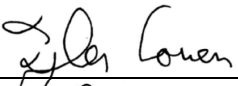
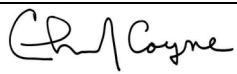


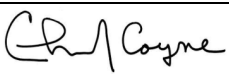
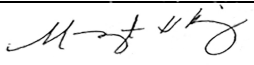


THREE ESSAYS ON THE ROLE OF CHINA IN THE DEVELOPING WORLD

by

Gregory W. Caskey
A Dissertation
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
of
Doctor of Philosophy
Economics

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Three Essays on the Role of China in the Developing World

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Dedication

To Colleen - whose constant love, support, and encouragement made this possible.

Acknowledgments

As I reflect on this journey, it's plain to me that I would not have arrived where I am today without many scores of supportive people along the way. Thanking each of them by name and acknowledging their contributions to my personal and intellectual development would require another dissertation. There are, however, a few individuals I would like to explicitly recognize for their invaluable support and guidance over these years.

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As anyone who has undertaken doctoral studies can attest, the first year of graduate school is rife with challenges and tough scenes. I'm so grateful to have been part of a cohort that made the first year (and each subsequent year) a dynamic and enjoyable intellectual experience. For that, I want to express a heartfelt thank you to Chandler Reilly, Nathaniel Smith, Zachary Kessler, Rachael Behr, Peter Hazlett, and Olga Shanks for all the help, hilarity, and most importantly, friendship.

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Abstract

THREE ESSAYS ON THE ROLE OF CHINA IN THE DEVELOPING WORLD

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George Mason University, 2022

Dissertation Director: Dr. Tyler Cowen

What are the consequences of the rise of the People's Republic of China (PRC) for societies in the developing world? This dissertation examines the economic and political consequences of the rise of the PRC for: 1) Nations on China's periphery and throughout the world, and 2) ethnic minority groups living within the PRC. Specifically, these essays examine the impacts of Beijing's economic development policies, including the transnational Belt and Road Initiative, as well as the Chinese Communist Party's (CCP) violent assimilationist policies towards ethnic minorities in China's far west Xinjiang Uyghur Autonomous Region.

The first chapter of my dissertation investigates the effects of Chinese development lending and foreign aid upon the political institutions of recipient countries. Utilizing a variety of estimators on panel data for 100+ low- and middle- income countries over the period of 2002-2017, I explore whether China's growing presence in this domain assists or impedes the institutional health of recipient countries. My findings suggest the presence of an "amplification effect". That is, Chinese development flows amplify the existing institutional orientation of both autocratic and democratic recipient nations. However, this effect exhibits a greater magnitude in autocracies, as sampled autocratic recipients become more

autocratic in their institutional orientation relative to the extent to which sampled democracies become more democratic.

The second chapter of my dissertation, published in *Public Choice*, examines the CCP's violent assimilationist campaign targeting the Uyghurs, a predominantly Muslim minority group in China that constitutes a population majority in the Xinjiang Uyghur Autonomous Region. Building upon the predatory theory of the state, we highlight the role of heightened political centralization under President Xi Jinping as well as technological changes that reduced the costs of predatory policing in Xinjiang and elevated the perceived economic benefits from integration as the key constraint changes driving CCP decision-makers' course of heightened repression since 2016. Taken together, we argue these changes altered the cost-benefit analysis for CCP decision-makers, incentivizing their choice of destructive cultural assimilation rather than respect for the rights and autonomy of Uyghurs in Xinjiang.

The third chapter of my dissertation examines the political economy of China's Belt and Road Initiative (BRI), Beijing's global infrastructure and policy project involving over 150 nations. Beijing's clearly stated aims for BRI include that it be characterized by "win-win cooperation that promotes common development and prosperity" between China and participant nations. Building upon the literature on state-led development projects, I argue that Beijing faces information and institutional constraints preventing the successful planning, implementation, and operation of BRI. Taking Beijing's stated aims as given, I highlight that Beijing undermines their own ability to carry out BRI successfully by employing ill-suited means to achieve their stated ends. Exploring the mechanisms at work on the ground, I utilize BRI contract data and case studies as evidence for the theory.

