

# Corporate Finance and Reality: Code File

```
In [1]: from datetime import date
today = date.today()
print("File was executed on {}".format(today))

File was executed on 2022-01-15
```

## Table of Contents

- [Description](#)
- [Section I: Data and Survey Methodology](#)
- [Section II: Corporate Investment, Capital Budgeting and the Cost of Capital](#)
- [Section III: Corporate Planning and Internal Forecasts](#)
- [Section IV: Capital Structure](#)
- [Section V: Payout](#)
- [Section VI: The Goal of the Firm](#)

## Description

This file displays all of the results presented in "Corporate Finance and Reality" by John R. Graham.

Results are displayed in order of section. Results from appendices connected to each section are also displayed. For example, Section I below displays figures/tables from Section I in the text and then Appendix A2.

Whenever a figure was created in Python, it is displayed here. Many figures in the paper were finalized in Excel, so we only print the underlying data for those figures.

The underlying code to produce each figure or table are contained in .py files. For example, the file code/Demographics.py produces Figures A1, A2 and Table A2.1.

The results here were created using off-the-shelf Anaconda and should run via any relatively recent version of Anaconda and Jupyter. Nevertheless, we provide below all packages (and their versions) used to produce the results.

- Python 3.7.3
- Anaconda Navigator 2.0.3
- Jupyter Notebook 6.4.3
- pandas 1.1.3
- numpy 1.19.2
- matplotlib 3.3.2
- statsmodels 0.12.0
- PIL 8.3.1

There are two user-written functions, winsorpy and stacked\_barpy, located in the subfolder Functions, which are needed to produce the results.

Lastly, results for Table A8.I were produced using Stata Version 16. See "Code/Lintner\_Regressions.txt" for details.

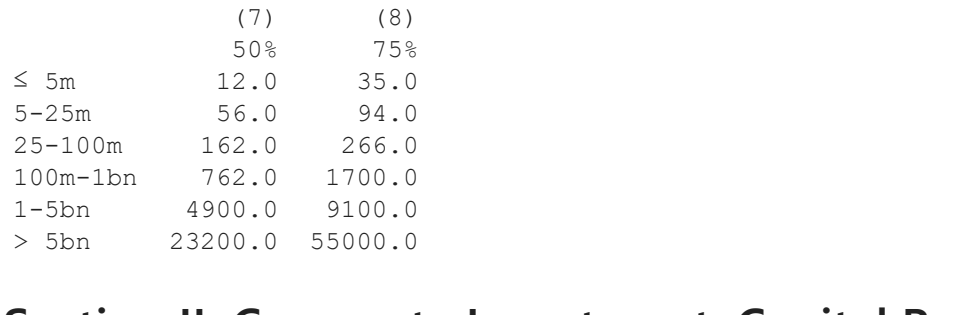
## Section I: Data and Survey Methodology

