Exporing Discretionary Accruals:

A Stub Project*

Joachim Gassen

TRR 266 Accounting for Transparency

Humboldt-Universität zu Berlin

gassen@wiwi.hu-berlin.de

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Abstract

The Open Science movement promotes the accessibility and reusability of research. This repository has the objective to help researchers establishing such an collaboration-oriented workflow. It uses a toy project on discretionary accruals for demonstration.

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1 Introduction

This is not a paper but a stub that is part of a project template repository. We developed this repository to provide a prototype for a reproducible and collaborative workflow. Several authors have discussed advantages of such workflows (Wilson et al. (2017), Gertler, Galiani, and Romero (2018), Christensen, Freese, and Miguel (2019)) and many scholars across fields have voiced the need for increased reproducibility in science (e.g., Ioannidis (2005), Gelman and Loken (2014), Duvendack, Palmer-Jones, and Reed (2017)).

2 Discretionary Accruals

To demonstrate our workflow, we explore discretionary accruals across the U.S. We calculate modified Jones and Dechow and Dichev type accruals and show their distributional properties. The main purpose of all this, however, is to provide a toy use case for our project template directory that contains all the code to obtain the data, run the analysis and prepare a paper as well as a presentation.

1 presents our data that is based on a simple WRDS pull of Compustat data with financial firms (SIC 6XXX) excluded. We require data to calculate all variables and this drastically reduces the sample size. Modified Jones discretionary accruals are calculated loosely based on Hribar and Nichols (2007) and Dechow and Dichev discretionary accruals are calculated based on (big surprise) Dechow and Dichev (2002). As you will see from 1, discretionary accruals are very noisy constructs, even after limiting the sample to observations with complete data and winsorizing all data to the top and bottom percentile for each year. Figure 2 shows a very prominent heteroscedasticity of discretionary accruals with regards to size. While researchers have tried to address this problem, the distributional properties of these constructs significantly complicate the interpretation of discretionary accrual-related findings. Especially in high powered settings, the measurement error, being highly correlated with size, will tend to load on variables that are unrelated to the underlying economic construct but correlated with size. 2 shows some correlations and 3 shows some completely pointless regressions.

[Figure 1 about here.]

[Figure 2 about here.]

[Table 1 about here.]

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[Table 3 about here.]

3 Conclusion

Isn't that wonderful? Discretionary accruals rock but what rocks even more is open science and a collaborative workflow. Clone or fork this repository to kickstart your own projects. If you do not like R, consider contributing code in your favorite statistical programming language to the repo. Thanks for reading and enjoy!