Chapter 1: Chinese Development Lending & the Amplification Effect

1.1 Introduction

Over the span of only a few decades, China transformed from a nation comprised of hundreds of millions struggling to get by at subsistence level into the world's second largest economy. At the time of Mao's death in 1976, China's GDP per capita was \$200; by 2010, it was more than \$4,000, and today over \$10,000. In this time span, China's share of the global economy has risen from below 2 percent to just under 20 percent (IMF, 2019). In what has been referred to as "the greatest program for economic reform in history" (Coase and Wang, 2012), China's economic transition from a communist system to a capitalist system "with Chinese characteristics" transformed a country making up one fifth of the world's population from one in which 66% of its citizens lived in extreme poverty in 1990 to less than 1% in 2015 (Roser and Ortiz-Ospina, 2017). Foreign direct investment began flooding into China with Deng Xiaoping's "opening up" reforms, averaging about 2 billion USD per year in the 1980s (mostly from Hong Kong and Taiwan), and when the rest of the world caught on, this rapidly increased to 40–60 billion USD per year in the 1990s (Coase and Wang, 2012).

As China's national wealth has grown, it has increasingly become a major player in foreign aid and development lending, a domain previously occupied primarily by multilateral creditors and OECD governments. While Chinese foreign aid and development lending is not a strictly new phenomenon, its efforts in this domain have increased dramatically as China has become rich. This is particularly so in conjunction with the Belt and Road Initiative (BRI), Beijing's transnational development strategy of Chinese-financed infrastructure development unveiled by Xi Jinping in 2013. The rapid growth of Chinese official lending and investment is nearly unprecedented in history, being comparable only to the rise of US

postwar lending, and accordingly, has transformed the Chinese government into the world’s largest official creditor (Horn et al., 2019, 6).¹ A growing literature exists on the nature of China’s foreign aid and overseas lending, with a consistent feature of this literature being an emphasis upon the opaqueness of China’s lending practices and standards, as well as the true extent and scope of lending that takes place.² A key finding of this literature is that developing nations are much more indebted to China than was previously known, as China is the largest external creditor to approximately 30 countries (Horn et al., 2020).

Whereas conventional foreign aid and overseas lending from bilateral and multilateral creditors to low-income and middle-income countries (LMICs) is concessional (below market interest rates, or interest free, and containing grant elements) in nature, China’s official loans are done at prevailing market interest rates, with terms of agreement including collateral clauses and high risk premia.³ Horn et al. (2019) provide data suggesting that, given China’s non-disclosure of its official lending to multilateral development bank (MDBs) and other international financial institutions, about 50% of China’s overseas lending, amounting to over 200 billion USD, “...is ‘hidden’, in the sense that it is not picked up by official statistics of the IMF, World Bank or [the Bank of International Settlements].” Of the 50 main recipient countries of Chinese development lending, the average stock of debt owed to China has grown from 1% of debtor country GDP in 2005 to more than 15% in 2017, according to lower bound estimates (Horn et al., 2019, 4).

This paper investigates the effects of Chinese development lending upon the political institutions of recipient countries. Given the significant institutional differences between

¹The designation, “official”, here refers to the fact that almost all of China’s overseas lending “is undertaken by the Chinese government, state-owned enterprises or the state-controlled central bank.” In contrast, the largest overall creditor remains the United States (Horn et al., 2019, 6).

