



Troubled Asset Relief Program: Impact as seen in the Agricultural Sector

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Abstract

My study extends the study “Does Access to External Finance Improve Productivity? Evidence from a Natural Experiment” by Alexander Butler and Jess Cornaggia. Their study identified that agricultural production increased the most over the sample period in areas with relatively strong access to capital. My research adapts their empirical approach to capture productivity differences before and after the financial crisis. My study then dives into further detail and captures the impacts of government infusions under the Troubled Asset Relief Program (TARP).

Research Questions

- 1) Did the Financial Crisis impact the relative productivity of corn and soybeans consistent with increased constraints in access to finance?
- 2) Did the TARP moderate the effects of the financial crisis on productivity consistent with an easing of access to finance constraints?

Hypotheses

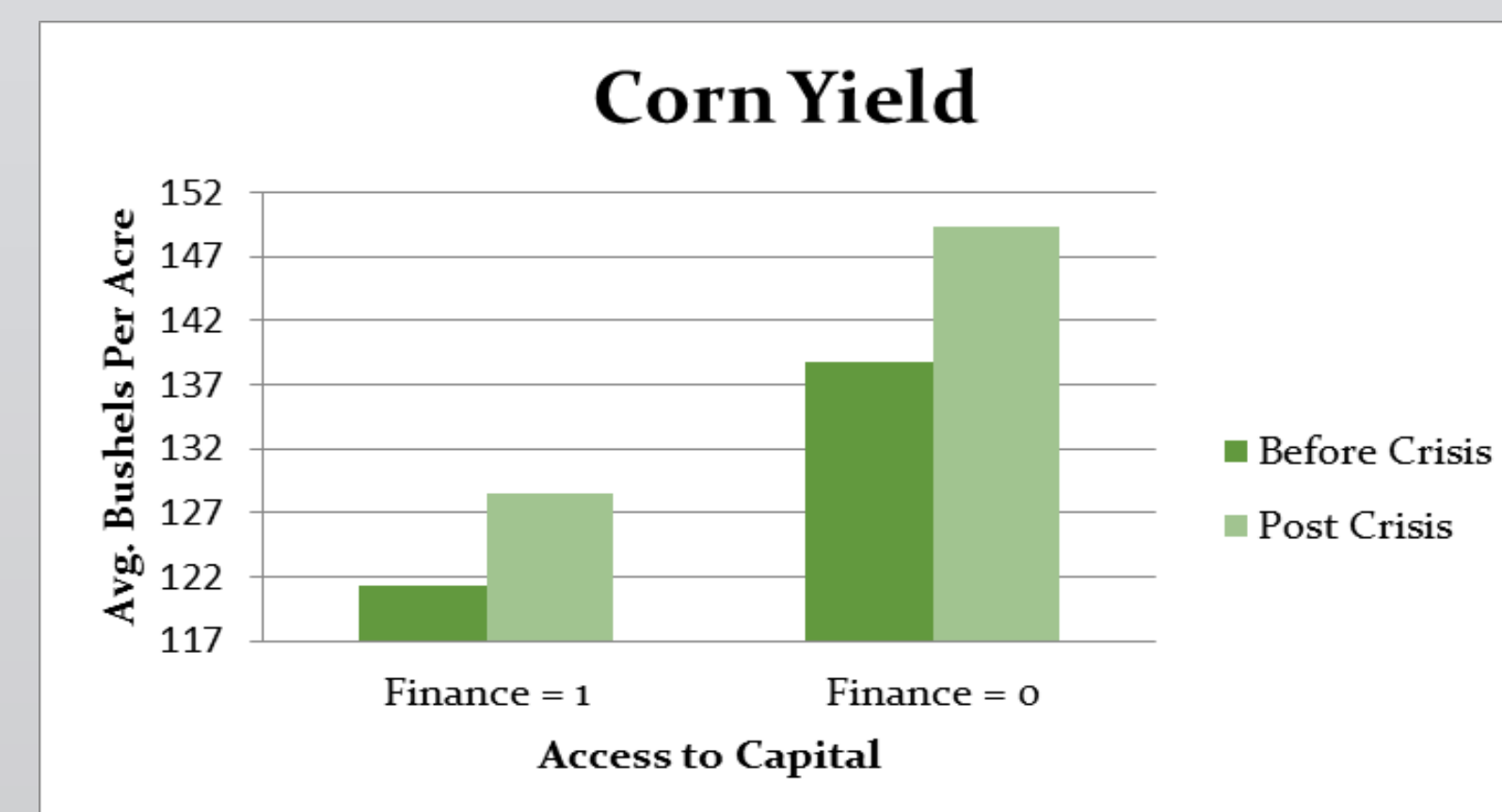
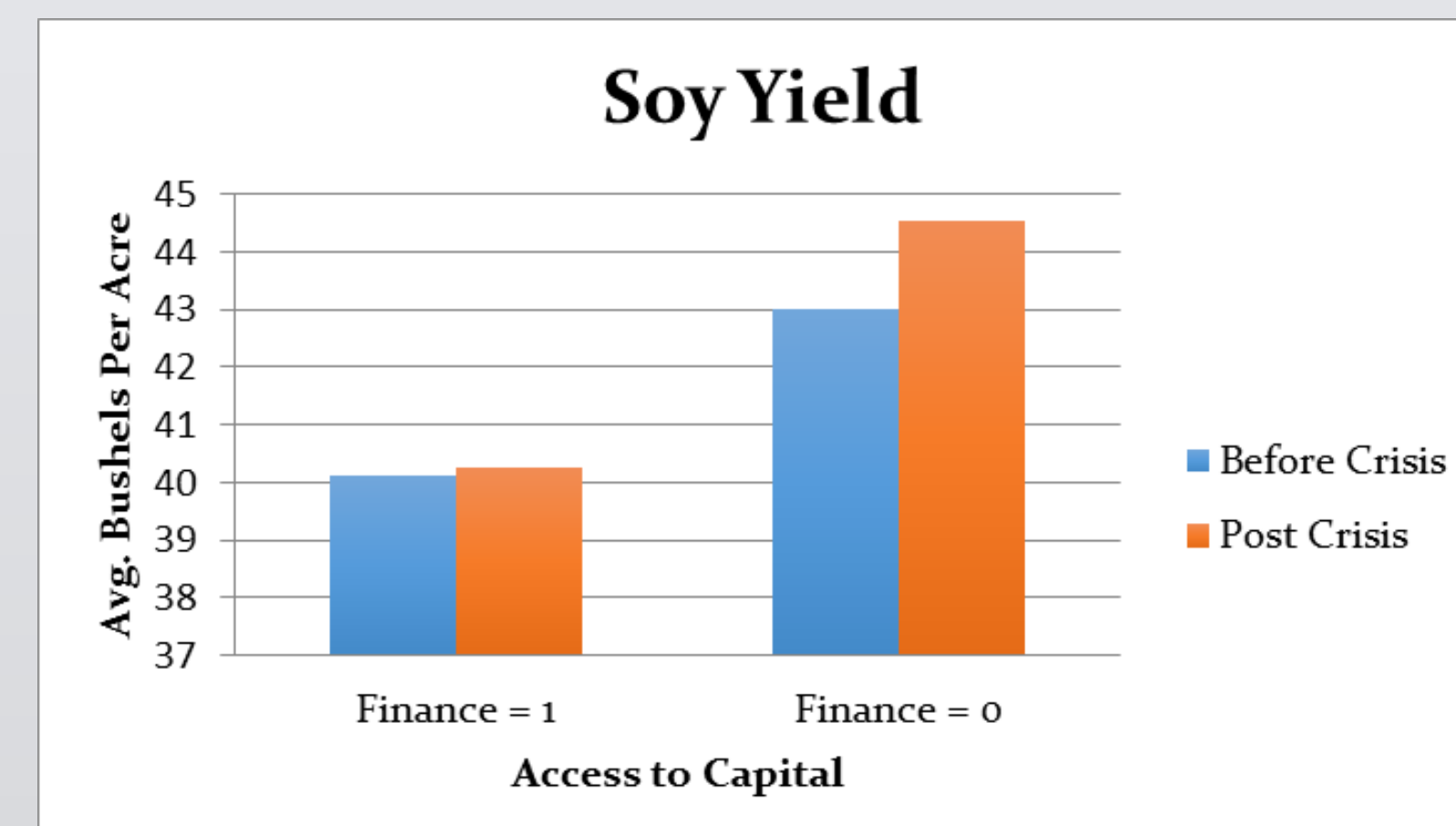
H1: There is a more negative association between productivity and access to finance in the post financial crisis period.

