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Trends in U.S. Equity Security Holdings since the 2008 Financial Crisis

Vassilios N. Gargalas*, Mario A. González-Corzo**

ABSTRACT

Financial asset ownership and investor participation in capital markets are influenced by various endogenous and exogenous factors. Understanding the distribution of financial asset holdings and its evolution over time is crucial for the formulation of a wide range of economic policies. In the case of households, asset allocation has a direct impact on exposure to economic shocks and retirement outcomes. Financial asset ownership, in particular, has implications for the implementation of fiscal and monetary policy and can influence the distribution of income and wealth.

Keywords: Capital markets, equities, financial assets, financial crisis, financial markets, stock ownership, stocks.

INTRODUCTION

Capital markets facilitate the transfer of surplus capital from lenders to borrowers, facilitate the process of price discovery, provide mechanisms for the exchange (or trade) of financial assets, reduce transaction costs and search costs, and contribute to economic growth and development through linkages with output markets (Rajan and Zingales, 1998; Mauro, 2000; Aspergis *et al.*, 2007; Obamuyi, 2013; Afroze *et al.*, 2015). By tapping on international and domestic financial sources, capital markets provide the funds and liquidity required to undertake long-term financial projects and make valuable contributions to economic growth (Levine, 1997; Levine and Zerbos, 1998; Carlin and Mayer, 2003). Capital markets have a positive influence on factor productivity and growth (Bolbol *et al.*, 2005) and contribute to economic growth by channeling capital to risk-taking entrepreneurs (Schumpeter, 1983).

In addition to the availability of accurate information, legal protections of investors' rights, and liquid secondary markets, well-functioning capital markets require the participation of rational, risk-averse, investors who base their investment decisions on expected cash flows and estimated tradeoffs between risk and return (D'Avolio *et al.*, 2001). Participants in capital markets include institutional investors and households. Investor participation in capital markets is influenced by various endogenous and exogenous factors.

According to Briker *et al.* (2019), understanding the distribution of financial asset holdings and its evolution over time is crucial for the formulation of a wide range of economic policies. In the case of households, asset allocation has a direct impact on exposure to economic shocks and retirement outcomes (Mian *et al.*, 2013; Jacobs *et al.*, 2020). Financial asset ownership, in particular, has implications for the implementation of fiscal and monetary policy (Benmelech *et al.*, 2017; Bricker *et al.*, 2018) and can influence the distribution of income and wealth (Piketty, 2014).

This paper uses data from the Federal Reserve Board's Survey of Consumer Finance (SCF) and from the Securities Industry and Financial Markets Association (SIFMA) 2020 Capital Markets Fact Book to highlight trends in equity security holdings and ownership by U.S. households and institutions since the 2008 financial crisis. Section one presents a review of the recent literature on the principal determinants of capital market participation and financial asset ownership amongst institutional investors and

households. Section two discusses the evolution of stock holdings and ownership by U.S households and institutions since the 2008 financial crisis. Section three presents the conclusions.

LITERATURE REVIEW

Participants in capital markets are classified as institutional investors or individual investors (mainly comprised of households). According to Celik and Isaksson (2014), institutional investors consist of organized legal entities that are intangible in nature. They include financial intermediaries who manage their own portfolios (i.e., through proprietary accounts and trading) and (or) invest their clients' funds (i.e., through agency transactions). Institutional investors can be classified as "traditional," "alternative," or "other" (Celik and Isaksson, 2014). The "traditional" category is comprised of pension funds, investment funds, and insurance companies (Celik and Isaksson, 2014). "Alternative" institutional investors include hedge funds, private equity funds, exchange-traded funds (ETFs), and sovereign wealth funds, while the "other" category refers to asset management firms that solely specialize in managing their clients' portfolios (Celik and Isaksson, 2014).

As financial intermediaries, institutional investors play an important role in capital markets. They transform financial assets that are less desirable into more widely-preferred assets (e.g. residential and commercial mortgages transformed into mortgage-backed securities (MBS); credit card receivables transformed into asset-backed securities (ABS)) (Fabozzi, Modigliani, and Jones, 2009). This process of financial transformation involves maturity intermediation, risk reduction through diversification, reducing transaction costs of contracting and information processing, and providing a payment mechanism for domestic and international clients (Fabozzi, Modigliani, and Jones, 2009).

There are several factors that influence the participation of institutional investors in capital markets. One body of literature suggests that firm size is an important determinant of institutional ownership; this is reflected by their preferences to own equity shares in relatively large, publicly traded, firms (Cready, 1994; Dahlquist and Robertsson, 2001; Falkenstein, 1996; Ferreira and Matos, 2008). Another important determinant of institutional financial asset ownership and participation in capital markets is corporate governance and ownership structure. Institutional investors tend to hold lower shares in firms with concentrated control (or ownership) rights and those are perceived to be poorly governed (i.e., firms with large shares of insider ownership) (Ferreira and Matos, 2008). Institutional investors also tend to favor companies with a consistent history of profitability and return on equity (ROE) (Del Guercio, 1996). Eakins, Stansell and Wertheim (1998) examined the effects of firm-specific factors (e.g., beta, leverage, return on assets (ROA), firm size, liquidity and other financial indicators) on institutional investors' demand for common stock and that institutional investors generally tend to avoid firms with extreme values of these indicators and other financial metrics.

In the case of households, several studies have found that participation in capital markets and ownership of financial assets are closely associated with financial status, saving behavior, life cycle stage, and general socioeconomic characteristics (Xiao 1995; Xiao and Anderson 1993; Yao, *et al.*, 2005). Financial asset ownership and participation in capital markets are also influenced by human

wealth (Gutter, 2000)¹ and risk tolerance (i.e., the willingness to take on additional risk or uncertainty in exchange for higher expected returns (Lee and Hanna, 1995). The relationship between human wealth and financial asset ownership depends to a large degree on the individual's location in the life cycle of consumption and savings. According to Bodie *et al.* (1992), younger individuals with relatively high quantities of human wealth may be able to construct riskier portfolios since investments in financial assets account for a smaller share of their total lifetime resources. As a person ages, human WEALTH decreases and financial assets tend to represent a higher percentage of their total resources. In this case, their portfolios should be exposed to lower levels of risk (i.e., they should hold lower quantities of risky assets) (Bodie, *et al.*, 1992).

Other studies show that household income tends to have a positive effect on financial asset ownership and participation in capital markets (Avery and Kennickell 1991; Chang 1994; Davis and Schumm 1987; Foster 1981; Hefferan 1982; Hira 1985; Motley 1970). In addition to income, household wealth (or net worth) is strongly associated with financial asset ownership and participation in capital markets (Hong *et al.*, 2004; Williams and Manning 1972).

For low-income households, Carney and Gale (2001) found patterns of wealth accumulation, manifested through financial asset and financial product ownership, to also be influenced by consumption needs, limited access to institutional saving mechanisms, and the correlation between low-income and observed determinants of wealth (e.g., educational attainment, home ownership status, etc.). Financial asset ownership among low-income households is also affected by government policies, including means-tested programs that impose strict asset limits, which act as a high implicit tax on asset accumulation (Carney and Gale, 2001).

EQUITY SECURITY HOLDINGS SINCE THE 2008-2009 FINANCIAL CRISIS

Table 1 shows the evolution of holdings of equities by U.S. households and institutions, measured by market value, during the 2005-2019 period.

Table 1. U.S. Holdings of Equities - Market Value

	<i>\$ Billions</i>			<i>% of Total</i>	
	Households	Institutions	Total	Households	Institutions
2005	8,088.1	13,444.8	21,532.9	37.6%	62.4%
2006	9,875.6	14,959.0	24,834.6	39.8%	60.2%
2007	9,759.4	16,441.7	26,201.1	37.2%	62.8%
2008	5,736.7	10,528.8	16,265.5	35.3%	64.7%
2009	7,211.3	13,439.4	20,650.7	34.9%	65.1%
2010	8,565.3	15,513.8	24,079.1	35.6%	64.4%
2011	8,126.0	15,209.9	23,335.9	34.8%	65.2%
2012	9,389.4	17,425.0	26,814.4	35.0%	65.0%
2013	12,164.1	22,261.1	34,425.2	35.3%	64.7%
2014	13,813.0	24,154.6	37,967.6	36.4%	63.6%

2015	13,688.0	23,444.3	37,132.3	36.9%	63.1%
2016	15,239.6	24,963.9	40,203.5	37.9%	62.1%
2017	18,111.1	29,944.7	48,055.8	37.7%	62.3%
2018	16,650.4	27,265.1	43,915.5	37.9%	62.1%
2019	20,607.7	34,016.0	54,623.7	37.7%	62.3%

Sources: The Federal Reserve - Financial Accounts of the United States; SIFMA, 2020.

As Table 1 indicates, the market value of equity security holdings in the U.S. grew from approximately \$21.5 trillion (T) in 2005 to \$54.6T in 2019, representing an increase of 153.7%. The market value of equities held by institutional investors increased by 153%, from \$13.4T in 2005 to \$34.1T in 2019. Similarly, the market value of equity securities held by U.S. households expanded from \$8.1T in 2005 to \$20.6T in 2019, representing an increase of 154.8% during this period.

The market value of the equity securities held by U.S. institutions and households was severely impacted by the 2008 financial crisis, which was primarily caused a rapid and massive contraction in housing values, the relaxation of lending practices – which contributed to the rapid expansion of high risk subprime lending – and monetary easing by the Federal Reserve (Moran, 2009). The crisis contributed to considerable losses on mortgages and mortgage-backed securities (MBS) held by individual and institutional investors. Between July 2007, at the onset of the financial crisis, and the third quarter of 2008, the nine largest depository institutions in the United States marked down their loans and other distressed (financial) assets by an estimated \$323 billion (Moran, 2009). By the end of 2008, U.S. households and institutions lost approximately \$7 trillion in shareholder value as a result of the crisis (Moran, 2009).

As can be observed in Table 1, between 2007 and 2008, the market value of U.S. holdings of equities fell by 37.9%, from \$26.2T to \$16.3T; the value of equity holdings by institutions declined by 36%, from \$16.4T to \$10.5T; and the value of equity holdings by U.S. households decreased by 41.2%, from \$9.8T to \$5.7T, during the same period. The market value of U.S. holdings of equity securities recovered considerably after the U.S. economy and equity markets emerged from the 2008 financial crisis (Table 1). Between 2008 and 2019, the total market value of U.S. equity holdings increased by 235.8%, from \$20.7T to \$54.6T. Similarly, the market value of equities held by institutions grew by 223.1%, from \$13.4T to \$34T, while the value of equity holdings by households increased by 259.2%, from \$7.2T to \$20.6T during the 2008 to 2019 period.

Direct and indirect ownership of financial assets is another indicator of investor participation in capital markets. In the case of households, direct ownership includes direct ownership of common and preferred stocks, holdings in individual retirement accounts (e.g., IRA, 401(k) plans, and other direct contribution retirement account), and other managed accounts (e.g., annuities, managed investment accounts, and trusts) (Bricker *et al.*, 2019). ²

Table 2. U.S Family Holding of Stock

	2001	2004	2007	2010	2013	2016	2019
Families with stock holdings, direct or indirect (% of all families)	53.0%	50.3%	53.2%	49.8%	48.8%	51.9%	52.6%
Median value of stock held among families (thousands of dollars)	50.5	44.6	42.0	34.2	39.3	42.5	40.0
Stock held by families (% of total family financial assets)	56.7%	51.3%	53.6%	46.8%	51.3%	53.2%	54.6%

Sources: The Federal Reserve, 2019 Survey of Consumer Finances; SIFMA, 2020; Survey of Consumer Finance (SCF), 2016, 2019.