²On Chinese foreign aid and lending, Hernandez (2017) found that, with respect to the conditionality of World Bank aid, a one percentage increase in Chinese aid is associated with 15% fewer conditions from the World Bank. Zeitz found that in response to a country receiving Chinese aid, the World Bank “emulates” the Chinese approach by increasing the proportion of its aid allocations towards projects in infrastructure-intensive sectors. Brazys and Vadlamannati (2021) found that Chinese development aid flows “may be accompanied by negative externalities” relative to Development Assistance Committee (DAC) donor partners, particularly in undermining positive economic reforms. See also Dreher et al. (2019, 2021), Blair and Roessler (2021), and Pearson et al. (2021).

³By contrast, the US government extends grants funds for military and economic cooperation, while official creditors in Europe often lend with maturities up to 30 years and almost no risk premia or collateral clauses (Horn et al., 2019, 16–17).

Chinese development lending and the disbursements from conventional bilateral and multi-lateral creditors (e.g. USAID, World Bank), how much of what we know about the effects of foreign aid and overseas lending on recipient countries’ political institutions applies to the Chinese case? Utilizing new data estimating the extent of the Chinese development lending in over 100 countries, this paper fills a gap in the literature by examining the political and institutional impacts of Chinese development lending *relative to* conventional development lending and aid.

A large empirical literature exists examining the effects of conventional development aid upon the political institutions of recipient countries. We categorize the competing claims about foreign aid’s effects on political institutions into two broad categories; the “optimistic view” and the “pessimistic” view (Dutta et al., 2013; Leeson, 2008a). The “optimistic” hypothesis argues that aid has the power to turn autocracies into democracies. On the contrary, the “pessimistic” hypothesis underscores not only the inability of aid to promote democracy in recipient countries, but provides evidence that aid weakens democracy and solidifies predatory regimes’ grips upon autocratic power, in the process incentivizing inefficient rent seeking behavior as opposed to productive economic activity.

This paper tests a third hypothesis—the “amplification effect”—as put forth by Dutta et al. (2013). In their study of 124 developing countries between 1960 and 2009, they found, “foreign aid neither causes democracies to become more dictatorial nor causes dictatorships to become more democratic. It only amplifies recipients’ existing political–institutional orientations. Aid makes dictatorships more dictatorial and democracies more democratic.” Utilizing new data on Chinese overseas lending from Horn et al. (2019) that uncovered 200 billion USD of “hidden” Chinese aid, this paper tests the amplification effect hypothesis using panel data covering 104 developing countries that have been recipients of Chinese aid between 2002 and 2017. Across a number of different estimations, my findings support the amplification effect hypothesis as it pertains to Chinese aid, which has the effect of making the average sampled democracy more democratic (as demonstrated by higher Polity scores of the average democracy) and the average sampled autocracy more autocratic (as demonstrated by deteriorating Polity scores of the average dictatorship).

The setup of the paper is as follows: Section II will contain a brief comparison of Chinese aid vs. conventional development aid, as well as an overview of competing aid hypotheses vis-à-vis the amplification effect. Section III will provide an overview of the data utilized as well as the empirical strategy employed. Section IV will outline the results of the analysis, as well provide interpretation of the channels through which the amplification effect works. Section V concludes.

1.2 Chinese Development Lending

1.2.1 Chinese versus Conventional Development Lending

While Chinese aid is not a new phenomenon, its efforts in this domain have dramatically increased as China has become a wealthier country.⁴ The figures plainly show this, as the Chinese government holds upwards of five trillion USD of debt towards the rest of the world (roughly 6% of world GDP), compared to less than 500 billion in the early 2000s (roughly 1% of world GDP). Nearly 80% of the world’s countries are now recipients of Chinese official finance, a figure rapidly approaching the near-full global coverage of US official lending. The footprint of official Chinese finance is particularly prevalent in LIDCs, where Chinese lending exceeds the total lending figures of multilateral creditors like the IMF and the World Bank. In developing and emerging markets, debtor governments owe an estimated 380 billion USD to China compared to an estimated 246 billion USD to 22 Paris Club member governments (Horn et al., 2019, 11–13).