Covers Section I and Appendix 2

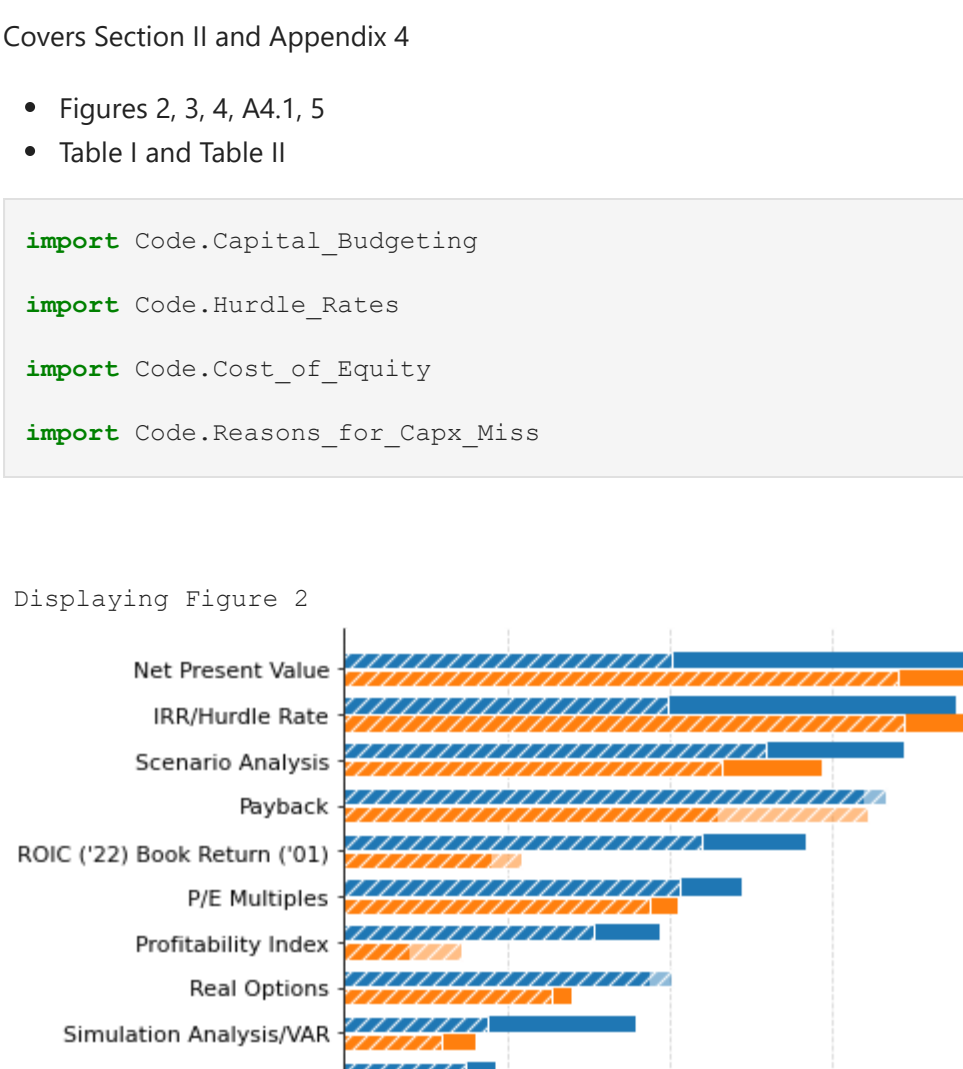
- [Figures 1 and A2.1](#)
- [Table A2.1](#)

```
In [2]: import Code.Demographics
```

Displaying Figure 1:



Displaying Figure A2.1:



Displaying Table A2.1:

	(1)	(2)	(3)	(4)	(5)	(6)
	% of Sample	25%	50%	75%	% of Sample	25%
<5m	19.8	2.0	9.0	27.0	15.0	3.0
5-25m	16.2	31.0	59.0	100.0	7.2	56.0
25-100m	26.9	99.0	198.0	350.0	13.0	91.0
100m-1bn	21.3	425.0	925.0	1590.0	30.4	341.0
1-5bn	8.1	2150.0	3200.0	10000.0	21.4	2215.0
> 5bn	7.7	10000.0	35500.0	82500.0	12.9	10700.0

	(7)	(8)
	25%	75%
<5m	12.0	35.0
5-25m	16.0	94.0
25-100m	162.0	266.0
100m-1bn	762.0	1700.0
1-5bn	4900.0	9100.0
> 5bn	23200.0	55000.0

