variables:
  - auditor reliance
  - Δ budgeted audit hours for complex account
  - Δ budgeted audit hours for engagement
- Manipulation checks
- Demographic information

H1: Reliance on Work Performed by IA



DV Coding: (0 = No reliance, 5 = Moderate reliance, 10 = Extensive reliance)

H1: External auditor reliance

RELIANCE ON IA WORK - Source	df	Mean Square	F-Ratio	p-value (one tail)
Continuous Audit	1	40.943	.058	.008
Material Weakness	1	2.740	.405	.263
Continuous Audit * Material Weakness	1	26.286	.889	.026

H1a supported

H1b not supported

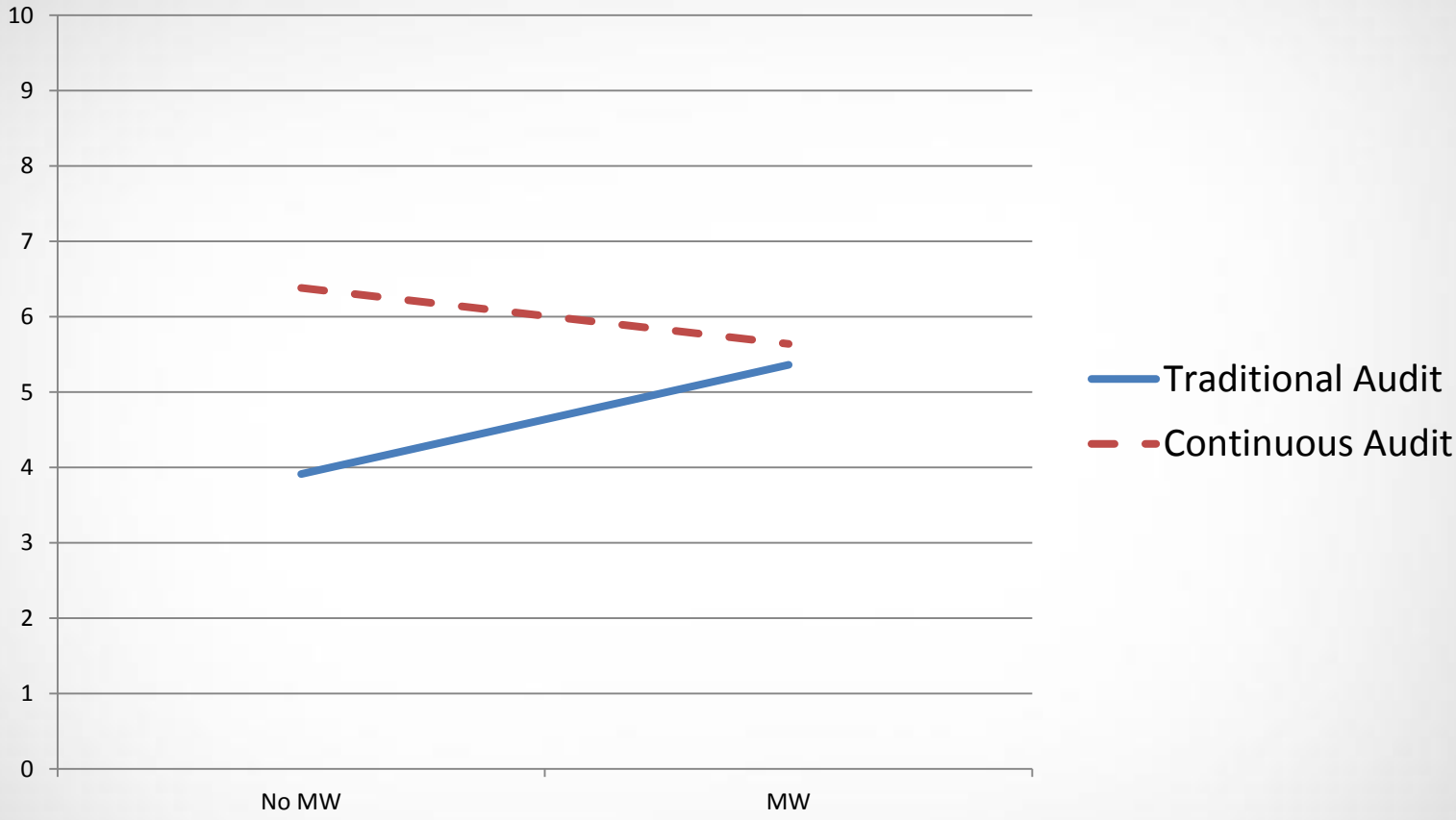
H1c supported