Chinese development flows differ substantially in a few key respects relative to the disbursements of conventional bilateral and multilateral lenders.⁵ First, a clear pattern exists by which the terms of Chinese aid are highly tailored to fit the risk profile of each recipient country. Advanced and higher income countries receive portfolio investments through

⁴For simplicity, I will refer to Chinese lending in the developing world (which takes the form of direct loans) as “Chinese aid”. Though distinct, the the opaqueness of Chinese aid does not provide confidence to distinguish between official lending via direct loans versus aid disbursements similar in nature to that of conventional lenders. Li (2017) and Brazys and Vadlamannati (2021), for example, refer to Chinese lending as “Chinese aid”.

⁵See Palagashvili and Williamson (2021), who argue that despite public perceptions, DAC and non-DAC donors perform similarly poorly in terms of best practices including transparency, overhead costs, aid specialization, selective allocation, and effective delivery channels.

sovereign bond purchases of the People’s Bank of China, while developing countries receive direct loans. While official creditors over the last few decades have typically lent to LIDCs at concessionary terms with long maturities at below-market interest rates, Chinese aid takes on nearly the opposite, lending at market rates with shorter maturities, risk premia, and collateral clauses to secure repayment in the event of default, often through commodity exports (Horn et al., 2019, 5). A great deal of concern has been articulated regarding the debt sustainability of BRI projects in LIDCs, including references to Chinese lending policy as “predatory lending”. Malik et al. (2021, 31–32) found that, whereas in the early 2000s around 30 percent of China’s overseas lending portfolio contained credit insurance, pledges of collateral, or third-party repayment guarantees, this figure has risen to nearly 60 percent.⁶

Second, Chinese aid differs from conventional development aid to the extent that the vast majority of it is bilateral, as opposed to multilateral, in nature. Accordingly, more than 75% of Chinese official lending between 2000 and 2017 has been done by two Chinese state-owned banks, the Chinese Export–Import Bank and China Development Bank, both of which are owned by and report to the Chinese State council, the chief administrative authority of the People’s Republic of China (PRC). Whereas in conventional development aid, debtors’ governments are often dealing with multilateral creditors like the IMF and the World Bank, in the case of Chinese aid these debtors are dealing, for all intents and purposes, directly with the Chinese state. As Gelpern et al. (2021, 34) found, Chinese official lenders utilize “senior creditor” arrangements, placing themselves at the front of the repayment line by accessing borrower accounts to collect unpaid debts. In their analysis of the debt implications of BRI, Hurley et al. (2019) argues that LIDCs are more likely to successfully handle Chinese debt to the extent that BRI lending is multilateral in character, including lending transparency and concessionality, as opposed to a BRI that is “overwhelmingly directed, financed, and operated by the Chinese government.” The founding of the Asian Infrastructure Investment Bank (AIIB), launched by the Chinese government in 2014, and its subsequent adoption of

⁶In their analysis of 68 BRI borrowing countries, Hurley et al. (2019) “conclude that eight countries are at particular risk of debt distress based on an identified pipeline of project lending associated with BRI,” including the Maldives, Mongolia, Djibouti, Montenegro, Laos, Pakistan, Kyrgyzstan, and Tajikistan.

existing MDB rules signaled a willingness on the part of the Chinese government to embrace international lending and development aid norms. In practice, Chinese development flows via AIIB takes up a very small share of Chinese official finance. Hurley et al. (2019) estimate that AIIB accounts for about 2 billion USD of official Chinese finance, while Chinese official lending bilateral channels (in particular, the Chinese Export–Import Bank and China Development Bank) accounts for 30–40 billion USD.