## Section II: Corporate Investment, Capital Budgeting and the Cost of Capital

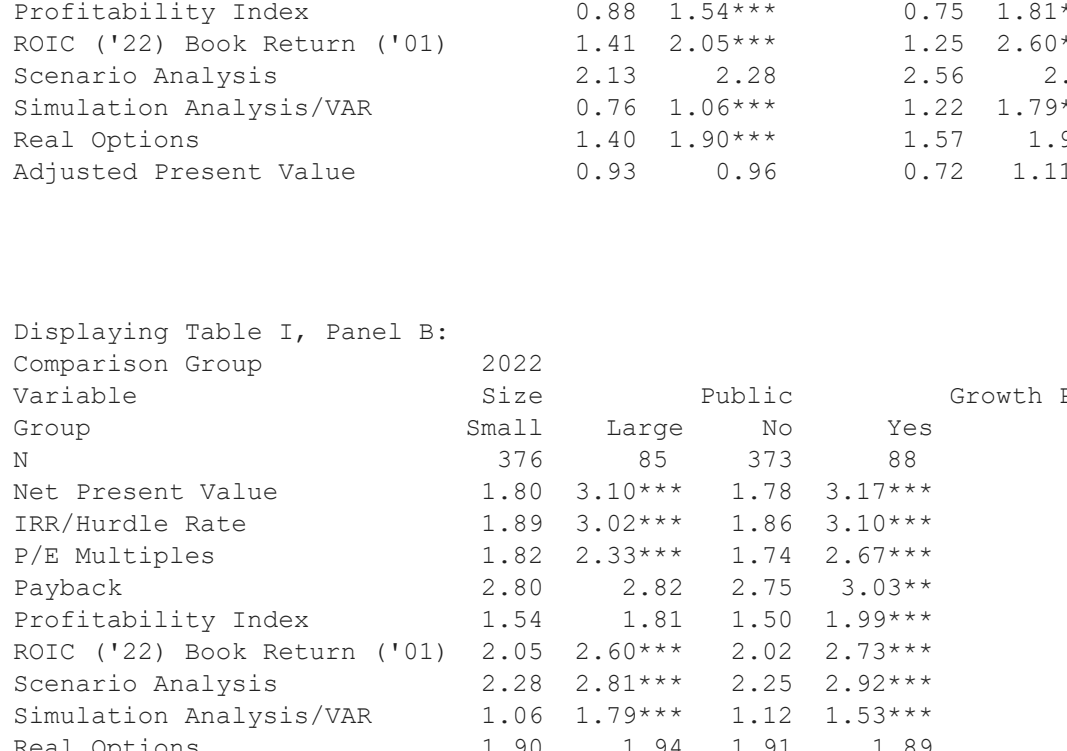
Covers Section II and Appendix 4

- [Figures 2, 3, 4, A4.1, 5](#)
- [Table I and Table II](#)

```
In [3]: import Code.Capital_Budgeting
```

```
import Code.Hurdle_Rates
import Code.Cost_of_Equity
import Code.Reasons_For_Capx_Miss
```

Displaying Figure 2:



Displaying Table I, Panel A: Percent Always or Almost Always

Variable	Group	Size	2001	2002	2022
Net Present Value			161	85	
IRR/Hurdle Rate			84.52	77.38	
P/B Multiples			45.89	63.86	
Payback			58.67	68.67	
Profitability Index			6.03	38.75	
Real Options			26.03	37.50	
Adjusted Present Value			7.30	18.75	

Variable	Group	Size	2001	2022	Survey
Net Present Value			67.92	40.22	3.08
IRR/Hurdle Rate			68.12	39.67	3.09
P/B Multiples			37.50	41.24	1.89
Payback			64.29	66.40	2.53
Profitability Index			14.50	30.56	0.83
Real Options			21.78	43.99	1.34
Simulation Analysis/VAR			46.38	51.78	2.31
Adjusted Present Value			15.44	17.65	0.95

Variable	Group	Size	2001	2022	Survey
Net Present Value			2.83	1.80***	3.42
IRR/Hurdle Rate			2.86	1.89***	3.41
P/B Multiples			1.80	1.82	2.01
Payback			2.72	2.80	2.25
Profitability Index			0.88	1.34***	0.75
Real Options			1.41	2.05***	1.25
Simulation Analysis/VAR			2.13	2.28	2.56
Adjusted Present Value			0.16	1.06***	0.22

Displaying Table I, Panel B:

Comparison Group	2022	Size	Public	Growth Prospects
Variable				
Group				
N	376	85	373	88
Net Present Value	1.80	3.10***	1.78	3.17***
IRR/Hurdle Rate	1.82	3.02***	1.86	3.10***
P/B Multiples	1.82	2.33***	1.74	2.67***
Payback	2.80	2.82	2.75	2.02***
Profitability Index	1.54	1.81	1.50	1.99***
Real Options	2.05	2.60***	2.02	2.73***
Simulation Analysis/VAR	2.28	2.81***	2.25	2.92***
Adjusted Present Value	1.06	1.79***	1.12	1.53***