Note: Includes both directly and indirectly held publicly traded stock (i.e., through mutual funds or retirement accounts).

As Table 2 indicates, between 2004 and 2019, the percentage of U.S. families with direct and indirect stock holdings increased from 50.3% to 52.6%, while the median value of their stock holdings fell from \$44,600 to \$40,000 during the same period. In 2004, stocks represented 51.3% of the total financial assets held by U.S. families, compared to 54.6% in 2019.

Table 3. U.S. Household Equity Ownership - Market Value

	\$ Billions
2005	13,860.2
2006	16,455.4
2007	16,915.8
2008	9,895.1
2009	12,829.0
2010	15,093.0
2011	14,318.7
2012	16,443.5
2013	21,323.2
2014	23,508.1
2015	23,232.3
2016	25,272.3
2017	30,090.6
2018	27,332.9
2019	33,905.6

Sources: The Federal Reserve, 2020, Financial Accounts of the United States; SIFMA, 2020.

Note: Household sector includes nonprofit organizations; includes both directly and indirectly held equities (i.e., through mutual funds).

As Table 3 shows, ownership of equity securities held by U.S. households, measured in market value, grew from \$13.9T in 2005 to \$33.9T in 2019, representing an increase of 144.6% during this period. As a result of the 2008 financial crisis, the value of equity securities held by U.S. households fell by 41.5%, from \$16.9T in 2007 to \$9.9T in 2008; however, between 2009 and 2019, the value of equity securities held by U.S. households increased by 242.6%, from \$12.8T to \$33.9T (Table 3).

Table 4 presents a broader picture of financial asset ownership by U.S. households during the 2005-2019 period by including other asset classes, such as: bank deposits, CDs, shares in mutual funds, U.S. Treasury, Agency, and Government Sponsored Enterprises (GSEs) securities, municipal bonds, money market funds, and corporate bonds.

Table 4. U.S. Household Liquid Financial Assets - Market Value
\$ Billions

	Equities	Bank Deposits & CDs	Mutual Fund Shares	U.S. Treasury, Agency, and GSE Securities	Municipal Bonds	Money Market Funds	Corporate Bonds	Total Liquid Financial Assets
2005	8,088.1	5,238.5	3,409.0	630.3	1,701.0	1,261.8	828.3	21,157.1
2006	9,875.6	5,711.4	4,010.3	342.2	1,760.7	1,465.9	869.2	24,035.3
2007	9,759.4	6,127.1	4,535.9	690.5	1,640.1	1,967.8	1,175.6	25,896.3
2008	5,736.7	6,643.6	2,917.7	1,388.9	1,524.4	2,285.0	1,322.0	21,818.2
2009	7,211.3	6,783.1	4,021.7	936.4	1,858.0	1,962.3	1,885.1	24,657.9
2010	8,565.3	6,920.2	4,701.7	1,264.2	1,912.7	1,657.5	2,002.3	27,023.9
2011	8,126.0	7,586.6	4,684.4	1,336.0	2,062.8	1,584.8	2,169.6	27,550.1
2012	9,389.4	8,045.1	5,549.7	1,399.6	2,021.2	1,589.9	2,248.9	30,243.8
2013	12,164.1	8,429.6	6,598.8	1,047.1	1,843.1	1,591.9	1,636.7	33,311.3
2014	13,813.0	8,981.9	7,065.1	1,003.6	1,939.4	1,568.0	1,752.2	36,123.2
2015	13,688.0	9,609.9	6,960.6	1,500.7	1,902.8	1,551.1	1,211.0	36,424.1
2016	15,239.6	10,195.7	7,306.5	1,483.9	1,879.5	1,558.4	1,058.9	38,722.5
2017	18,111.1	10,528.8	8,654.8	1,580.9	1,890.2	1,617.9	1,006.6	43,390.4
2018	16,650.4	10,815.5	7,961.9	2,336.6	1,861.0	1,799.0	943.0	42,367.4
2019	20,607.7	11,361.8	9,798.7	2,650.8	1,893.5	2,207.4	1,003.4	49,523.3

Sources: The Federal Reserve, 2020, Financial Accounts of the United States; SIFMA, 2020..

Note: Household sector includes nonprofit organizations; includes both directly and indirectly held equities (i.e., through mutual funds).

As Table 4 indicates, between 2005 and 2019, the market value of equity securities held by U.S. households increased by 154.8%, from \$8.1T to \$20.6T. The market value of the other liquid financial assets increased as follows during the same period:

- Bank deposits and CDs, 116.9%, from \$5.3T to \$9.9T;
- Mutual fund shares, 187.4%, from \$3.4T to \$9.8T;
- U.S. Treasury, Agency, and GSE Securities, 320.5%, from \$630.3 billion to \$2.7T;

- Municipal bonds, 11.3%, from \$1.7T to \$1.9T;
- Money market mutual funds, 74.9%, from \$1.3T to \$2.2T; and
- Corporate bonds, 21.1%, from \$828.2 billion to \$1.0T.

As can be observed in Table 4, the 2008 financial crisis disproportionately impacted the market values of equities and equity-based instruments. Between 2007 and 2008, the market value of equities and mutual fund shares held by U.S. households fell by 41.2%, from \$9.8T to \$5.7T, and by 35.7%, from \$4.5T to \$2.9T, respectively. Municipal bonds were the other asset class that experienced a decrease in market value (-7.9%) during the 2007-2008 period. The market value of municipal bonds held by U.S. households fell from \$1.6T in 2007 to \$1.5T in 2008.

Table 4 shows that the market values of less risky assets increased during the 2007-2008 period, as households experienced a “flight to safety” in response to the financial crisis. The most notable were U.S. Treasury, Agency, and GSE securities, which increased by 101.1%, from \$690.5 billion to \$1.4T; money market funds, which grew by 16.1%, from \$1.9T to \$2.3T; and bank deposits and CDs, which increased 8.4%, from \$6.1T to \$6.6T.

Equities and equity-based financial instruments also experienced the largest recovery, in terms of market value, after the 2008 financial crisis. Between 2008 and 2019, the market value of equity securities and mutual fund shares increased by 259.2%, from \$5.7T to \$20.6T, and 235.8%, from \$2.9T to \$9.8T, respectively. By contrast, during the same period, the market value of corporate bonds and money market funds held by U.S. households fell by 24.1%, from \$1.3T to \$1T, and 3.4%, from \$2.3T to \$2.2T, respectively (Table 4).

There have been notable changes in the types of assets held by U.S. households as a share of total financial assets since the 2008 financial crisis. Equities represented 26.3% of all financial assets held by U.S. households in 2008; this figure grew to 41.6% in 2019. Mutual fund shares represented 13.4% of total financial assets held by U.S. households in 2008; their share of total financial assets held increased to 19.9% in 2019.

Holdings of U.S Treasury, Agency, and GSE Securities fell from 6.4% of total financial assets held by households in the U.S. in 2008 to 5.4% in 2019. Similarly, municipal bonds, money market funds, and corporate bonds experienced notable declines in their share of total financial assets held by U.S. households during between 2008 and 2019. In 2008, they accounted for 7%, 10.5%, and 6.1%, respectively. By 2019, municipal bonds, represented just 3.8% of total financial assets held by U.S. households, while money market funds and corporate bonds accounted for 4.5% and 2%, respectively (Table 4).

CONCLUSIONS

The 2008 financial crisis had a profound impact on financial asset holdings and ownership by U.S. households and institutions, particularly equity securities. The market value of U.S. equity holdings fell by 38% between 2007 and 2008; equities held by households declined by 42% during this period, directly

impacting household consumption and wealth. Approximately 53% of U.S. households reported direct or indirect ownership of stocks in 2007 and equities accounted for 54% of the assets in their portfolios. In 2007, households held 37% of stocks in the U.S. measured by market value, while institutions held the remaining 63%. By 2010, the first year of economic recovery after the crisis, the percentage of households with direct or indirect stock holdings fell to 50% and equities accounted for 47% of the assets in their portfolios. Measured by market value, households held 36% of stocks in the U.S. in 2010, while institutions held the remaining 64%.

The period following the 2008 financial crisis shows a reversal of the declining trends in equity (and other financial asset) ownership, particularly in the case of households. Most financial assets, particularly stocks, experienced a notable recovery in market value during this period. Between 2008 and 2019, the market value stocks held by U.S households increased by 259% and the percentage of U.S. households with direct or indirect stock ownership increases from 50% in 2010 to 53% in 2019.

Improving economic conditions in the U.S. between 2016 and 2019 appear to have positively impacted stock ownership by households and their market value during this period. According to Bhutta, *et al.*, 2020), between 2016 and 2019, U.S. real gross domestic product (GDP) grew at an annual rate of 2.5% and the civilian unemployment rate decreased from 5% in 2016 to 3.8% in 2019. Median family income increased by 5% and the median family net worth increased 18% to \$121,000 during this period (Bhutta, *et al.*, 2020).³ In 2019, the homeownership rate increased to 64.9%, representing a reversal of the declining trend experienced during the 2004-2016 period, and the median (net) home value rose from \$106,000 in 2016 to \$120,000 in 2019 (Bhutta, *et al.*, 2020).

While the majority of families in the U.S. (98.7%) enjoy some form of financial asset ownership, and 53% of U.S. families own stocks, direct ownership of stock (or equity securities) remains relatively low at 15% (Bhutta, *et al.*, 2020). Implementing public policies to incentivize financial asset ownership, rather than penalizing households with onerous taxes on accumulated capital, passive income, asset transfers and other sources of wealth accumulation, is likely to benefit *all households*, including lower-income households (Lerman and McKernan, 2008).

There are several reasons for this. Financial assets facilitate future consumption, protect against unforeseen contingencies, contribute to higher levels of lifetime consumption, and improve the household's general welfare or well-being. Financial assets play an important role in long-term family (or household) wealth creation and help families deal with temporary cash emergencies. They also facilitate household investments in education (or human capital) and business formation and improve a household's economic security and stability over time (Lerman and McKernan, 2008).

ENDNOTES

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1. Human wealth is measured by estimating the present value of an individual's future (or expected) earnings, pension benefits, and Social Security payments. See Gutter (2000) for detailed information about methodologies to estimate human wealth.
2. See Bricker *et al.* (2009) for a detailed analysis of the composition of household portfolios in the U.S.
3. The economics literature shows that net worth generally increases with income, as families (or households) with higher incomes tend to have higher levels of savings and accumulated assets (Eggleston *et al.*, 2020). Net worth also tends to increase with age (Eggleston *et al.*, 2020).

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Belt and Road Initiative of China and its Global Economic Implications

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Abstract

China's Belt and Road Initiative (BRI) is the most ambitious project of 21st century which aims to enhance trade and cooperation by connecting three continents of the globe. It seeks to connect Asia with Africa and Europe via land and maritime networks with the aim of improving regional integration, increasing trade and stimulating economic growth. The BRI is an important mechanism for China's bilateral trade with BRI partners. BRI's size and scope gives it the potential to boost global domestic product (GDP) by as much as \$ 7.1 trillion by 2040 and reduce trade costs by up to 2.2 percent. The BRI arrangements would help China to gain access to BRI country markets. The BRI countries also seek Chinese loans for the BRI projects. Many European countries have joined BRI. China has invested heavily in infrastructure and strategic domains in Indian Ocean Littoral states. The China-Pakistan-Economic Corridor (CPEC) may be extended to Iran, Afghanistan and Central Asia. The BRI is a major policy initiative of the Chinese leadership to establish China a world power. This would greatly impact the global economy.

The paper seeks to analyse the impact of BRI on international trade and investment. Also its impact on infrastructure improvements on BRI and non-BRI countries' trade flows, growth and poverty.

The paper makes an assessment of BRI projects based on environment, community and economy as underlined in Triple Bottom Line or the 3 Ps – Profit, People and Planet. The paper also looks into the implications of BRI projects for the USA and India.