References

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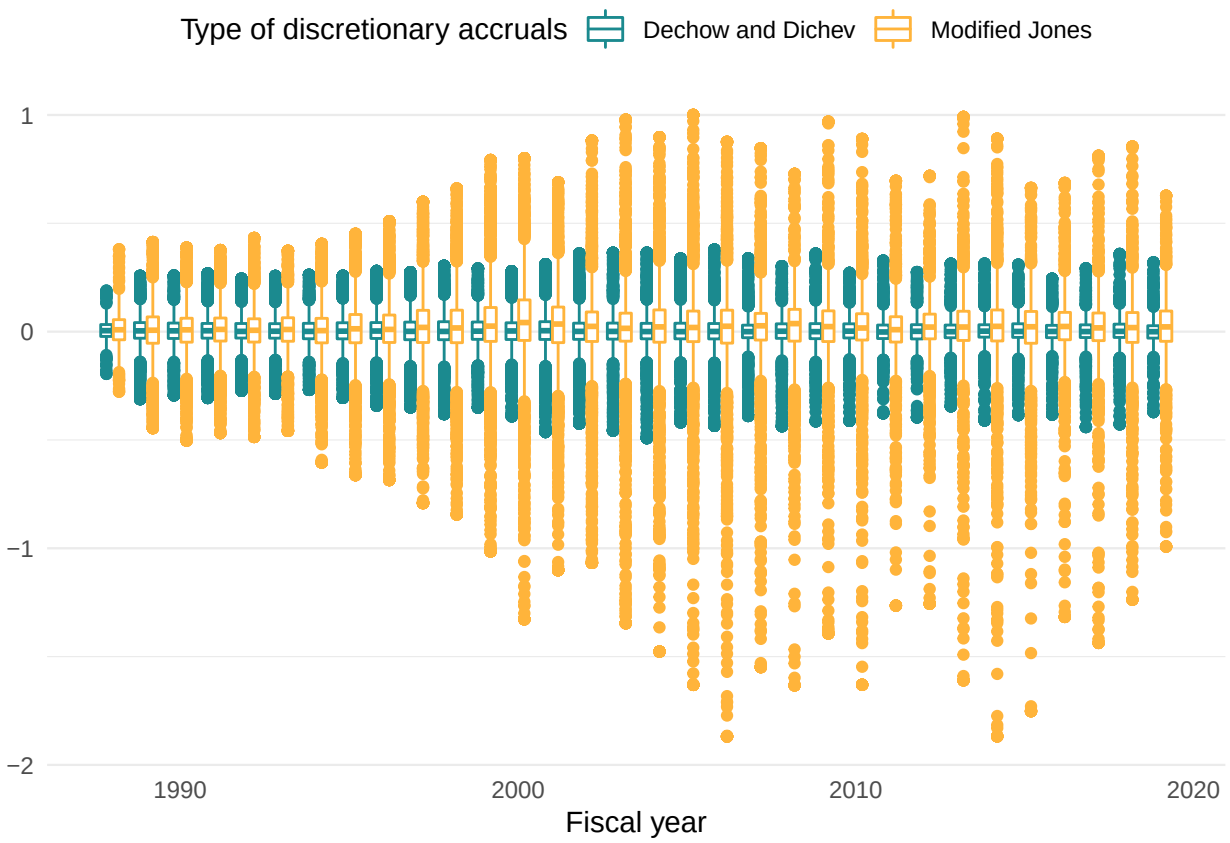