With-in subjects effects Analysis

CA – Material Weakness	CA – No Material Weakness
Traditional Audit – Material Weakness	Traditional Audit – No Material Weakness

RELIANCE ON IA WORK Planned Comparisons	**t-statistic**	**p-value (one tail)**
CA – Material Weakness > Traditional Audit – Material Weakness	.348	.365
CA – Material No Weakness > Traditional Audit – No Material Weakness	3.117	.002

H1: Reliance on Work Performed by IA



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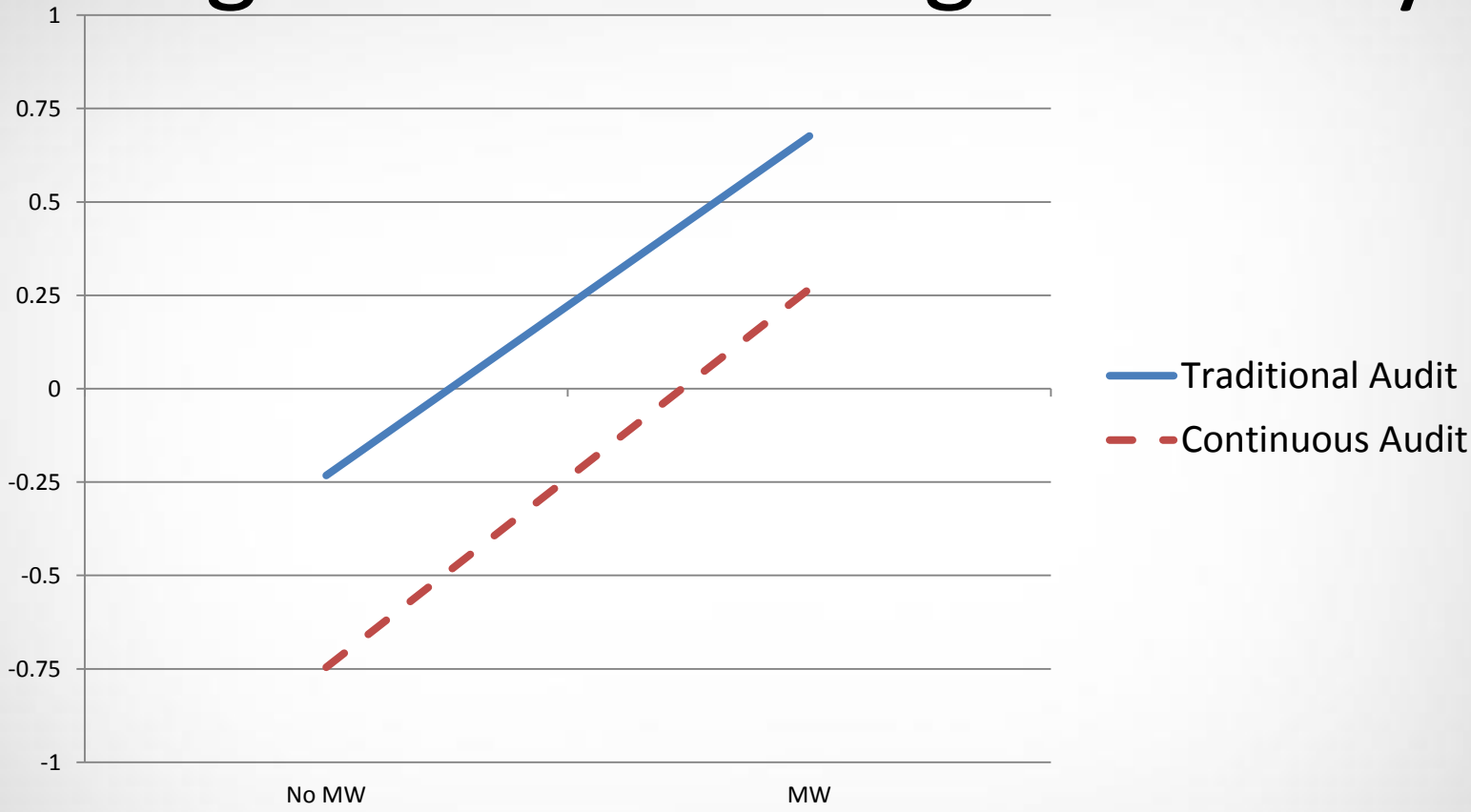
H2: Adjustment of Audit Hours Budgeted for Valuing Inventory