India's discomfort with BRI project stems from the fact that there is lack of transparency and domination by China and its potential allies. It has not given equal space to regional bodies. The China-Pakistan-Economic Corridor violates territorial integrity and sovereignty of India.

The BRI also challenges American economic interest. It may usher a new era of "extreme competition".

The paper looks into the alternative measures by G-7 countries, U.S.A. and regional coalitions to check Chinese hegemony through BRI.

JEL Code : F13, F15, F18.

Keywords : Belt and Road, Chinese Economy, Global Trade, BRI and US.

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Introduction

One of the most ambitious project of China is the 21st century is he Belt and Road Initiative (BRI). It aims to enhance trade and cooperation by connecting the three continents of the globe. In the past BRI has been referred to as ‘One Belt One Road’ (OBOR). The name was coined by China’s President, XI Jinping who drew inspiration from the concept of the Silk Road established during the Han Dynasty.

The BRI provides best protection to Chinese economic interests and enables them to go global. Its geo-strategic focus extends beyond China’s neighbourhood in Asia to embrace Africa, Europe and even Latin America.

While 140 countries have endorsed BRI as of January 2021, many countries are reluctant to sign bilateral BRI agreements .Some of the biggest economies including US, Japan and India are not involved in the initiative.

The BRI is a plan worth 1.5 trillion over ten year. It will have enormous economic, geo-political and investment implications for China.

As China has established itself in a position that it matters in the global order, its ambitions are reflected in the BRI. The impact of BRI in the growth of China’s economic powers and its implications for the other regions of the world needs to be closely scrutinized.

Regional Breakdown of BRI Partner Countries

Region	Number of Countries
Asia	43
Africa	40
Europe	26
Americas	19
Oceania	10

Source : China Power

The Objectives of BRI

The BRI is essentially an economic and transport corridor that would link Asia with Europe and Africa through multi-modal infrastructure including railways, ports, energy, grids. The overland Silk Road Economic Belt and the 21st Century Maritime Silk Road, lies at the core of the BRI. It is rooted in China’s desire to develop as both land and maritime power and ensure long term growth in an ever evolving global scenario.

The White Paper on the BRI in 2015 has mentioned five areas:

- Policy coordination
- Infrastructure connectivity
- Unimpeded trade
- Financial integration
- Connecting people



Six corridors have been identified as part of the BRI:

- China-Mongolia-Russia
- New Eurasian Land Bridge
- China-Central and West Asia
- Indo-China Peninsula
- China-Brazil
- Bangladesh-China-India-Myanmar

The BRI is expanding and evolving suggested by launching of projects like –

- The Polar Silk Road
- Digital Silk Road
- Greening BRI
- Educational Silk Road

China has already invested about USD 755 billion in BRI countries between 2013 and June 2020, thereby coming the second largest investing country in the world. The combined GDP of all BRI countries is estimated to be about USD 29 trillion. About 63% of the world's population lives within the borders of BRI countries. The beneficiary countries are likely to find the hard infrastructure as the most attractive element of the BRI. Likewise, the BRI provides China with an opportunity to use its considerable economic means to finance these infrastructure projects around the world.

The BRI has the potential to yield considerable economic and political gains for China. It would greatly help in the expansion of China's export markets. It also provides China with the opportunity to use its considerable economic might to finance the infrastructure projects of BRI.

During the Boao Forum in 2015, Chinese President Xi Jinping emphasized that “China will follow the principle of wide consultation, joint contributions, and shared benefits. The programs for development will be open and inclusive, not exclusive. They will be a real chorus comprising all countries along the routes, not a solo for China itself .To develop the Belt and Road is not replacing existing mechanisms or initiatives for regional cooperation. Much to the contrary we will build on the existing basis to help countries align their development strategies and form complementarity” (Jinping, 2015).

BRI and China

At the first Belt and Road Forum in Beijing in May 2017, President Xi Jinping said, “In Pursuing the Belt and Road Initiative, we should focus on the fundamental issue of development, release the growth potential of various countries and achieve economic integration and interconnected development and deliver benefits to all.”

Investing in large scale overseas infrastructure projects enables China's to export provinces its excess savings and put its SOEs to find sustained productive work. One aim of the BRI is to promote growth in China's west and north-eastern provinces in order to reduce economic inequality. If successfully implemented, the BRI could help re-orient a large part of the world economy towards China.

China is creating a global infrastructure to support its global interests with bases in Djibouti and Gwadar and port right in Sri Lanka and Maldives. However, China's assertiveness of disputed maritime territories in South-China Sea, its stand on Hong-Kong, Taiwan, its current phase of military modernization, indicative of its ambitions to establish itself as a global power. Such aggressive gestures are likely to hinder cooperation from many countries in its BRI programme.

Concerns for participating partner countries range from environmental costs to its sustainability to debt levels. The projects have faced hurdles as there have back lash in some countries while in some other countries China friendly governments have been voted out of power. The Covid-19 pandemic has also caused delay in completion of several projects.

China has largely extended its grip on the Indian subcontinent in recent years. It has invested heavily in infrastructures and strategic domains in Indian Ocean littoral states. It started the building of major overland routes through Myanmar and Pakistan to connect its mainland to local seas. The China-Pakistan-Economic Corridor (CPEC) might be extended to Iran, Afghanistan and Central Asia.

China is using its companies to fill in development gaps in the cash strapped countries of Balkan countries of Europe. In future some of these countries are likely to become EU member states. With infrastructures built by China in Balkans, China can ship its goods from Greece to West Balkans to EUs' Common market to over half a billion consumers. China has a new project Digital Silk Road to promote its biggest telecom company. All these projects are considered as economic boost to the Chinese economy.

BRI will help China address its manufacturing over capacity issues and increase exports. This should accelerate China's real GDP growth by at least 0.1 per cent annually over the next decade. The economic corridors through Pakistan and Central Asia would provide alternates routes to China to source commodities. Thus, reduce China's dependency on South China Sea routes for trade. Through BRI, China is also trying to project itself as the champion of free trade. The initiative extends China's foreign policy soft power and elevates its global status.

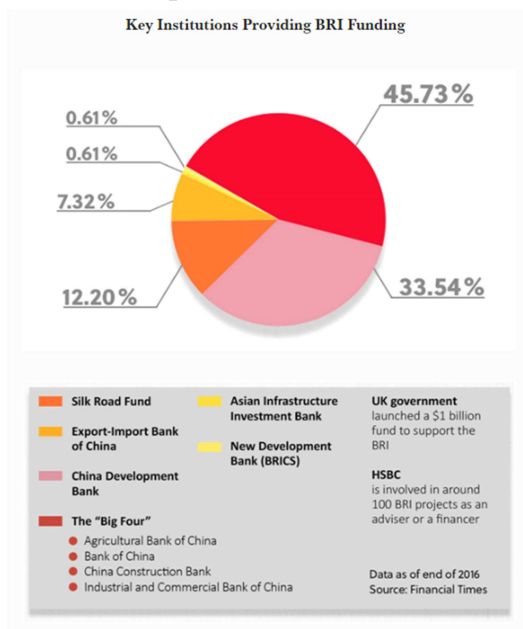
Funding of the BRI Projects

Most of the funding for belt and road project comes from China in the form of loans, Beijing has injected massive amount of capital into Chinese public financial institutions such as the Chinese Development Bank (CDB) and the Export-Import Bank of China (EXIM). These banks enjoy low borrowing costs, as their bonds are treated like Chinese government debt with low interest rates. This enables China's State owned enterprises (SOEs) to offer highly competitive bids for projects against foreign companies.

In 2016, the Chinese government allocated more USD 900 billion for the BRI project through organs like the Asian Infrastructure Investment Bank, the Silk Road Fund and China Development Bank.

The institutions taking initiative to fund the BRI projects are:

- Policy Bank
 - Agricultural Development Bank of China (ADBC)
 - China Development Bank (CDC)
 - Export-Import Bank of China (CHEXIM)
- State owned Banks
 - Agricultural Bank of China (ABC)
 - Bank of China (BOC)
 - Industrial and Commercial Bank of China (ICBC)
- State Owned Funds (Selection)
 - Asian Development Bank (ADB)
 - Asian Infrastructure Investment Bank (AIIB)
 - New Development Bank (NDB)



To fully fund the total BRI projects of estimated USD 4 to 8 trillion, diverse funding channels such as BRI bonds, private capital investment and public-private partnership (PPP) and State Owned Enterprise (SOE) investment will be critical.

China's BRI in Central Asia

The view of Halford Mackinder regarding Central Asia that 'he who controls the heartland controls the world' brings out the geopolitical importance of Central Asia. Central Asia has abundant energy and natural resources. Kazakhstan has large oil and coal reserves and significant amount of uranium deposits. Turkmenistan and Uzbekistan are known for gas reserves. Significant amount of hydroelectricity is produced by Kyrgyzstan, Uzbekistan has large reserves of gas, uranium and gold.

China has great interest in gaining access to the rich deposits of hydrocarbon resources in Central Asia. The rich energy resource of this region is of significant interest for a net energy importer like China. China's national oil company, China National Petroleum Corporation (CNPC), owns a significant stake in the Kashagan oil field in the Caspian Sea. China controls 20 per cent of Kazakh oil production (Hart, 2016). One of the most ambitious projects signed by China includes a 5,730 kilometers gas pipeline project between Turkmenistan-Uzbekistan-Kazakhstan and China is estimated at \$ 11 billion (Pradhan, 2019). The participation of majority of the Central Asia Countries in the BRI forums held in 2017 and 2019 shows the growing economic bonds between Central Asia and China.

India's Response to BRI

Indian response to the BRI has been to reject it based on sovereignty, procedural and leadership issues.

The China-Pakistan Economic Corridor (CPEC) runs through the contested territory of Gilgit-Baltistan in Pakistan Occupied Kashmir (POK). This violates the territorial integrity and sovereignty of India. The Chinese government is not sensitive to India's claims in POK. The India – USA Joint Statement, 'Prosperity through Partnership', released in 2017 called upon all nations to support the bolstering of regional economic connectivity through transparent development of infrastructure and the use of responsible debt financing practices while ensuring respect for sovereignty and territorial integrity, the rule of law and the environment.



Likely deployment of Chinese security personnel and troops from Pakistani army to protect projects along CPEC make the situation alarming for India. In the maritime domain China is set to increase its maritime corps at the strategic Gwadar Port and in military base of Djibouti. India's discomfort with BRI project stems from the fact that there is lack of transparency and domination by China and its potential allies. It has not given equal space to regional bodies. China's aggressive pursuit of the BRI in India's neighbouring states like Pakistan, Sri Lanka, Bangladesh, Nepal and the Maldives automatically raised suspicion in the mind of the India policy makers about Beijing's interest in using its economic power to promote its geopolitical designs in undermining India's security interests in the region.

China's BRI : Implication for the United States

United States is not formally part of BRI. But US is likely to have some benefits as BRI built infrastructure would accelerate global economic growth. The US companies able to sell equipment and material required in production, maintenance or operation of the infrastructure built in BRI makes it likely that the costs will considerably outweigh the benefits for the US.

BRI projects are tied to Chinese contractors and conducted through a largely closed bidding process which in most cases exclude firms from the United States and many other countries. In many BRI countries the United States will struggle to keep pace with China as Chinese firms rapidly gain market share and Chinese technical standards become the norm. US is skeptical of the initiative, as it is likely to harm to America's strategic interests abroad.

The strategic objectives are particularly apparent when it comes to countries where investment aligns with China strategy of developing access to port on key waterways. China's investments in strategically sensitive ports and its development of an overseas military base in Djibouti are of great concern to the United States. Impact of BRI on debt sustainability and existing international environmental and labour standards are also cause for concerns.