Figure 1: Distribution of Discretionary Accruals over Time

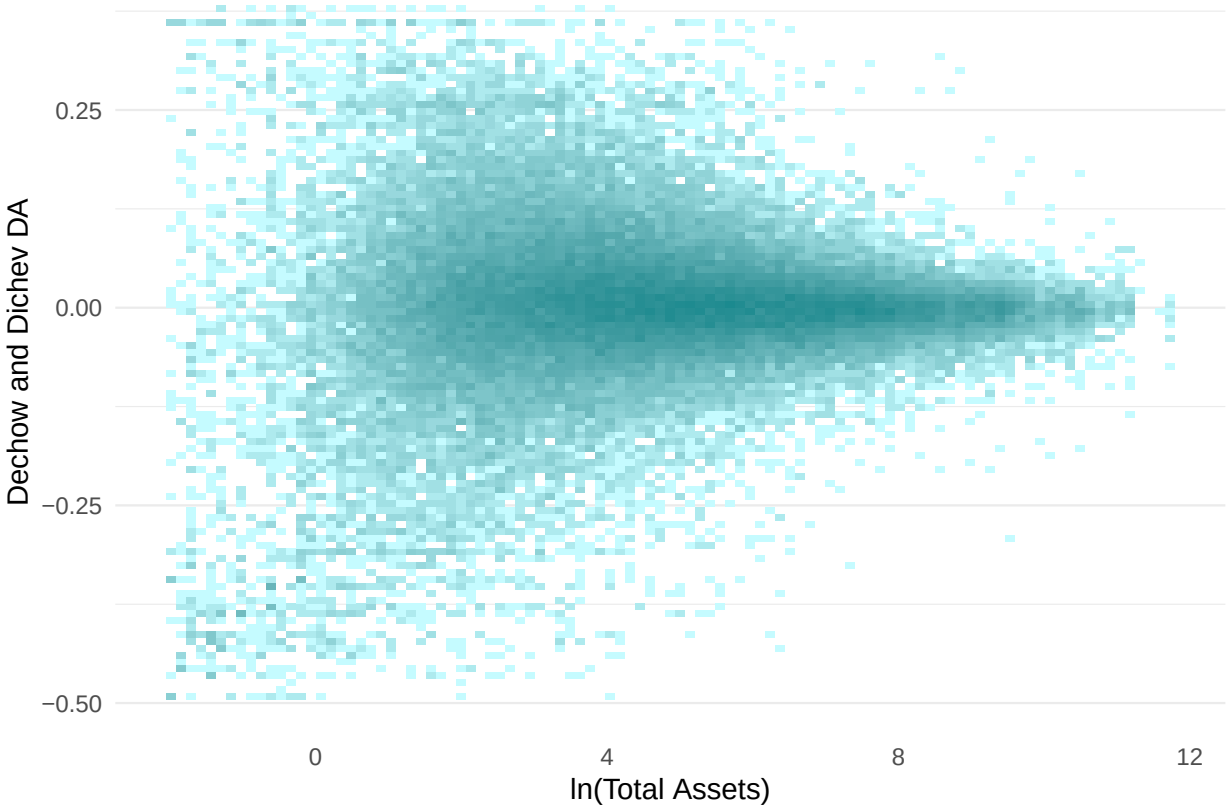

Figure 2: Dechow and Dichev DA and Firm Size

Table 1: Descriptive Statistics

	N	Mean	Std. dev.	Min.	25 %	Median	75 %	Max.
Modified Jones DA	56,231	0.006	0.233	-1.869	-0.047	0.017	0.087	1.000
Dechow and Dichev DA	56,231	0.001	0.095	-0.491	-0.032	0.002	0.038	0.379
Ln(Total assets)	56,231	4.554	2.390	-1.972	2.864	4.453	6.191	11.741
Ln(Market capitalization)	56,231	4.537	2.410	-1.476	2.782	4.421	6.258	11.768
Market to book	56,231	2.769	8.015	-77.857	0.929	1.797	3.463	122.036
Return on assets	56,231	-0.121	0.618	-11.516	-0.101	0.042	0.088	0.893
Sales growth	56,231	1.013	0.456	-4.506	0.988	1.014	1.056	4.608

Note: The data is obtained from the Compustat U.S. as provided by WRDS. The sample covers the period 1988 to 2019 and 8,782 unique firms.

Table 2: Correlations

	A	B	C	D	E	F	G
A: Modified Jones DA		**0.38**	**0.04**	**0.01**	**0.02**	**0.44**	**0.04**
B: Dechow and Dichev DA	**0.43**		**0.06**	**0.09**	**0.07**	**0.22**	**0.07**
C: Ln(Total assets)	**-0.05**	**-0.01**		**0.88**	**0.02**	**0.39**	**0.05**
D: Ln(Market capitalization)	**-0.02**	**0.05**	**0.88**		**0.13**	**0.24**	**0.05**
E: Market to book	**0.07**	**0.13**	**0.13**	**0.41**		**0.06**	**0.01**
F: Return on assets	**0.28**	**0.19**	**0.38**	**0.36**	**0.19**		**0.08**
G: Sales growth	**0.10**	**0.22**	0.00	**0.10**	**0.21**	**0.21**	

This table reports Pearson correlations above and Spearman correlations below the diagonal. Number of observations: 56231. Correlations with significance levels below 5% appear in bold print.

Table 3: Regressions

	Dependent variable:	
	Modified Jones DA	Dechow and Dichev DA
	(1)	(2)
Ln(Total assets)	-0.041^{***}	0.003^{***}
	(0.005)	(0.001)
Market to book	0.00002	0.001^{***}
	(0.0002)	(0.0001)
Return on assets	0.244^{***}	0.053^{***}
	(0.024)	(0.008)
Sales growth	0.009^{**}	0.011^{***}
	(0.004)	(0.002)
Estimator	ols	ols
Fixed effects	gvkey, fyear	gvkey, fyear
Std. errors clustered	gvkey, fyear	gvkey, fyear
Observations	56,231	56,231
R^2	0.196	0.063
Adjusted R^2	0.047	-0.112
Note:		*p<0.1; **p<0.05; ***p<0.01