H2: The more negative association between productivity and access to finance in the post financial crisis period is moderated by TARP bank presence.

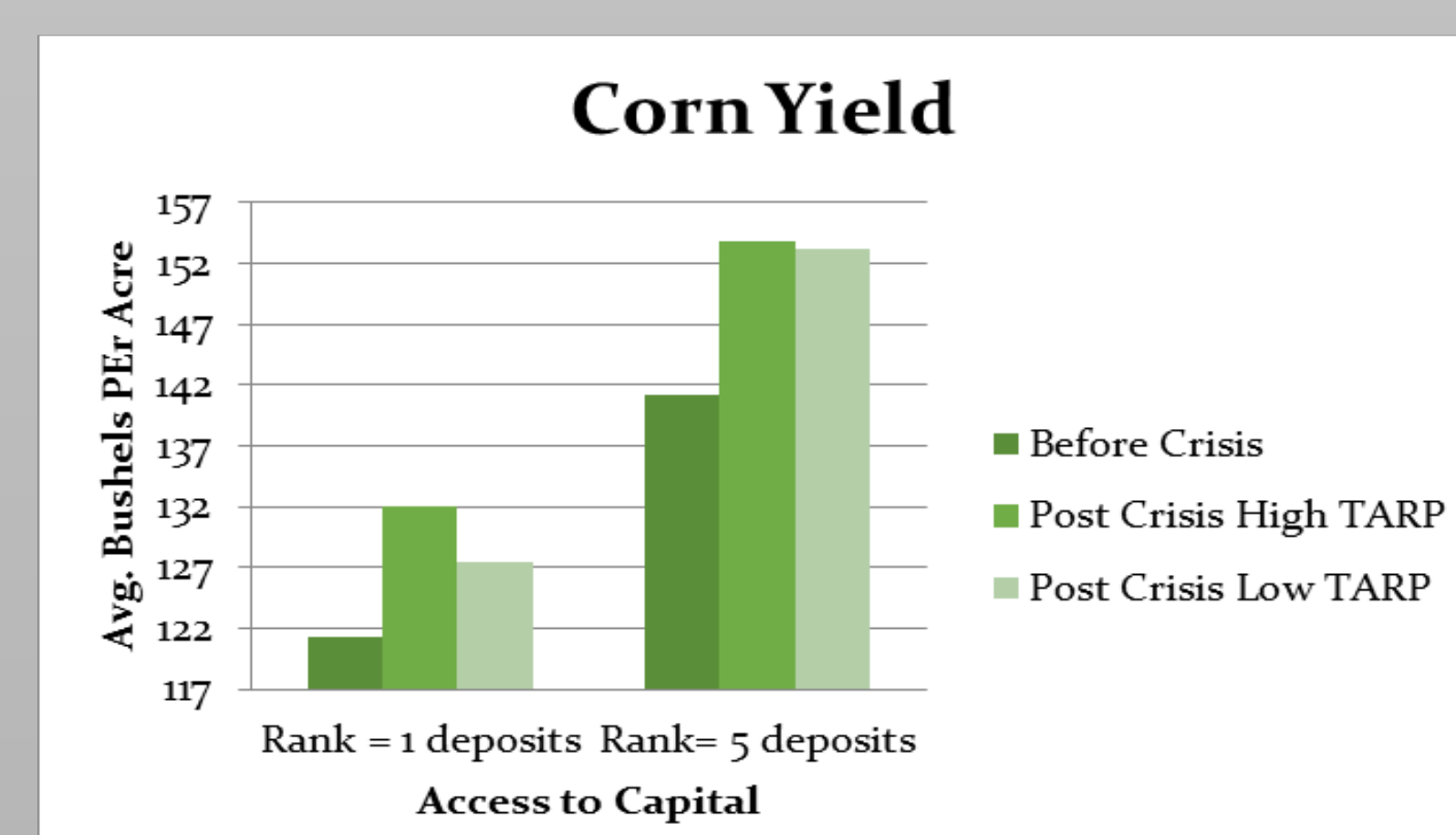
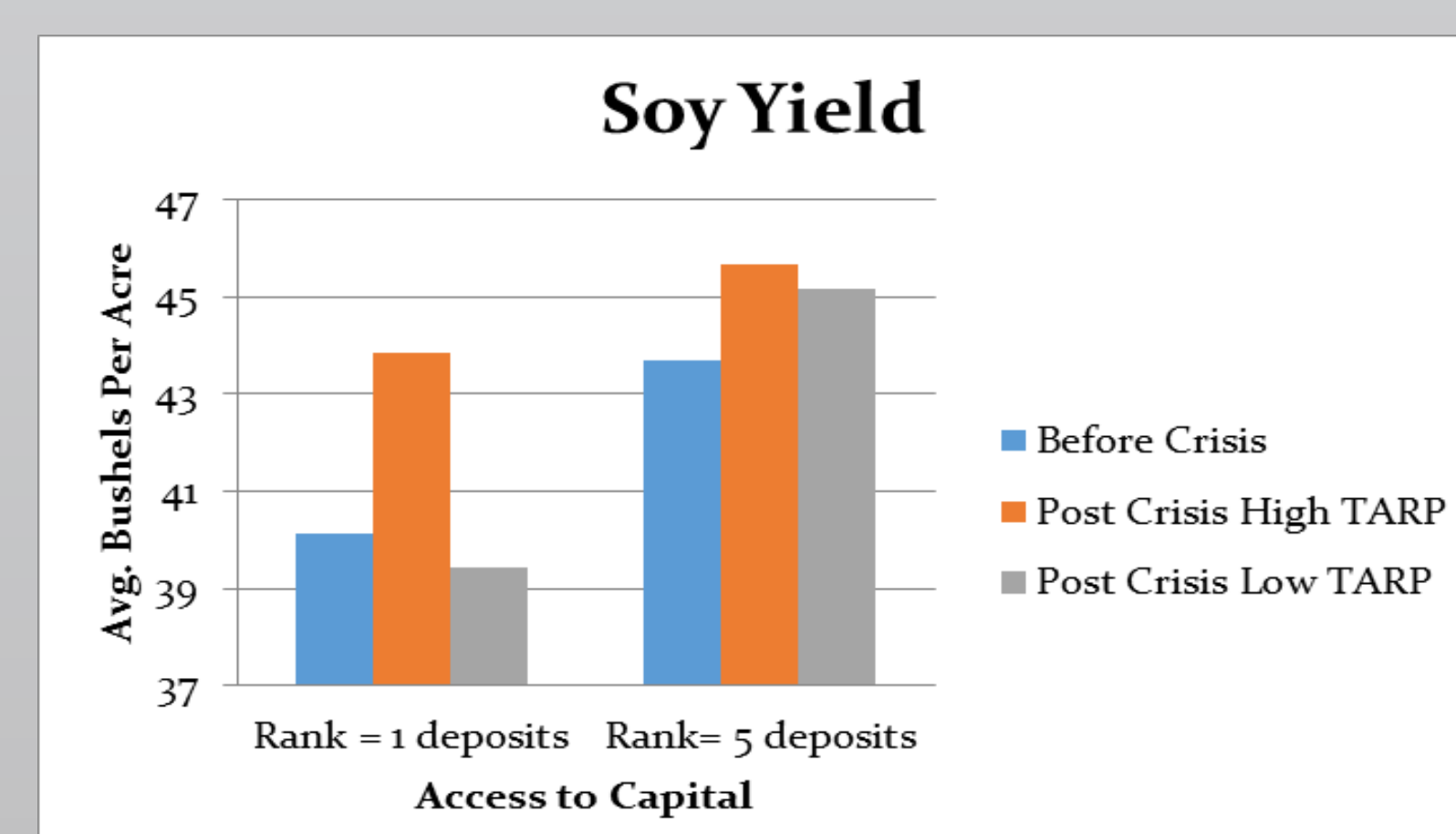
Models