The American strategy to respond to BRI can take the shape of multilateral efforts or more forward to adopt programs aimed at "extreme competition" with China. Either strategy requires working proactively with allies and partners to regain the initiative on infrastructure programs and to pre-emptively make investments in areas of strategic importance for China.

The G-7 plan to counter China's BRI

China's geopolitical rivals have tried to put forth a viable alternative to China's BRI. The "Clean Green Initiative" unveiled at the G-7 meeting in Cornwall, England in June, 2021 appears to promise emerging nations a more sustainable alternative to BRI. While BRI is criticised for its opacity, 'Clean Green' is committed to provide transparency. Therefore, companies with existing international operations and robust compliance programs will have an advantage in securing early projects. 'Clean Green' projects should provide US and other multinational energy companies with significant opportunities to expand market share in developing countries. To make the 'Clean Green'

plan effective and attractive, the initiative needs to channelize funds for projects so that it does not remain a mere pledge.

Japanese also presents a viable model. Japan has funded billions worth of projects around Asia, winning a reputation for infrastructure quality that is generally far better than the Chinese. If G7 is to work with both the European Union and advanced Asian economies such as Australia and Japan it would be better placed as a coalition capable of funding new infrastructure.

Impact of BRI on the Global Economy

A study sponsored by the Chartered Institute of Building (CIOB) looks at the global economic impact of China's Belt and Road Initiative (BRI), has some key points in its reports –

- The BRI is likely to boost world GDP by 2040 by US \$ 7.1 trillion per annum. This raises world GDP by 4.2% of likely GDP in 2040.
- As many as 56 different countries are forecast to have their annual GDP in 2040 boosted by more than \$ 10 billion as a result of the project.
- By 2040, China would emerge as one of the strongest economic power.
- Even though US is not directly participating in the BRI but the sheer size of the US economy means that it gains from the indirect effects of world GDP being boosted.
- The next largest impact is in Russia, followed by Japan, Indonesia, Korea and the UK.
- It is likely that Western Europe, which has largely stayed aloof so far, will join in as the project develops momentum.
- The development of infrastructure both hard infrastructure and soft infrastructure is likely help boost national economic and also promote inter-regional cooperation co-operation.
- Infrastructures need to be maintained and updated to be functional. This would usher cooperation in economic development creating synergies between different economic sectors.
- The BRI reduces time distance independent of geographical distance by diverting supply chain flows from established routes to new routes via far less accessible regions.
- Improved trade movement and investment conditions along the BRI routes and development of value-sharing platform with the countries along the route would promote mutual benefits. It would also lead to technological progress in the host countries.
- Studies have shown that with the introduction of the BRI, the trade channel technology spill-over effects had an increasing trend and investment impacts have been more persistent.

Environmental effects of BRI

The ever expanding infrastructure projects of the BRI would have adverse effect of fragile ecosystems of many regions. The mega hydroelectricity project initiated by China along the Mekong

River would cause river flow changes, block fish migration, leading to a loss of livelihood for many communities dependent on the rivers for their livelihood.

The WWF has listed over 1,700 critical biodiversity spots and 265 threatened species that would be adversely affected by the BRI. Moreover, it could boost carbon emission by 0.3 per cent and up to 7 per cent in countries with low emission level.

To benefit from BRI, countries need to work together to strengthen environmental standards, adopt safety nets and improve labour mobility.

BRI and Poverty

The BRI could boost global trade by up to 6.2 per cent and up to 9.7 per cent for corridor economies. Foreign direct investment could rise by as much as 7.6 per cent. If implemented fully, the initiative could lift 32 million people out of moderate poverty – those who live on less than \$ 3.20 a day. At the same time, the cost of BRI related infrastructure could outweigh the potential gains. Available data suggests that 12 corridor economies are already facing critical debt crisis. (World Bank Press Release, No. 201, 2019).

Critics of BRI are of the opinion that it is an insidious plot by China for world domination where China strikes opaque deals and inflates the value of projects, leaving poorer countries in a “debt trap”. (China, 2018)

Concluding Remarks

- The world economy is experiencing a very strong but uneven recovery, with many emerging market and developing economies facing obstacles to vaccination. The global outlook remains uncertain with major risks due to pandemic and possibility of financial stress and large debt loads.
- A comprehensive set of policies would be required to promote a strong recovery that mitigates inequality and enhances environmental sustainability. China and participating BRI partners need to adopt deeper policy reforms that increase transparency, expand trade, improve debt sustainability and mitigate environmental, social and corruption risks.
- Moving towards international good practice such as open and transparent public procurement would increase the likelihood that BRI projects are allocated to the firms best placed to implement them.
- The countries such as US which have genuine concerns regarding BRI and Chinese strategic intentions need to collaborate and adopt strategies that puts pressure on China to improve its BRI practices and at the same time provide an effective alternative to BRI.
- The fact remains that China is growing economic power and its ambitious BRI is affecting the global trade, investment and finance in a significant way. China and its BRI partners need to address the environmental and social risks involved in such large projects. China should also address the genuine security concerns of others nations and show respect for democratic practices, human rights, sovereignty and territorial integrity of other nation-states.

- Fair play and mutual respect and desire for sustainable development should be the underlying principle for the community of nations and their desire to usher a world free from poverty and underdevelopment.

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Agricultural Transformations and Food Sovereignty in Cuba

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ABSTRACT

While the agricultural transformations introduced in Cuba since 2007, particularly the expansion of usufruct farming rights, have contributed to notable changes in land use and tenure, employment, and (non-sugar) agricultural output, production levels remain insufficient and Cuba depends on imported food and agricultural products to satisfy domestic demand. The Food Sovereignty and Nutrition Education Plan (FSNEP) introduced in 2020 represents an effort to address many of the challenges confronting Cuba's agricultural sector. However, more profound and far-reaching transformations are needed to achieve food sovereignty and realize the full productive potential of Cuban agriculture.

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INTRODUCTION

Even though the services sector, particularly tourism, has expanded significantly since the early 1990s, agriculture remains as one of the most economically and strategically important sectors of the Cuban economy. While it only accounts for approximately 4% of Gross Domestic Product (GDP), the agricultural sector remains Cuba's largest direct and indirect employer. Agriculture's real economic contributions are larger than what National Accounts figures suggest due to its strong linkages with other sectors and spillover effects (González-Corzo and Nova González, 2019). The agricultural sector is a key contributor to the Cuba's food supply, plays an important role in the nation's import substitution program, and is a leading supplier to the food processing and energy industries and (González-Corzo and Nova González, 2019; Nova González, 2018).

Despite its positive externalities and overall economic importance, Cuba's agricultural sector is affected by structural and operational limitations that hinder its potential growth and economic contributions (González-Corzo and Nova González, 2019). The most important include limitations on producers' autonomy to optimally allocate inputs and output, restrictions on the use of market-based mechanisms to determine input and output prices, relatively-high levels of state intervention, the absence of input markets, a fragmented and state-controlled supply chain, and restrictions on property rights and foreign investment (González-Corzo and Nova González, 2019). In recent years, Cuban agriculture has also been impacted by notable reductions in the area planted, declining agricultural and factor productivity, adverse climatic conditions (e.g., droughts, hurricanes, and soil erosion), and the effects of U.S. economic sanctions (González-Corzo and Nova González, 2019).

Since 2007 Cuba has introduced a series of agricultural transformations to incentivize production, increase efficiency, and substitute imports (González-Corzo, 2019). The most notable include increases in the prices paid by the state for selected agricultural products, administrative reorganization state ministries overseeing the agricultural sector, an updated agricultural tax regime, decentralization in the commercialization of selected agricultural products, the provision of agricultural micro-credits (by state-run banks), and, most importantly, the expansion of usufruct farming (Mesa-Lago and González-Corzo, 2020).

This paper examines the principal characteristics of Cuba's "Food Sovereignty and Nutrition Education Plan" (FSNEP) in the context of the agricultural transformations introduced since 2007, particularly the expansion of usufruct farming rights. Section 1 contains this Introduction. Section 2 presents a brief summary of the agricultural transformations introduced in Cuba since 2007. Section 3 analyzes the impact of these transformations on selected indicators such as: land tenure, agricultural employment, and non-sugar agricultural production. Section 4 discusses the core principles of food sovereignty and examines the main features of Cuba's "Food Sovereignty and Nutrition Education Plan" (FSNEP). Section 5 presents the conclusions.

AGRICULTURAL TRANSFORMATIONS SINCE 2007

To stimulate agricultural output and reduce its heavy dependency on imported food and agricultural products, the Cuban government has introduced a series of (calibrated) agricultural transformations since 2007. These include: (1) increases in the prices paid by the state for selected agricultural products, (2) administrative reorganization of the Ministries of Agriculture and Sugar, (3) decentralized commercialization for selected agricultural products (after fulfillment of state quotas by producers), (4) micro-credits for non-state agricultural producers, (5) the introduction of an updated agricultural tax system, and (6), most importantly, the expansion of usufruct farming rights (González - Corzo and Nova González, 2019).

The expansion of usufruct farming remains as the most important agricultural transformation that has taken place in Cuba since 2007, particularly in terms of its impact on agricultural production and the reallocation of labor. This process consists of the transfer of idle state-owned lands to natural persons and legal persons (i.e., cooperatives and state enterprises) in usufruct for a given time period in order to increase the non-state sector's share of total output and reduce the country's dependency on agricultural imports (Mesa-Lago, 2012; Mesa-Lago and González-Corzo, 2020).

EVOLUTION OF SELECTED AGRICULTURAL INDICATORS

The agricultural transformations introduced in Cuba since 2007, particularly the expansion of usufruct farming, have contributed to notable changes in land tenure and use, agricultural employment, and non-sugar agricultural output.

In the case of Cuba, land ownership and tenure rights are divided into the state and non-state sectors. The state sector consists of state-run agricultural enterprises and other state-owned entities, while the non-state sector includes agricultural cooperatives,¹ private farmers (*agricultores pequeños*), and usufructuaries (González-Corzo, 2019a). While the state sector owns the majority of the land in Cuba (86.2%) the non-state sector has tenure rights over most of the agricultural and cultivated surface (Panorama Uso de La Tierra, 2017).

Table 1: Cuba: Land Distribution Based on Tenure Form, 2007 and 2019

2007		State Sector		Non-State Sector		
Thousand Hectares	Total	Total	Total	UBPC	CPA	CCS and Private
Total Land Surface	10,988.6	6,088.9	4,899.7	2,804.8	692.8	1,402.1
Agricultural Surface	4,415.5	2,371.2	2,044.3	244.2	585.8	1,214.3
Cultivated Surface	2,988.5	694.2	2,294.3	1,189.9	305.3	799.1
Non-Cultivated Surface	3,631.0	1,677.0	1,954.0	1,258.3	280.5	415.2
Idle Land	1,232.8	627.2	605.6	465.4	73.4	66.8
2019						
Thousand Hectares	Total	Total	Total	UBPC	CPA	CCS and Private
Total Land Surface	10,988.4	5,984.8	5,003.6	1,726.1	592.3	2,684.2
Agricultural Surface	6,400.8	2,015.6	4,385.2	1,478.0	508.3	2,398.9
Cultivated Land	3,120.9	1,092.4	2,028.5	784.0	225.7	1,018.9
Non-Cultivated Surface	4,587.6	3,969.2	618.5	248.1	84.0	286.4
Idle Land	n.a	n.a	n.a	n.a.	n.a.	n.a

Source: Anuario Estadístico de Cuba, 2007, 2019; authors' calculations.