H2: Budget adjustment for the audit of a high complexity account

BUDGET COMPLEX ACCOUNT – Source	df	Mean Square	F-Ratio	p-value (one tail)
Continuous Audit	1	4.621	1.006	.160
Material Weakness	1	20.080	4.373	.020
Continuous Audit * Material Weakness	1	.059	.013	.455

H2a not supported

H2b supported

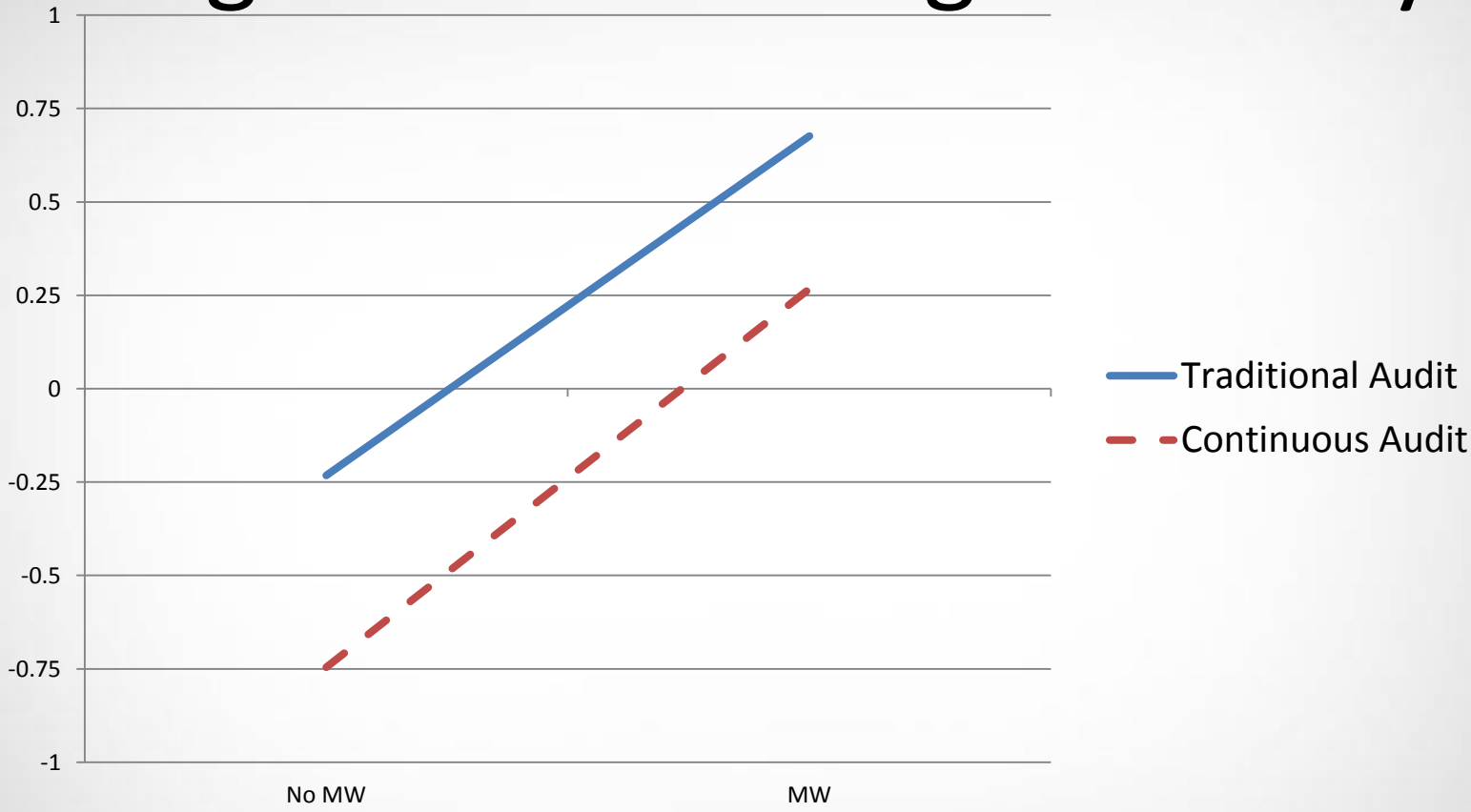
H2c. A continuous audit environment will provide the largest reduction in budgeted audit hours for the valuation of a high complexity account when the prior year audit identified effective internal controls.