$$(1) Yield_Corn_{it} = \alpha_0 + \beta_1 Finance_{it} + \beta_2 Crisis_Period_t + \beta_3 Finance * Crisis_Period_{it} + \beta_4 TARP_{it} + \beta_5 Finance * TARP_{it} + \beta_n X_{it} + \beta_k S + e_i$$
$$(2) Yield_Soy_{it} = \alpha_0 + \beta_1 Finance_{it} + \beta_2 Crisis_Period_t + \beta_3 Finance * Crisis_Period_{it} + \beta_4 TARP_{it} + \beta_5 Finance * TARP_{it} + \beta_n X_{it} + \beta_k S + e_i$$

Graphical Support: H1



Graphical Support: H2



Multivariate Results

Variables	Yield_Soy	Yield_Soy	Yield_Corn	Yield_Corn
Finance	-0.376 (-0.42)	0.349 (0.54)	-5.431* (-1.76)	-0.174 (-0.07)
Crisis_Period	2.823*** (5.92)	2.936*** (7.91)	11.35*** (7.66)	13.72*** (11.55)
Finance_Crisis_Period	-3.685*** (-5.05)	-3.617*** (-6.03)	-7.163** (-2.97)	-8.802*** (-4.19)
Finance_Crisis_Period_TARP	11.87*** (4.01)	5.477* (2.16)	7.839 (0.97)	-5.541 (-0.76)
unemployment	-0.739*** (-5.44)	-0.972*** (-8.06)	-1.997*** (-5.18)	-3.475*** (-8.23)
per_capita_income	-0.000234* (-1.67)	-0.000315** (-2.94)	-0.00128** (-2.82)	-0.00163*** (-3.53)
ln_population_density	1.569*** (5.91)	0.438* (2.21)	6.726*** (7.53)	3.002*** (4.22)
ln_precipitation	2.468*** (8.29)	3.652*** (11.07)	9.864*** (10.00)	6.610*** (5.72)
ln_gdd	-4.038** (-2.71)	-8.018*** (-8.28)	-27.71*** (-6.18)	-69.01*** (-23.11)
_cons	72.06*** (5.57)	108.2*** (13.05)	350.8*** (9.02)	720.2*** (27.01)
State Fixed Effects	No	Yes	No	Yes
R-Squared	0.0921	0.4297	0.1585	0.4168
N	5087	5087	5274	5274

Agriculture Bank Results

Variables	Yield_Soy Agro = 0	Yield_Soy Agro = 1	Yield_Corn Agro = 0	Yield_Corn Agro = 1
Finance	2.709 (1.53)	0.147 (0.13)	11.20* (2.20)	-4.213 (-1.03)
Crisis_Period	1.207* (1.67)	1.961** (3.07)	6.948** (3.20)	8.549*** (4.13)
Finance_Crisis_Period	-5.069*** (-3.23)	-2.555*** (-3.26)	-12.41 (-1.92)	-4.045 (-1.59)
Finance_Crisis_Period_TARP	5.776* (1.62)	16.72*** (4.77)	-6.668 (-0.75)	17.12 (1.79)
Control Variables	Yes	Yes	Yes	Yes
R-Squared	0.125	0.1878	0.1986	0.243
N	2394	2693	2461	2813

Data References

TARP	Transaction Report 10/01/10; http://www.treasury.gov/initiatives/financial-stability/reports/Pages/TARP-Investment-Program-Transaction-Reports.aspx
Bank Deposits	SOD (Summary of Deposit) Data; https://www2.fdic.gov/sod/index.asp
Corn & Soybean Yields	NASS: Natural Agricultural Statistics Service; http://quickstats.nass.usda.gov/
Precip./GDD	Weather Underground; http://www.wunderground.com/history/
Pop. Density	United States Census Bureau; http://quickfacts.census.gov/qfd/index.html
Unempl. Rate	Bureau of Labor Statistics; http://www.bls.gov/lau/#cntyaa
Per Capita Income	United States Census Bureau; http://quickfacts.census.gov/qfd/index.html

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Acknowledgments

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