In 2007, the non-state sector held 46.3% and 76.8% of the agricultural surface and cultivated surface, respectively. By 2019, the non-state sector's share of the agricultural surface declined to 45.5% and its share of the cultivated surface fell to 68.5%. However, there have been major changes in the distribution of land (in terms of tenure) *within* the non-state sector since 2007. there were notable declines in the land held by the less autonomous Basic Units of Cooperative Production (UBPC) during the 2007-2019 period. Their share of the agricultural surface (in the non-state sector) fell from 57.2% to 34.5%. By contrast, the land held by the more efficient and autonomous Credit and Services Cooperatives (CCS) and private farmers increased significantly during the 2007-2019 period. In 2007, the CCS and private farmers held 28.6% of the agricultural surface in the non-state sector; this figure increased to 53.6% in 2019. Similarly, their share of the cultivated surface in the non-state sector increased from 34.8% in 2007 to 50.2% in 2019.

Non-sugar agricultural production has also been affected by changes in patterns of land use, particularly notable reductions in the agricultural surface and the area planted area since 2007. (Gonzalez-Corzo, 2019).

Table 2: Cuba: Land Use, Hectares (ha)				
	2007	2017	Chg.	% Chg.
Agricultural Surface	6,619,500	6,300,200	-319,300	-4.8%
Agricultural surface dedicated to permanent crops	1,796,600	1,454,200	-342,400	-19.1%
% of Agricultural Surface	27.1%	23.1%	-	-
Agricultural surface dedicated to temporary crops	1,187,200	1,151,100	-36,100	-3.0%
% of Agricultural Surface	17.9%	18.3%	-	-
Area Planted	2,888,000	2,765,000	-123,000	-4.3%
% of Agricultural Surface	43.6%	43.9%	-	-
Idle Land	1,232,800	917,300	-315,500	-25.6%
% of Agricultural Surface	18.6%	14.6%	-	-

Source: Anuario Estadístico de Cuba, 2007, 2019; authors' calculations.

Between 2007 and 2017, the agricultural surface (or land area dedicated to agricultural production) decreased by 4.8%, from 6,619,500 hectares (ha) to 6,300,200 ha. In 2007, a total of 1,796,600 ha (or 27.1% of the agricultural surface) were dedicated to permanent crops. By 2017 (the most recent year for which data is available), the area dedicated to permanent crops, which accounted for 23.1% of the agricultural surface, fell to 1,454,200 ha, representing a decrease of 19.1%. Similarly, the area dedicated to temporary crops, most of which play an important role in the traditional Cuban diet, decreased 3%, from 1,187,200 ha in 2007 to 1,151,100 ha in 2017. In 2007, 17.9% of the agricultural surface was dedicated to temporary crops; this figure increased to 18.3% in 2017.

The area planted (or cultivated surface) experienced similar trends during the 2007-2017. In 2007, there were 2,888,000 ha of planted or cultivated land in Cuba, representing 43.6% of the agricultural surface. By 2017, the country's area planted declined 3% to 2,795,000 ha, which represented 43.9% of its agricultural surface. This relatively low "utilization rate" (or ratio of the area planted to the agricultural surface), combined with the high percentages of idle land (as a percentage of the agricultural surface), represents one of the principal challenges confronting agricultural production in Cuba.

Access to labor (as a fundamental factor of production or input) is another important determinant of agricultural output (Taylor and Charlton, 2018). After land, labor often represents the largest input in agricultural production in the majority of developing countries around the world (Rey et al., 2016). Improved labor productivity, combined with greater efficiency in the use of other inputs, increases in (derived) demand for agricultural products, technological innovation, improvements in land management, and government policies, can also contribute to increases in agricultural output in the long-run (Doward, 2013).

Due to demographic factors (e.g. emigration, low birth rates, and the aging of the population), and economic factors (e.g. insufficient wages, unsatisfactory working conditions, etc.), total employment (in the Cuban economy) has declined in recent years (González-Corzo and Nova González, 2019).

Table 3: Cuba: Agricultural Employment and Wages, 2010 and 2019 Thousands				
	2010	2019	Chg.	% Chg.
Total Employment	4,984.5	4,585.2	-399.3	-8.0%
Agricultural Sector Employment	921.5	792.4	-129.1	-14.0%
Agricultural Cooperatives (CCS, CPA, and UBPC)	217.0	459.1	242.1	111.6%
Usufruct Farmers (after Decree-Law 300, 2012)	n.a	274.6	-	-
PERCENTAGES				
Ag. Employment % of Total Employment	18.5%	17.3%		
Coop. Empl. As % of Ag. Empl.	23.5%	57.9%		
Usufruct farmers as % of Ag. Empl.		34.7%		

Source: Anuario Estadístico de Cuba, 2007, 2019; authors' calculations.

There were 4,984,500 employed persons in Cuba in 2010. This figure declined by 8% to 4,585,200 persons in 2019. Total employment in the agricultural sector increased by 14%, from 921,500 to 792,400, during the same period. By contrast, employment in agricultural cooperatives increased by 111.6%, from 217,000 in 2010 to 459,100 in 2019.² Agricultural workers represented 18.5% of total employment in 2010; this figure declined to 17.3% in 2019. In 2010, workers in agricultural cooperatives accounted for 23.5% of total employment in the agricultural sector, compared to 57.9% in 2019 and usufruct farmers represented 34.7% of agricultural employment in that year.

The agricultural transformations implemented since 2007 have directly impacted agricultural production in Cuba.

Table 4: Cuba: NonSugar Agricultural Production, Selected Crops and Products.				
	<i>Metric Tons (Mt), Except when</i>			
	2007	2019	Chg.	% Chg.
Roots and tubers	1,115.8	1,671.5	555.7	49.8%
Potatoes	136.4	103.5	-32.9	-24.1%
Plantains	805.2	998.6	193.4	24.0%
Vegetables	1,690.7	2,097.1	406.4	24.0%
Rice	205.2	391.8	186.6	90.9%
Beans	97.2	120.5	23.3	24.0%
Citrus Fruits	503.1	67.1	-436.0	-86.7%
Other Fruits	783.8	681.1	-102.7	-13.1%
Corn	368.8	247.5	-121.3	-32.9%
Cow Milk	485.1	512.0	26.9	5.5%
Eggs (MMU)	2,351.7	2,528.5	176.8	7.5%

Source: Anuario Estadístico de Cuba, 2007, 2019; authors' calculations.

Between 2007 and 2019, physical output increased in five (5) of the non-sugar crop categories shown in Table 4. These were: roots and tubers (49.8%), plantains (24%), vegetables (24%), rice (90.9%), and beans (24%). During the same period, production levels declined in the following non-

sugar crops: potatoes (-24.1%), citrus fruits (-86.7%), other fruits (-13.1%), and corn (-32.9%). It is worth noting that while production levels increased in five (5) of the non-sugar crop categories shown in Table 4, most of which are important components of the traditional Cuban diet, output levels are insufficient to satisfy domestic demand. Cuba's external sector dependency is illustrated by the growth of its imported food and agricultural products and their share of total merchandise imports in recent years.

The total value of Cuba's imported food and agricultural products increased by 27.7%, from approximately 1.5 USD in 2009 to 1.9 billion USD in 2019 (AEC, 2009; 2019). Food and agricultural products represented 16.8% of total merchandise imports in 2009; this figure grew to 19.3% in 2019 (AEC, 2009; 2019). Between 2009 and 2019, imports increased significantly for the following food and agricultural products: meat and meat products (51.4%), seafood (58.8%), cereals and grains (10.3%), sugar and honey (21.8%), animal feedstock (288.7%), and prepared food products and diverse foodstuffs (73.9%), underscoring Cuba's relatively-high external sector dependency (AEC, 2009; 2019).

CUBA'S FOOD AND NUTRITIONAL SOVEREIGNTY PLAN

The origins of the concept of "food sovereignty" can be traced back to the 1996 World Food Summit (Jones et al., 2015; Windfurh and Jonsén, 2005). The global food security movement emerged as a response to the international trade regime and policies supported by the World Trade Organization (WTO), the International Monetary Fund (IMF), and the World Bank (WB) (Tambi, et al., 2014). Food sovereignty is defined as follows:

Food sovereignty is the right of individuals, communities, and countries to define their own agricultural, labor, fishing, food and land policies, which are ecologically, socially and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies (Jones et al., 2015; Windfurh and Jonsén, 2005).

The following seven (7) principles of food sovereignty emerged from 2007 Forum for Food Sovereignty (Windfurh and Jonsén, 2005):

- 1) Food as a basic human right: All people must have access to safe, nutritious, and culturally appropriate food in sufficient quantity and quality to sustain a healthy life with full human dignity. Access to food should be declared a constitutional right and each nation should guarantee the development of the primary sector (engaged in food production) to ensure the realization of food as a basic human right.
- 2) Agrarian reform: Agrarian reform is necessary to give landless people, particularly women, ownership and control of the land they work and to return territories to indigenous people. The right to land must be free of all types of discrimination (i.e., discrimination based on gender, race, religion, social strata, or ideological beliefs or affiliation). The land should belong to those work it.
- 3) Protection of natural resources: Food sovereignty requires the sustainable use and protection of natural resources, particularly land, water, livestock, and seeds. The people who work the land must have the right to practice sustainable natural resources management and conserve biodiversity.

- 4) Reorganization of food trade: Food should be primarily considered as a source of nutrition and only secondly as an item of trade. Production for domestic consumption and national self-sufficiency (in food production) should be the principal goals of agricultural policies. Domestic food and agricultural production and domestic prices should not be displaced by imports.
- 5) Ending the globalization of hunger: Multilateral institutions (e.g., the IMF, World Bank, and WTO), corporate control of agriculture, and speculative capital undermine food sovereignty. Therefore, regulation and taxation of speculative capital, as well as a strictly-enforced Code of Conduct for transnational corporations (TNCs) are required to ensure food sovereignty.
- 6) Social peace: Food sovereignty requires policies to prevent food from being used as a weapon, reduce the oppression and marginalization of ethnic minorities and indigenous populations, combat the displacement of smallholder farmers, and fight discrimination and racism.
- 7) Democratic control: Agricultural policies to support food sovereignty require the direct input and participation of smallholder farmers, particularly rural women, at all levels of the decision making process. To establish greater democratic control, international organizations such as the United Nations (UN) will have to adopt greater levels of democratization, popular participation (particularly by underrepresented groups such as racial minorities and indigenous peoples), and transparency.

To increase agricultural production and to reduce the country's dependency on imported food and agricultural products, the Cuban government introduced the Food Sovereignty and Nutrition Education Plan (FSNEP) in 2020. Cuba's Food Sovereignty and Nutrition Education Plan (FSNEP) includes four (4) core elements. The first component of Cuba's Food Sovereignty and Nutrition Education Plan (FSNEP) is the implementation of a "sustainable production model" focused on environmental sustainability and efforts to mitigate the impact of climatic events (Ministerio de la Agricultura, 2020). Cuba's food sovereignty program incorporates the focus on sustainability adopted by the global food sovereignty movement by emphasizing sustainable food production systems and efforts to mitigate the effects of global warming (Ministerio de la Agricultura, 2020). Important elements include: the incorporation of local value chains into the production process, efficient (and more rational) resource utilization, and productive diversity (Ministerio de la Agricultura, 2020).

The second element consists of transformations in the production and marketing of food and agricultural products. It emphasizes the need to improve national and local production mechanisms and distribution channels related to food production and distribution (Ministerio de la Agricultura, 2020). The policy measures announced during the 8th Congress of the Cuban Communist Party on April 2021 highlight the need to transform agricultural production processes and commercialization as an essential requirement to achieve food sovereignty. The most significant include: (1) reductions in electricity utility and water utility rates paid by agricultural producers, (2) reduced prices for domestically-produced animal feed and agricultural bio-products, (3) the introduction of more flexible policies to improve the commercialization of selected agricultural products (i.e., beef and milk), (4) targeted procurement price increases for fresh milk, (5) dissolution of non-performing cooperatives (i.e., cooperatives with significant losses and inability to recover production levels), and (6) promotion of local development projects between various types of agricultural producers (i.e., individual farmers, cooperatives, and usufructuaries) to increase agricultural output (Ministerio de la Agricultura, 2020).