Comparison Group	2022	Size	Public	Growth Prospects
Variable				
Group				
N	217	376	378	461
Net Present Value	67.92	40.22	3.08	2.04***
IRR/Hurdle Rate	68.12	39.67	3.09	2.10***
P/B Multiples	37.50	41.24	1.89	1.92
Payback	64.29	66.40	2.53	2.80***
Profitability Index	14.50	30.56	0.83	1.59***
Real Options	21.78	43.99	1.34	2.15***
Simulation Analysis/VAR	46.38	51.78	2.31	2.38
Adjusted Present Value	15.44	17.65	0.95	1.93***

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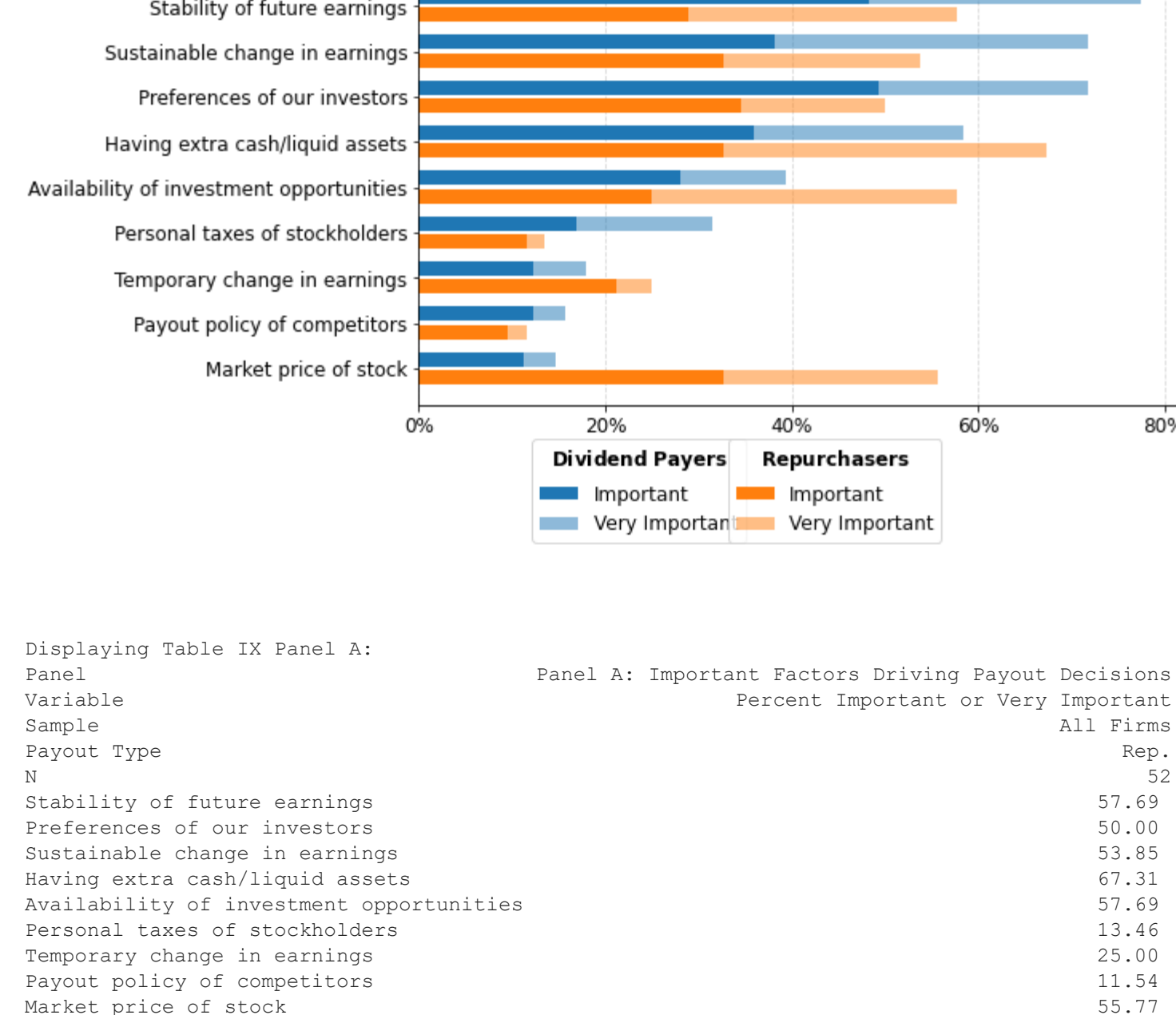
Current Profits	0.175
Demand for our Product	0.400
Cash Holdings	0.350
Expected Future Profits	0.225
Economic Uncertainty	0.175
Political Uncertainty	0.125
International Trade/Tariffs	0.125
Access to Resources	0.125
Planned Acquisition or Divestiture	0.100
Actions of Competitors	0.100
Price/Availability of Capital	0.075
Borrowing Interest Rate	0.050
Domestic GDP Growth	0.025
Capital Spending	Actual Above Forecast in 2019
Current Profits	0.153846
Demand for our Product	0.384615
Cash Holdings	0.300000