Third, Chinese aid demonstrates a lending strategy that Horn et al. (2019, 8) refers to as a “closed circle” or “circular lending” strategy, and what Brautigam (2011) calls the “Exim-bank Cycle”. Rather than disbursing funds to accounts controlled by debtor governments, which is typical of conventional development flows, China’s state-owned lenders disburse funds directly to the Chinese state-owned enterprise contracted to complete infrastructure projects abroad by debtor governments. It is estimated that, of all the contractors participating in Chinese-funded projects, nearly 90% are Chinese companies, while 7% are local contractors from the country in which the project is taking place (Hillman, 2018, 4). While the “closed circle” strategy may reduce default risks as well as the ability of borrowers to misuse the funds—as a great deal of Chinese official finance remains within its own financial system—it also facilitates China to lend to increasingly risky debtors. Already described as highly opaque in general, these practices further blur the overall picture of Chinese official lending activity, contributing to what Horn et al. (2019, 18) refers to as a “potentially severe underreporting of external debt stocks”. Malik et al. (2021, 56) estimates that the average borrowing government is under-reporting its debt obligations to China by an amount equivalent to 5.8% of its GDP, a total nearing \$400 billion.

1.2.2 The Amplification Effect

Given the institutional differences between the lending activities of the Chinese government and conventional lenders, how much of what we know from the literature on the effects of foreign aid and development lending on political institutions applies to the Chinese case? Dutta et al. (2013) frame their hypothesis against two broadly competing views, the “optimistic” and “pessimistic” hypotheses, regarding the effects of development lending and

foreign aid on recipient countries' political institutions.

The “optimistic” hypothesis holds that targeted aid can facilitate movements within autocratic regimes to become more democratic. For example, Birchler et al. (2016) find that aid from the World Bank and IMF has positive effects on democratization, if made conditional on increased participation and recipient accountability. Likewise, Ziaja (2020) argues that a country's democracy improves when it receives aid from more donor countries, as fragmented aid permits choice to the local actors involved in the democratization process.⁷

In this view, one channel through which aid can enhance democracy is through targeted investment in the human capital of recipient countries, including primary, secondary, and tertiary education. Noting that education levels and democracy are highly correlated, Glaeser et al. (2007) found that increased educational attainment raises the benefits of civic participation, and at the margin, increases popular support for democratic movements within authoritarian countries. Another channel through which aid is argued to facilitate democratic transition is through technical assistance to strengthen checks on executive power within developing countries. Of this, Knack (2001) found that successfully targeted aid that, (a) supports electoral processes, strengthens judiciaries, and legislatures; and, (b) promotes civil society organizations such as a free press, labor unions, and human rights groups, can diminish an executive's autocratic control of society. Through this channel, aid assists democratic supporters in their struggle against authoritarian regimes through assistance including training, advice, moral support, or funding (Carothers, 2009, 2011).⁸

The “pessimistic” hypothesis holds that aid “[has] power to make democracies into dictatorships” through a series of unintended consequences (Dutta et al., 2013, 210).⁹ One channel through which this can occur is through the “double asymmetry” of aid, as pointed out by Bauer (2000, 48–49). While aid may take up a relatively small percentage of recipient countries' national income—thus possessing limited scope for improving economic conditions

⁷On the “optimistic” hypothesis, see for example, Scott and Steele (2011), Stokke (2013) Jones and Tarp (2016) Carnegie and Marinov (2017), and Carothers (2020).

⁸Blair (2004) provides evidence from two U.S. Agency for International Development (USAID) supported democracy programs, or civil society organizations (CSOs), in the Philippines and Indonesia, arguing that civil society made progress in both settings, with “marginal” elements having gained voice in both settings.

⁹On the “pessimistic hypothesis”, see for example, Easterly (2003, 2007), Djankov et al. (2008), Rajan and Subramanian (2007), Kalyvitis and Vlachaki (2012), and Pritchett et al. (2013).

in the country—fungible aid disbursements may make up a relatively large portion of the discretionary spending of a recipient country. This may, in turn, enable autocratic regimes to tighten their grips upon political power and resource control (Bueno De Mesquita and Smith, 2009; Feyzioglu et al., 1998; Winters, 2010).