The third element of Cuba's Food Sovereignty and Nutrition Education Plan (FSNEP) focuses on improving access to resources, promoting their efficient use along agricultural production and supply

chains, and reducing the country's dependence on imported food (Ministerio de la Agricultura, 2020). Its principal strategies include: local management and conservation of essential resources, integration of scientific concepts and practical applications, implementation of local systems of agricultural extension and technological innovation, incentives to revert rural migration and maintain labor stability in the agricultural sector, improved access to diverse sources of financing, and national and international cooperation and collaboration (Ministerio de la Agricultura, 2020).

Finally, the fourth element focuses on the implementation at the national level of nutritional educational programs to promote food and nutritional sovereignty, while the FSNP is synchronized with the “Guidelines” (or Guidelines) and the National Development Plan 2030 (Ministerio de la Agricultura, 2020). This element also focuses on promoting gender-based and inter-generational nutritional education (Ministerio de la Agricultura, 2020).

CONCLUSIONS

Since the collapse of the Socialist Bloc and the disintegration of the Soviet Union in the early 1990s, Cuban agriculture has been severely affected by declining production levels, low labor productivity, worker absenteeism, insufficient administrative coordination, excessive bureaucratic controls and growing undercapitalization caused by the scarcity of investments and the receipt of foreign currency (Hagelberg, 2010; Nova González and González-Corzo, 2019; Spadoni, 2014). Cuban agriculture has also been affected by adverse weather conditions, in particular several devastating hurricanes and severe droughts (2006-2008) and the effects of the US trade embargo (Spadoni, 2014).

To address these challenges, and to restructure its strategically important agricultural sector, Cuba has implemented a series of agricultural transformations since 2007 (González-Corzo, 2019). These include moderate price reforms, administrative consolidation and restructuring, an updated tax system, greater decentralization in the commercialization of selected agricultural products, micro credits for non-state agricultural producers, and expanded usufruct farming rights (Mesa-Lago and González-Corzo, 2020).

These agricultural transformations have resulted in notable increases the land managed (or held) by the non-state sector and changes in agricultural employment and non-sugar agricultural production (González-Corzo and Nova González, 2019). However, despite some advances, as (Nova González, 2018) indicates, there are three (3) unresolved fundamental aspects that have significantly limited the impact of the agrarian transformations that began in 2007: the need to achieve the complete (or full) “realization of the property,” (2) the need to recognize and accept the existence of the market and its complementary role (in relation to the plan) in the coordination of economic activities, and the absence of a systemic approach throughout the agricultural production-consumption cycle to strengthen linkages across important sectors of the economy. These issues remain unsolved and must be addressed urgently (González-Corzo, 2019). ■

At the present time, agricultural production remains insufficient and Cuba relies on food and agricultural imports to satisfy domestic demand (González-Corzo, 2019a). To improve food security and sovereignty, the Cuban government announced a comprehensive “Food Sovereignty and Nutrition Education Plan” (FSNEP) in 2020. This plan is an important addition to the “Economic Guidelines” approved in 2011 in an effort to transform key sectors of the Cuban economy.

The recently announced and approved Food Sovereignty and Nutrition Education Plan (FSNEP) represents an attempt to address many of the problems facing Cuba's economically and strategically important agricultural sector. However, to achieve sustainable levels of progress, more profound, and far-reaching, structural reforms are needed, such as: 1) achieving the “realization of property” (or ownership), 2) greater openness of agriculture to foreign direct investment (FDI), 3) the development and expansion of competitive input markets, 4) greater autonomy to hire labor and invest capital, 5) the decentralization of most prices to be determined at the territory (or municipality) level, and 6) unleashing the productive potential of agricultural producers by allowing the market to function as a complementary coordination mechanism across all sectors of the Cuban economy.

ENDNOTES

1 Cuba's agricultural cooperatives include: (1) Cooperativas de Producción Agropecuaria (CPA) (Agricultural Production Cooperatives), (2) Cooperativas de Créditos y Servicios (CCS) (Credit and Services Cooperatives), and (3) Unidades Básicas de Producción Cooperativa (UBPC) (Basic Units of Agricultural Production).

2 Changes in the methodology used to compile total employment figures (e.g., adding a portion of independent and usufruct farmers to the total figures) explains the notable increases in employment in agricultural cooperatives reported between 2010 and 2019.

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Impact of Activism on Operating Performance

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ABSTRACT

Activist investors have been playing a major role in corporate restructuring. Opponents of such activism argue that activist campaigns are profitable in the short-term but produce no long-term value enhancement. We investigate the effects of shareholder activism employed by individuals, partnerships, investment advisors, institutional investors, private equity companies, and asset management companies, on corporate performance. We propose that the acquired interest enables activists to significantly influence firm management, including operational and strategic decision making. Using a propensity matched sample, we find that firms targeted by activist campaigns experience deteriorating operating performance up to two years after the intervention.

INTRODUCTION

A central claim in debates on corporate governance has been that activist investors produce an adverse effect on a long-term firm performance and stock value. Shareholder activism occurs when certain stockholders are dissatisfied with how management runs the company. It may take the form of a full-blown proxy fight or a meeting with management to discuss concerns and propose changes. Activism has its roots in 1942 when shareholders are granted the opportunity to submit resolutions. The 1980s saw a surge in corporate raiders, where shareholders' objective was to gain control of the firm and replace the "poorly performing" management. Investors purchased large blocks of shares in a firm with the intention of extracting a return on investment in a short period of time. Individual investors used their influence to force the firm to make policy decisions, such as for example, raise leverage and dividend payout, reduce R&D and capital expenditure, increase share buyback. When these initiatives led to share price increases, investors sold shares. This was considered to be a problem of a myopic short-sighted investor.

Long-term institutional activism emerged in the 1990s. Pension funds, mutual funds, and labor unions, instead of individual investors, started to influence companies' management to change operating strategies with the intention to hold on to the shares for a number of years and gain positive return. Pension funds and mutual funds have to adhere to regulatory and structural constraints, such as limits on

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the percentage of portfolio they can invest in any given firm, and restrictions on shorting and investing in illiquid assets.

In the late 1990s and early 2000s hedge funds became very active in influencing companies in which they had an ownership stake. Hedge funds did not target operationally distressed firms and did not seek control of the target. A typical target is relatively small with a large cash position and low growth. Hedge funds do not have to adhere to regulatory restrictions, which allows them to engage in margin trading and in derivatives trading.

Our study contributes to the literature of shareholder activism and corporate performance. First, we extend prior studies by investigating the effects of shareholder activism employed by different types of investors defined in this article as of individuals, partnerships, investment advisors, institutional investors, private equity companies, and asset management companies, on corporate performance. Second, we study whether the purpose for the activist campaign, as disclosed in Item 4 of Schedule 13D, impacts the target's future performance. We propose that activists are able to significantly influence firm management, including operational and strategic decision making, thereby effecting greater transparency, and improving operational performance. Third, to select matching firms with similar ex-ante characteristics as the firm experiencing an activist intervention, we utilize a propensity score matching approach. The set of matching variables used is extensive as it includes not only pre-activism performance (as in deHaan et al., 2019) but also firm size, age, capital expenditures, business risk, financial risk, and research and development expenditures.

The tests are conducted using a sample of 7,563 activist campaigns on 4,178 firms for the period of 1997-2020. Unlike previous studies, our analysis indicates that operating performance of targeted firms deteriorates after the activist intervention. The results are statistically significant at the one percent level for the entire sample for the first two years following an intervention, and insignificant for years three to five after intervention. When the type of a filer is included in the tests, we find that the results are statistically significant only when the filer is identified as an investment advisor or individual. The stated purpose for an intervention has no effect on the corporate operating performance following an activist intervention.

LITERATURE REVIEW

Studies that investigated the effects of activism on firm performance have yielded conflicting results in terms of measures used, type of activism employed, the type of activist involved, and the duration of the effects of institutional changes made by management. Earlier literature focused on the impact of insider ownership on shareholder returns and firm value (Shleifer and Vishny (1986), Morck, Shleifer, and Vishny (1988)). Karpoff (2001), Romano (2001), Gillan and Starks (2007) and Yermack (2010) investigate the impact of institutional investors and pension funds activity on firm performance, and they report no statistically significant benefits to shareholders after the filing of the Schedule 13D. The limited success of

institutional investor activism may not be surprising since institutional monitoring does face many regulatory and structural constraints.

While earlier studies focus on the effects of institutional investors and public pension plans activism, more recent papers analyze hedge fund activism and its impact on the companies in which they invest. Publicly stated objectives of hedge fund activism fall into five categories: general undervaluation and maximization of shareholder value, capital structure, business strategy, sale of a target company, and governance. Becht et al. (2017) and Strine (2017) observe what they call “wolfpacks” of hedge funds working together to facilitate the outcomes imposed on target firms.

Brav, Jiang, Portnoy, and Thomas (2008) examine 236 hedge funds with 1,032 activist events for the period of 2001 to 2006 and find a 7%-8% increase in the average abnormal returns after the Schedule 13D filing by a hedge fund. Klein and Zur (2009) investigate hostile activist campaigns by hedge funds and other private investors and find differences in target companies for these two groups.

Clifford and Lindsey (2011) examine the compensation practices of blockholders to determine the success of monitoring their targets and find that active blockholding leads to increased corporate performance as measured by industry-adjusted return on assets. Edmans, Fang, and Zur (2013) study the effect of liquidity on the type of activism and its effectiveness. Similar to Brav et al. (2009) and Clifford and Lindsey (2011), the results indicate that hedge funds target smaller firms with low market to book value, higher sales growth, higher leverage and more analyst coverage.

Bebchuk, Brav and Jiang (2015) examine the effect of hedge fund activism on the long-run firm performance. The authors utilize the same database as that of Brav et al. (2008) to study hedge fund interventions for the period of 1994-2007 and demonstrate that activist campaigns are followed by long-term improvements in firm performance and positive abnormal returns that persist up to 5 years after the intervention.

Cremers, Giambona, Sepe and Wang (2018) argue that the Bebchuk et al. (2015) study suffers from selection bias since activists target firms with lagging performance compared to their peers. The authors replicate the Bebchuk et al. (2015) study, use a nearest neighbor matching approach (Abadie and Imbens, 2006) to create a control sample, and find that the value of firms targeted by activists improves by less than those not subject to activism. This result indicates that hedge fund activism alone cannot account for an increase in firm value following an activist campaign.

DeHaan, Larcker and McClure (2019) examine the long-term effects of activist hedge funds campaigns. They find that equal-weighted mean returns are significantly positive at 5.4%, and the cumulative pre- and post-activism equal-weighted mean one-year and two-year returns are significantly positive at 6.8% and 5.9% respectively. However, the smallest 20% of the target companies contribute the most to positive returns, and the largest 80% show positive but insignificant returns within three months of activism.

Brick, Chen, Kang, and Kim (2020) attribute improved operating performance of targeted firms to hedge fund human capital. In particular, the authors use hedge fund acquisitions from 1994 to 2011

(same data set as that of Brav, Jiang and Kim (2015)) and demonstrate that firms targeted by hedge funds with experience in a particular industry have higher abnormal returns than peer firms.

Wang and Wu (2020) extend the work by Brav et al (2008) and demonstrate that hedge fund activism is triggered by negative media coverage of a target. Firms with news related to bad acquisitions, lower earnings, and/or lower credit ratings, have a higher probability of being targeted by a hedge fund. The authors also show increased short-term and long-term (three year) shareholder returns of the targeted firms.