Displaying Figure 20:



Displaying Table IX Panel A:

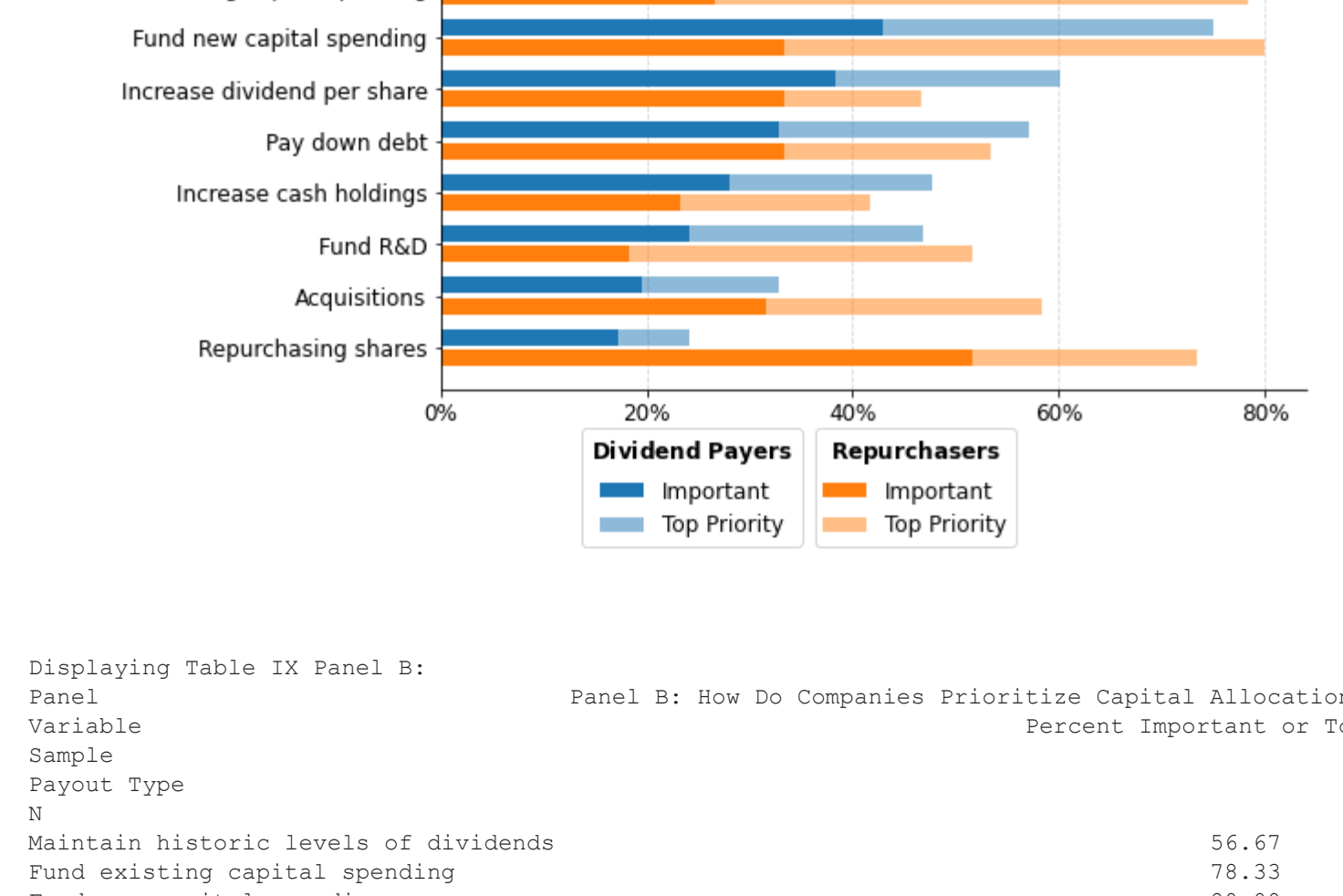
Panel	Variable	Sub-Sample Comparisons	All Firms	Rep.
Sample	Div.			
Payment Type	89			
Stability of future earnings	77.53		2.46	
Preferences of our investors	71.91		2.33	
Sustainable change in earnings	71.91		2.32	
Having extra cash/liquid assets	58.43		2.76	
Availability of investment opportunities	39.33		2.53	
Personal taxes of stockholders	31.46		0.78	
Temporary change in earnings	17.98		1.33	
Payout policy of competitors	15.73		0.98	
Market price of stock	14.61		2.48	