CA – No Material Weakness	CA – Material Weakness
Traditional Audit – Material Weakness	Traditional Audit – No Material Weakness

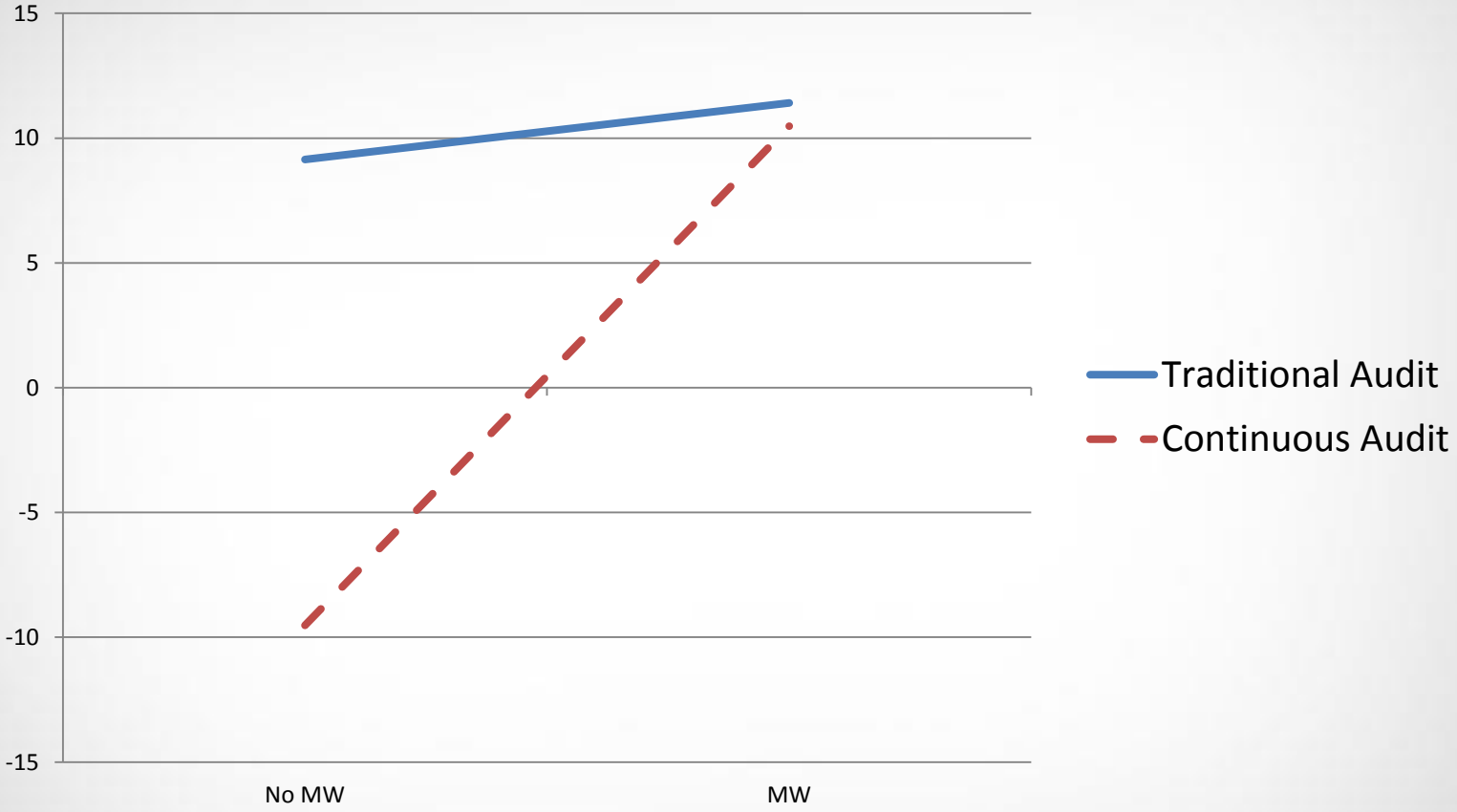
BUDGET COMPLEX ACCOUNT Planned Comparison	t-statistic	p-value (one tail)
CA-NoMW < CA-MW, Traditional-NoMW, Traditional-MW (+3,-1,-1,-1)	1.830	.036

H2c supported

H2: Adjustment of Audit Hours Budgeted for Valuing Inventory



H3: Adjustment of Audit Hours For Current Year's Engagement



DV Coding: (-100-0 = % Decrease , 0-100 = % Increase)

H3: Budget adjustment for the overall audit

OVERALL BUDGET ADJUSTMENT - Source	df	Mean Square	F-Ratio	p-value (one tail)
Continuous Audit	1	2289.491	1.832	.090
Material Weakness	1	2475.671	1.981	.082
Continuous Audit * Material Weakness	1	1533.425	1.227	.136