Francis, Hasan, Shen, and Wu (2021) find that hedge funds are more likely to target companies with female CEOs even after controlling for “glass cliff”, discrimination bias, and hedge fund characteristics. The authors attribute the results to the female CEOs’ inclination to cooperate with activist hedge funds rather than engage in costly litigation. The authors also demonstrate that female CEO-led targets exhibit greater market and operational performance up to five years after the event.

HYPOTHESES, DATA, and METHODOLOGY

This study extends the literature on shareholder activism in that we investigate its effect on long-term firm performance for up to five years after the intervention (Brav et al. (2008), Clifford and Lindsey (2011), deHaan et al. (2019)). The hypothesis tested is that activist interventions lead to improved long-term corporate performance. We focus on activist campaigns by different types of filers as reported by the investors’ Schedule 13D filings with the Security and Exchange Commission (SEC) during the 1997-2020 period, and firm performance of the targets for three years before and five years after the interventions. It extends the work by Bebchuk et al. (2015) as we explore the effect of activism by different types of investors and different purposes as listed in Item 4 of schedule 13D. Moreover, to select matching firms with similar ex-ante characteristics as the firm experiencing an activist intervention, we utilize a propensity score matching approach. The set of matching variables used is extensive as it includes not only pre-activism performance (as in deHaan et al., 2019) but also firm size, age, capital expenditures, business risk, financial risk, and research and development expenditures.

The independent variables are Type of Filer (individuals, partnerships, investment advisors, institutional investors, private equity companies, and asset management companies); Purpose of campaign (Investment, Business Strategy, Governance); Percent Ownership by activist; Debt to Total Capitalization; Degree of Operating Leverage (proxy for business risk); R&D and Capital Expenditures; Ln (Total Assets); Age of company.

The data on corporate financial information are obtained from COMPUSTAT. Corporate performance and firm profitability are measured by ROA and by Tobin’s Q, which we expect to improve after the activist intervention. Annual values of ROA and Tobin’s Q are calculated for individual firms for up to three years before the activist intervention and up to five years after the intervention. Each firm’s industry is identified by a four-digit SIC code and the average ROA and Tobin’s Q is calculated for each industry. This step facilitates the calculation of industry adjusted ROA and Tobin’s Q that are used in the

regression analysis. Industry adjusted performance metrics are appropriate since we want to examine the firms' performance in relation to their peers. A positive ROA or Tobin's Q indicates that the firm outperforms its peers. The size of firms, measured by Ln (*total assets*), and *Age* of firms are used as control variables.

Activist filings can be found in the Securities and Exchange Commission (SEC) Schedule 13D. The SEC Act (1934) requires that investors acquiring more than 5% of a company's stock file the 13D form with the SEC to report the share purchase and other information, including purpose of the purchase, within 10 days after the transaction. Filers must also disclose their identities in Item 2, and the reason for acquiring the shares in Item 4 of Schedule 13D - "Purpose of Transaction". This is known as active activism, where an investor intends to exercise control of the target, and needs to disclose the mechanism to the SEC. The filer is coded by type (item 2 of Schedule 13D) as individual, partnership, investment advisor, institutional investor, private equity company or an asset management company. The date of filing is also recorded. Targets are identified and their SIC 4-digit numbers are noted.

Table 1 describes our sample of target firms and their propensity matched control sample. We were able to collect all the needed variables for 4,178 firms targeted by activist investors during the 1997-2019 period. Tobin's Q is calculated using Chung and Pruitt (1994) approach. Return on assets (ROA) is operating income before depreciation scaled by the lagged book value of assets. R&D is the research and Development expense scaled by the lagged book value of assets. Book leverage is calculated as the sum of short-term debt and long-term debt divided by the book value of assets. Operating leverage is costs of goods sold plus selling, general, and administrative expenses scaled by the total assets. The average Tobin's Q of activist intervention targets is 1.36, mean Return on Assets is 3.43% and average Total Assets are \$1,964 million.

The purpose of propensity score matching is selecting a firm with similar ex-ante firm characteristics as the firm experiencing an activist intervention. In essence, the model estimates the probability that a given firm with certain characteristics is experiencing an intervention (Dehejia and Wahba, 2002). The probability is composed using lagged Total Assets, Tobin's Q, Capital Expenditures, R&D Expense, among other firm characteristics within a probit regression framework. Preliminary results show that firms without activist campaign had a higher mean Tobin's Q of 1.44, a higher mean ROA of 5.04%, and higher Total Assets of \$3,778 million. This shows that activist targets are on average smaller in size and less profitable before the intervention than their propensity matched peer firms.

Table 1: Summary Statistics at the Firm-Year Level for Intervention Targets and their matched controls

Variable	Mean		Standard deviation	
	Targets of activist interventions	Matched firms without interventions	Targets of activist interventions	Matched firms without interventions
Tobin's Q	1.36	1.44	1.24	1.32
Return on Assets	0.034	0.0504	0.274	0.274

Assets – Total	1,964	3,778	27,048	56,214
Log of Total Assets	5.34	5.44	1.99	2.23
R&D Expense	0.0435	0.0446	0.0928	0.097
Capital Expenditures	74.5	87.1	441	448
Company Age	19	19.6	14.3	14.9
Book Leverage	0.242	0.229	0.225	0.219
Operating Leverage	1.06	1.05	0.82	0.835

Number of observations is 4,178 firms with activist intervention, and 3,579 firms without activist intervention.

We further compare the matched and intervention samples by running t-tests on the differences in the mean values of several variables of interest. Only Tobin's Q and Return on Assets are statistically different for intervention and control firms. The average Tobin's Q of firms with interventions is lower than that of control sample, and the same result holds for ROA. This finding implies lower profitability of target firms which comes as no surprise since activists tend to target underperforming companies.

Next we examine activist campaigns. There are 7,583 activist interventions in our sample. Some target firms have multiple campaigns over the years since the target firm sample is smaller, 4,178 firms. The purpose of activist intervention is coded as governance, business strategy or investment. In our sample 8.01% of filers reported governance as the purpose of intervention, 40.3% reported business strategy as its purpose, and 69.8% reported that intervention was due to investment reasons. These categories overlap since some activists declared more than one purpose of their intervention. Activist campaigns differ by category of filer. The largest percentage of Schedules 13D was filed by individuals (28.6%), followed by partnerships (14.3%), corporations (13.5%), and other filers. The source of activist campaign funding also differ. The largest reported sources are working capital of the filer (17.1%), funds of the affiliate of the filer (9.03%), bank capital (0.608%), and funds of the subject company that is being acquired (0.502%).

It is worth exploring the sample for multiple interventions either by the same filer, or for the same target. The total maximum number of campaigns for the same target was 22 interventions, with the mean of 3.45 total campaigns. The total number of interventions per the same acquirer has the mean of 3.4 campaigns and the maximum of 39 campaigns. The number of interventions per target is on average 1.66 campaigns per year, with the maximum number of 22 campaigns. Finally, the number of interventions per target done by the same acquirer is 1.33 campaigns on average, with a maximum of 10 campaigns.

Table 2 reports the results from the panel regression using the propensity matched score approach. To control for the possibility that regression measurement errors are industry specific, results based on industry-adjusted Tobin's Q are also reported. Industry-adjusted Tobin's Q is calculated by adjusting a firm's Tobin's Q with the yearly median of all the companies available in the same industry as the sample firm. Our findings indicate that firms targeted by activist investors have lower performance as indicated by the negative coefficient for Tobin's Q and industry-adjusted TQ for up to two years after the intervention contrary to the findings by Bebchuk et al (2015) and deHaan et al (2019). The results are statistically significant at the 1% level for one year after the intervention and at 5% for two years after the activist

campaign. When ROA and industry-adjusted ROA are used as measures of operating performance, the results are statistically significant only for one year after the intervention.

Table 2: Panel regressions for propensity score matched sample

Variable	Tobin's Q	Industry-adjusted Tobin's Q	Return on Assets	Industry-adjusted ROA
(t-3) before intervention	-0.0163	-0.0332	0.00730	0.00677
(t-2)	-0.105***	-0.0834**	-0.0027	-0.0051
(t-1)	-0.0299	-0.0456	-0.0132	-0.0113
Intervention year	-0.0671**	-0.0777***	-0.0069	-0.0059
(t+1)	-0.109***	-0.0979***	-0.0208***	-0.0231***
(t+2)	-0.111**	-0.102**	-0.0021	-0.0096
(t+3)	-0.0746	-0.0488	-0.0106	-0.0038
(t+4)	-0.0231	-0.0225	0.0043	-0.0027
(t+5) after intervention	0.0400	0.0344	0.0230**	0.0156
Control variables	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Adjusted R-square	0.204	0.059	0.256	0.155
Observations	7101	7101	7270	7270

*significant at 10% level, ** significant at 5% level, *** significant at 1% level.

Table 3 reports findings from Difference-in-Difference approach. The results indicate that the purpose of intervention has no impact on the target's performance following the activist intervention. When the type of a filer is taken into consideration, there is a positive and statistically significant difference in the performance of the companies that experience activist interventions only when the filer is identified as an investment advisor or individual. This result indicates that the profitability (TQ) of firms targeted by an individual activist or an activist investment advisor decreased to a lesser degree than the profitability of firms without activist campaigns. The results are insignificant for all other types of filers.

Table 3: Difference-in-difference regressions by activist category

Dif-in-Dif intervals	Intervention by Individual Activist	Matched control	Difference	Intervention by Investment Advisor	Matched control	Difference
d1	0.018	-0.036	-0.054	0.070	-0.026	-0.096
d2	0.068	-0.062	-0.130*	0.171	-0.035	-0.205*
d3	0.097	-0.055	-0.152**	0.285	-0.027	-0.312**
d4	0.085	-0.118	-0.203***	0.237	-0.076	-0.312**
d5	0.092	-0.102	-0.194**	0.336	-0.067	-0.403**

*significant at 10% level, ** significant at 5% level, *** significant at 1% level.

dn is the difference in difference between $(\Delta TQ_{t+n})_{\text{control}} - (\Delta TQ_{t+n})_{\text{intervention}}$

Number of observations is 2951

CONCLUSIONS

This paper studies the long-term operating performance of firms following activist interventions. Unlike other studies that find no evidence of increased operating performance, our results indicate that there is a deterioration in corporate performance particularly when the activist is identified as an investment advisor or an individual. This result can be considered as evidence of harmful effects of shareholder activism. Our findings may be due to the sample used that includes large size target firms. It may also be the case that management of target firms may be forced to devote corporate resources to fighting activists thus impact negatively the operational performance of their firm.

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Recreational Marijuana and the NYS Economy

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ABSTRACT

Thirty-six states in the U.S., including New York allow the use of medical marijuana. In 2021, New York enacted a recreational marijuana law joining 18 other states including its immediate neighbors of New Jersey, Connecticut, Massachusetts, and Vermont, that allow for the production and sale of marijuana for recreational use. New York's law differs from many other states as it not only focuses upon the creation of a legal market for the production and sale of cannabis for personal use but has embedded redressing social inequities that have arisen from over 50 years of law enforcement actions for the illicit sale and use of marijuana. The establishment of a fully functioning legal recreational market will not be in place until late 2022. This paper evaluates the potential market response to legal recreational marijuana in New York state using the medical marijuana market. The analysis presented is very preliminary and the results are inconclusive.