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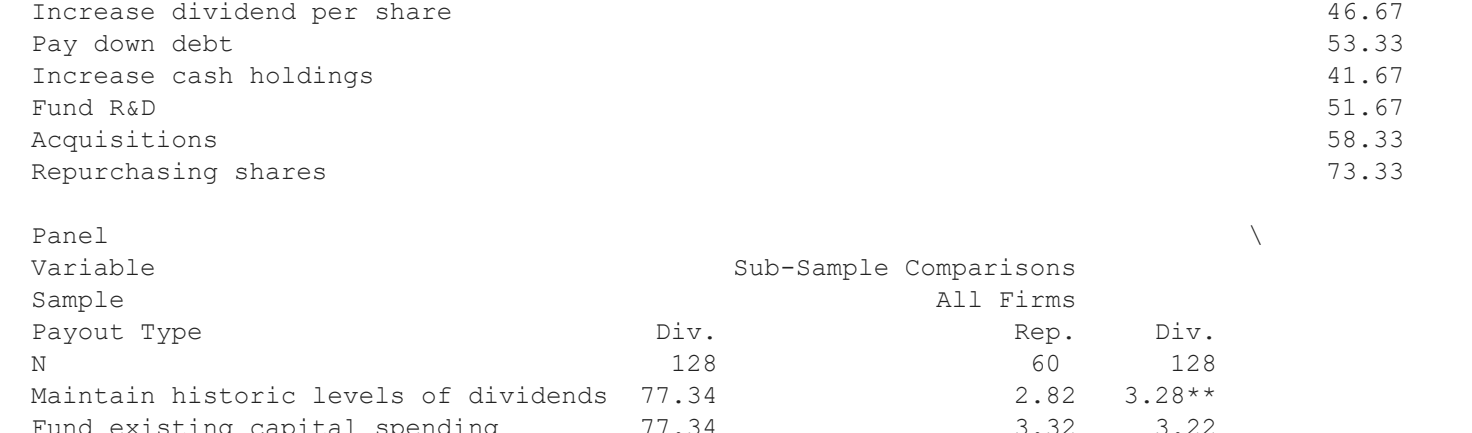
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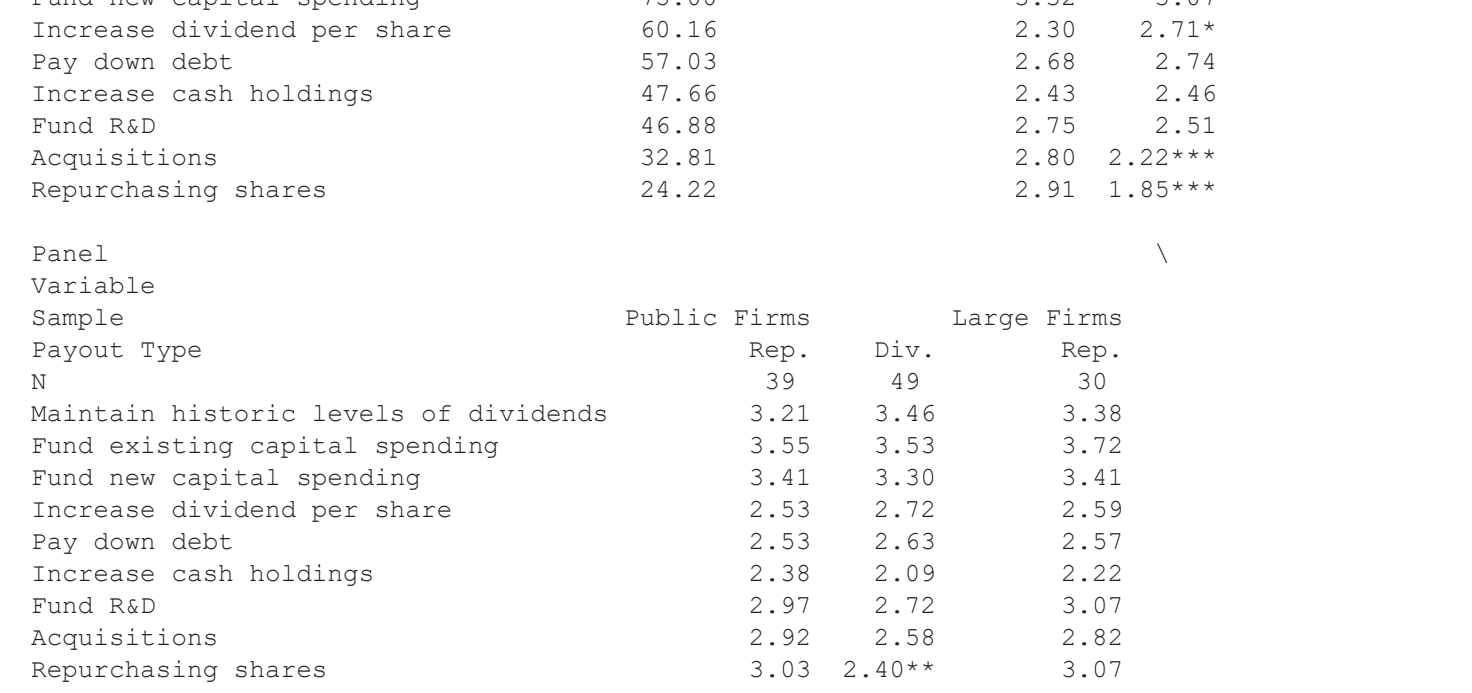
Displaying Figure A8.1:



Displaying Figure A8.2:



Displaying Figure 21:



Displaying Table IX Panel B:

Panel	Variable	Sub-Sample Comparisons	All Firms	Rep.
Sample	Div.			
Payment Type	89			
Maintain historic levels of dividends	77.53		2.46	
Fund existing capital spending	71.91		2.33	
Fund new capital spending	71.91		2.32	
Increase dividend per share	58.43		2.76	
Pay down debt	39.33		2.53	
Increase cash holdings	31.46		0.78	
Fund R&D	17.98		1.33	
Acquisitions	15.73		0.98	
Repurchasing shares	14.61		2.48	

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Displaying Table A8.1

Statistic	Mean	Std Dev	25th	50th
Speed of Adjustment	0.386427	0.285535	0.194639	0.370168
Target Payout	0.396375	0.491548	0.194356	0.404977
Adjusted R-Squared	0.397090	0.277704	0.165699	0.413146

Statistic	Mean	Std Dev	25th	50th
Speed of Adjustment	0.335171	0.174322	0.216236	0.013731
Target Payout	0.596247	0.371878	1.274017	0.074594
Adjusted R-Squared	0.612059	0.363615	0.243674	0.165558

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Statistic	Mean	Std Dev	25th	50th
Speed of Adjustment	0.335171	0.174322	0.216236	0.013731
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Displaying Table A8.1

Statistic	Mean	Std Dev	25th	50th
Speed of Adjustment	0.386427	0.285535	0.194639	0.370168
Target Payout	0.396375	0.491548	0.194356	0.404977
Adjusted R-Squared	0.397090	0.277704	0.165699	0.413146

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