H3a supported

H3b supported

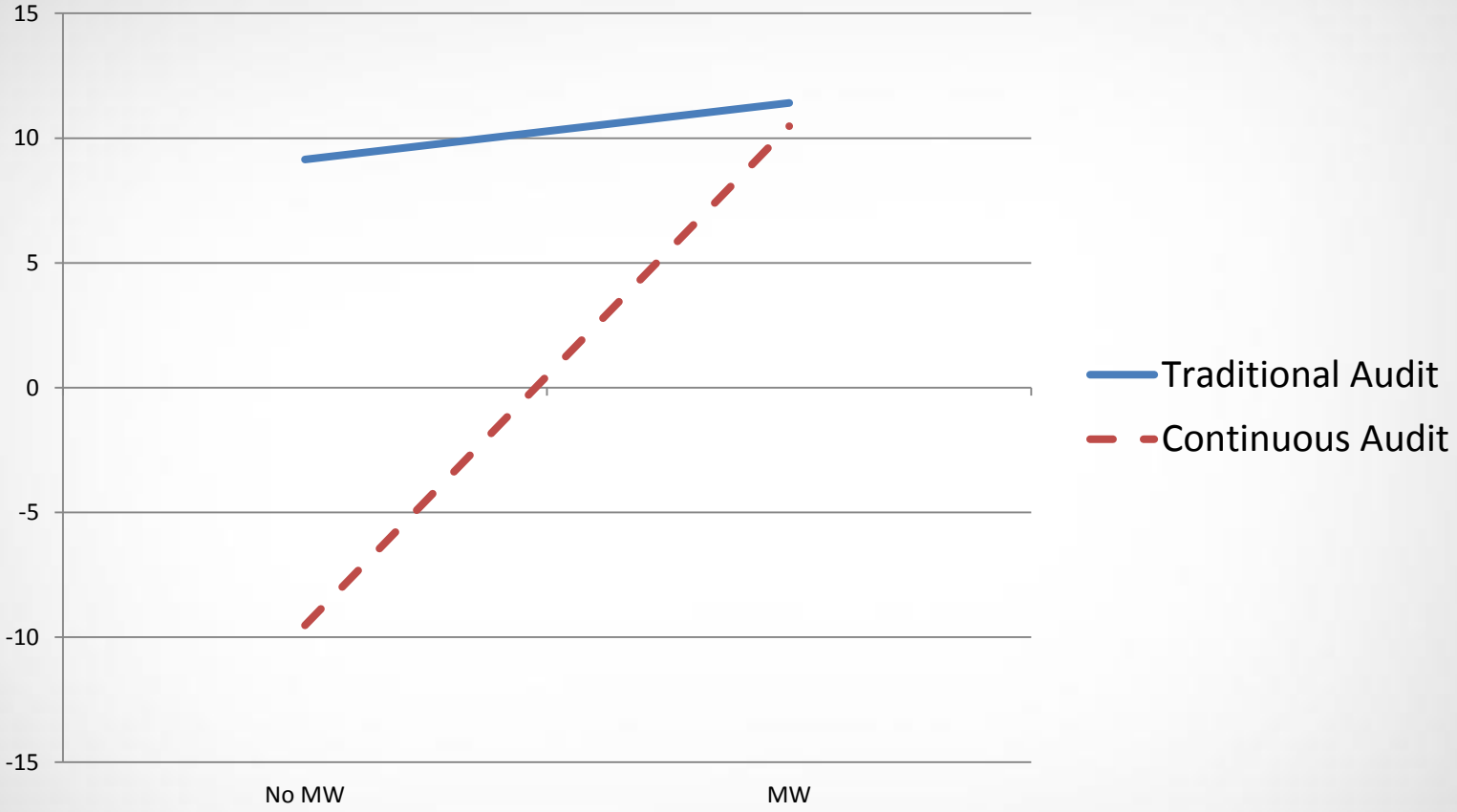
H3c. A continuous audit environment will provide a smaller reduction in budgeted audit hours for the engagement when the prior year audit identified a material weakness over internal controls.

CA – No Material Weakness	CA – Material Weakness
Traditional Audit – Material Weakness	Traditional Audit – No Material Weakness

BUDGET COMPLEX ACCOUNT Planned Comparison	t-statistic	p-value (one tail)
CA-NoMW < CA-MW, Traditional-NoMW, Traditional-MW (+3,-1,-1,-1)	2.208	.015

H3c supported

H3: Adjustment of Audit Hours For Current Year's Engagement



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Conclusion

- CA implementation => behavioral effects on external auditors' decision processes
- Results consistent with regulatory guidelines
- Higher reliance in an automated setting (CA)
- CA benefits diminish – companies with history of control deficiencies
- Lowest budgeted hours when CA + No MW

Discussion

- MW => additional work scheduled
- CA system:
  - hours for increased efficiency
  + hours for robustness and design assessment

- Year-over-year increase in audit fees (Protiviti)
- Short term vs. long term effects

Importance

↑More automated environments

↑Improved auditor reliance

↓Possible budget reduction

↓Lower audit fees

- Understand the effects of implementing CA technology in Internal Audit settings

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