Keywords: Cannabis, Recreational Marijuana Markets, Medical Marijuana, New York State

1. Introduction

With the passage of Marijuana Regulation and Taxation Act (MRTA), New York joined the ranks of 18 other states to legalize the sale, possession, and use of recreational marijuana. Chapter 7A of the law includes three important components, 1) the creation of the Office of Cannabis Management to establish a regulatory framework and oversee the production, processing and sale of marijuana, 2) a licensing mechanism including minimum mandatory orientation and training for licensing operators of retail, processing, and production facilities as well as individuals interested in working in the field, and 3) a mandate to address individual and community social justice and inequities that arose from the enforcement of drug (marijuana related) laws (Senate Bill 854-A). These last two items set NY's recreational marijuana market apart from most other states in the country.

Underlying the passage of this law are the notion that legalization and the establishment of a legal marijuana market will generate a new source of tax revenues for the state, address social inequities from previous law enforcement policies, and to reallocate spending from drug enforcement (related to marijuana) to community redevelopment. A functioning legal recreational market will likely not be in place until late 2022 or early 2023. This paper provides a preliminary economic evaluation of NY's recreational marijuana market.

Marijuana is still classified as a Schedule 1 drug at the federal level. Thus, its cultivation, processing and distribution is bounded by state borders potentially impacting scale production. While allowing existing medical marijuana firms, many of which are vertically integrated, limited expansion into the recreational market (production, processing, and distribution), new entrants will be restricted to operating in only one area.

Legal recreational marijuana markets in the US are a relatively new phenomena, and this is reflected in the economic literature as well. The academic community has taken greater notice as more states have legalized cannabis for personal use, and a number of papers have been published since 2016. This paper

adds to this new area of inquiry with the focus upon the potential impact of legal recreational marijuana on New York's economy. The analysis presented is exploratory.

This paper is organized as follows. Section 2 presents an overview of some of the most recent literature in this area and in particular focuses upon individual state experiences. In Section 3, a preliminary analysis of New York's potential marijuana market is presented. Section 4 presents an exploratory econometric model and forecast for New York focusing upon the potential impact on sales taxes, and in particular revenues from alcohol related taxes. The conclusions of this study are presented in Section 5.

2. RECENT LITERATURE ON LEGALIZATION AND STATE EXPERIENCES

The criminalization of marijuana over the twentieth century did not result in its disappearance from the social and economic landscape. As Miron and Zwibel (1991) pointed out in their study of alcohol consumption following the imposition of Prohibition, while there was an initial 70 percent decline in consumption, by the early 1930s, alcohol consumption approached pre-Prohibition levels. The number of individuals arrested for marijuana possession in NY City ranged between 1038 in 1991 to a high of 51,589 in 2011, and as of 2017 stood at 18,241 (Bond et al, 2019).

A study by the NY State Department of Health (2018) estimated that the illegal marijuana market in the state ranged from \$1.74 to \$3.5 billion annually and estimated that 1.27 million individuals in the state (8.5 percent of the state's population) used marijuana (pages 16-20). Using these figures to drive revenue projections for a legal recreational marijuana market and depending on specific tax rates used, they estimated annual potential tax revenues between \$297 million to \$677 million. Similarly, a recent study by Parrot and Mattingly (2021) estimated that recreational marijuana would generate approximately \$276 annually in state and local taxes and 40 to 50 thousand new jobs.

The potential gain to state revenues from legalized recreational marijuana served as one of the underlying arguments used to pass the legislation in NY. The NY Department of Health's study cited above delves into this possibility. However recent analysis by Miller and Seo (2021) and Amlung and MacKillop (2019) suggests that there may be substantial substitutability between marijuana and other products. Miller and Seo's analysis found that legal cannabis could potentially reduce sales tax revenues for alcohol by as much as 15 percent.

Amlung and MacKillop (2019) focused upon substitution between legal and illegal markets for recreational marijuana and suggested that pricing policy for legal markets was an important factor. Sen and Wyonch (2018) also found that the persistence of illegal markets for marijuana in Canada impacted legal sales and tax revenue. Irvine and Light (2020) using a nested demand model of Canadian cannabis markets found substantial substitution effects leading to a reallocation of excise tax revenues across alcohol, marijuana, and tobacco. They also found that personal and corporate tax revenues would increase from new employment and corporate profits generated in the recreational cannabis industry.

It is evident from the literature, that tax policies and the appropriate level of taxation on recreational cannabis are an important consideration for the market. Jacobi and Sovinsky (2016), using a utility framework to analyze legalization, found that excise taxes will impact both legal use of recreational cannabis as well as purchases from the illicit market. Mace et al (2020) focused their analysis on market structure and tax incidence, found significant deadweight loss and that consumers paid more of the sales and excise taxes than sellers did. They additionally suggested that there were significant cross-border sales issues with neighboring states that had legalized recreational marijuana. Khan et al's (2020) analysis focuses directly on the cross-border sales issue (Washington and Oregon) and the taxes leveled on marijuana sales. Using several techniques including difference-in-differences, they concluded that cross-border differences in prices, especially sales and excise tax differences, led consumers to cross the state border to make their purchases at lower prices.

The legalization of recreational marijuana in the state is not without controversy. Towns and cities in the state can opt out of allowing retail dispensaries within their borders (which also limits the ability of that community to share in the potential revenues from legal cannabis sales). Communities though cannot ban the use of cannabis within their borders, just retail sales. The cannabis literature does reflect some of the potential issues that may arise from the location of dispensaries including potential impacts on home prices and sales, crime, and level of personal usage. Ambrose et al (2021) found that individual proximity to a dispensary resulted in increased usage and intensity of use of marijuana. Using data from the Behavioral Risk Factor Surveillance System for the state of Washington, their study used travel time as the relevant measure of distance in a linear probability model to analyze the issue.

In their analysis of Denver's housing market, Burkhardt and Flyr (2019) found a positive relationship between new home prices and retail dispensary locations. Burkhardt and Goemans (2019), using a difference-in-differences methodology, found that violent crime and drug-related crime rates fell in above median income neighborhoods where a dispensary was located. Along a similar vein, Prestemon et al (2019) found a reduction in the illegal marijuana growing in national forests in states with legal recreational marijuana. A recent study by Meehan et al (2020) of both Colorado and Washington found evidence that legal marijuana led to an increase in the number of tourist visits, with a more pronounced impact on Colorado. Zambiasi and Stillman (2020), using a synthetic control model, found evidence that legal marijuana was a positive amenity attracting in-migration to Colorado.

3. THE NEW YORK MARKET

The Cannabis Control Board, which oversees the Office of Cannabis Management is still in the process of establishing the formal structure for licensure of processors, dispensaries, and other firms in the industry still need to be established. While the law limits the amount of vertical integration between growers (cultivation), processors, distribution, and dispensaries, it does carve out one important exception – a microbusiness license (similar to what exists with microbreweries) and a small business cooperative license that will allow small businesses/licensees to operate in all stages of the market. This license is

directly aimed at promoting social equity. Other forms of licenses available include: adult use cultivator, adult use processor, adult use distributor, adult use retail, NY delivery license, and NY nursery license.

The licensing structure is meant to reduce entry barriers and promote greater social equity. Forty percent of the tax revenues generated by the sale of marijuana in the state are reserved to the NY State Community Reinvestment Fund for use in revitalization in areas most affected by the past enforcement of NY drug (cannabis) laws.

As was the case with the state's previous medical marijuana law, villages, towns, and cities do have the ability to limit retail sales in their communities within the first 9 months of the MRTA's passage. Communities opting out may subsequently change their status and allow retail dispensaries or microbusiness/business cooperatives. Marijuana in the state will be taxed through several methods. At the retail level, there is a 13 percent tax rate, with the state receiving 9 percent and the additional 4 percent directed towards the community in which the sale took place. Communities that have opted out, will not receive the additional 4 percent of the tax. Distributors and producers will pay a per milligram tax per unit based upon type of product and the potency of the product.

Under NY's medical marijuana program, there are currently 10 firms licensed to both produce and dispense marijuana in the state with a total of 40 dispensaries in operation. Their operations are dispersed geographically across the state, with 21 located in New York City and surrounding counties (12 in New York City, 6 on Long Island, 2 in Westchester, and 1 in Rockland). Medical marijuana in the state is dispensed in several different forms including tinctures, vape solutions, THC capsules, and ground flower (metered and in pods). Once the recreational market is underway in 2022, it will be available in smokeable forms.

A 2018 study conducted by the NY State Department of Health concluded that a regulated recreational market would provide quality control in the cannabis market, reducing the risk from consumption by users. It also suggested that adult cannabis usage would not increase substantially, nor would underage use. The report also concludes that the legal market will create jobs in the state. Studies conducted by Barcott and Whitney (2019), and Barcott, Whitney and Bailey (2021) found that the number of individuals employed in the legal medical and recreational cannabis industry in the US grew by over 100,000, from 211 thousand to 321 thousand full-time equivalent. Schulz (2019), using an Input-Output model, forecast potential employment gains in New York state of approximately 30,000 people.

4. ANALYSIS OF THE CANNABIS MARKET

The analysis presented below is preliminary in nature. Studies such as Miller and Seo (2021) analyze the potential impact of recreational marijuana on alcohol and tobacco tax revenues in Washington State. While they, as well as Irvine and Light (2020) in their study of Canadian cannabis markets, suggest that there is some significant substitution between marijuana and these other products, the experience in other states has not been fully evaluated. While the recreational market has not begun yet, I apply a simple ARMA regression model on NY alcohol tax revenues and the medical marijuana market.

Medical marijuana sales first began in the state in January 2016 and have grown steadily with the increase in the number of dispensaries. Between the first quarter of 2016 to the second quarter of 2018, the number of registered medical marijuana patients grew from 2871 to 98101. It has continued to grow reaching 114,947 in 2020 and 151,355 by May of 2021. While many of these registered users likely have serious medical conditions, hence prompting them and their licensed healthcare providers to prescribe marijuana for their use, their use of cannabis may also have impacted their consumption of alcohol.

Using state data on alcohol related taxes, personal income, and a national price index, we estimate the following equation:

$$ATR = C + \beta_1(NY_PI) + \beta_2(NY_Med) + \varepsilon \quad (1)$$

where, ATR is equal to Alcohol tax revenues for NY State, quarterly (1-1994 to 1-2021), NY_PI is Personal Income for New York, quarterly (1-1994 to 1-2021), and NY_Med is a dummy variable for legal medical marijuana sales, taking a value of 0 until 4-2015, and 1 from 1-2016. The equation is estimated in both level and first difference forms and an additional variable for prices is included (the Personal Consumption Expenditures index). Serial correlation in the analysis was corrected using a first order autoregressive structure (AR1) specification.

The results reported in Table 1 are not conclusive that medical marijuana sales have had a significant impact on alcohol tax revenues in NY. While in first difference form, the variable on the medical marijuana dummy variable is negative, it is not significant. In level form, the variable while estimated as positive is not significant either. More work remains on this issue as well as others related to legal marijuana market in NY state.

Table 1: Regression results – dependent variable Alcohol Tax Revenues

Variable	Coefficient	T-statistic	Variable	Coefficient	T-statistic
C	1.2017	1.0245	C	-0.032904	-1.6086
NY_MED	0.0459	0.5322	NY_MED	-0.016404	-0.55213
LOG(PI_NY)	0.8324**	2.4291	DLOG(PI_NY)	2.1066**	1.9989
LOG(PCE)	-1.3857	-1.3327	DLOG(PCE)	2.3229	0.7167
AR(1)	0.5654***	8.03436	AR(1)	-0.2087**	-2.2259
adj R2	.83		adj R2	.07	

* significant at the .1 level, ** significant at the .05 level, *** significant at the .01 level

5. CONCLUSIONS

NY's recreational marijuana market is still in its early stages of formation. Analysis of the medical marijuana market and its impact on alcohol tax revenues, as presented in this study is inconclusive and still in its formative stages. This is still a preliminary study, and more work remains to this topic.

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