These dynamics exist because, as Bauer (2000, 48) notes, “Unlike manna from heaven, which descends indiscriminately on the whole population, these subsidies go to governments...”. This entails, for example, lowered relative costs facing government actors faced with the choice of restricts the inflow of foreign commercial capital, an engine of economic growth for LIDCs. As Leeson (2008a, 47) describes, aid disbursements affect the incentives facing political actors in recipient countries by changing the costs and benefits of autocratic decision-making, which may have the effect to, “[exacerbate] the already substantial difference between ruler and citizen interests in recipient countries” (Leeson, 2008a, 47). Recently, Andersen et al. (2020) found that aid disbursements to highly aid-dependent countries coincide with sharp increases in the value of offshore bank deposits. They estimate the extent of the elite capture of aid at 7.5 percent of GDP of sampled countries, and that receiving aid corresponding to 1 percent of GDP increases offshore deposits by approximately 3.4 percent relative to countries receiving no aid (Andersen et al., 2020, 3-4).

Another channel through which aid flows may yield deleterious effects is through increasing the returns to unproductive activities—such as political rent seeking—relative to produce ones, in the process creating a long term pattern of unpredictability for private entrepreneurs (Baumol, 1996; Coyne, 2013; Leeson, 2008a). Relatedly, Ahmed (2012, 164) argues that “unearned foreign income can increase private government consumption in the form of patronage, which a government can use to ensure its political survival.” Of this, Bauer (2000, 48) argues that aid “contributed significantly to the disastrous politicisation of life” in the developing world post-WWII.

In contrast to both the “optimistic” and “pessimistic” hypotheses, Dutta et al. (2013, 209) argues that both of these hypotheses, “ascribe too much power to aid’s ability to influence recipients’ political institutions”. Instead, they argue in favor an “amplification effect” hypothesis, holding that “aid does not alter recipient countries’ institutional

orientations. It amplifies their existing ones.” This view endorses—and takes a step further—the institutionally-stabilizing claims regarding the effects of aid upon political institutions (Bueno De Mesquita and Smith, 2010; Kono and Montinola, 2009; Morrison, 2007, 2009, 2013). Rather than the view that aid as *stabilizing both* the institutions of democracies and autocracies, Dutta et al. (2013, 223) argue that aid contributes to amplifying the existing set of political institutions within recipient countries, “[making] democratic countries more democratic and already dictatorial countries more dictatorial.”

An intuitive appeal of the “amplification effect” hypothesis is that—rather than viewing aid’s effects as occurring in a vacuum—the effects of aid on recipient countries’ political institutions are institutionally contingent upon each localities’ existing set of political institutions. Democratic governments, for instance, reflect a pattern of separation of powers, executive constraint, and a consistently applied rule of law. At the margin, these checks provide some measure of confidence that aid disbursements will be used in the manner agreed upon by recipient countries and creditors (Dutta et al., 2013, 211). On the other hand, it is not surprising that within autocratic regimes, aid disbursements may be used in a manner to further consolidate political power or predate upon political rivals. Such outcomes are consistent with the “amplification effect” approach.

1.3 Data & Empirical Strategy

1.3.1 Data Overview

To investigate the effects of Chinese development lending on the political institutions of recipient countries, I utilize panel data covering 104 countries from 2002–2017 that were recipients of Chinese official finance. For estimates of debt stocks owed to China, I utilize data on Chinese official finance from (Horn et al., 2019), which has been relied upon by researchers investigating the motivations and effects of Chinese aid. Their data is comprised of nearly 5,000 “hidden” direct loans and grants extended by the Chinese government and other state-owned creditors.¹⁰

¹⁰Importantly, these data exclude portfolio debt holdings, which is the Chinese government’s primary debt instrument when dealing with advanced countries (Horn et al., 2019, 32–34).

Estimates of debt stock owed to China are recorded in current \$USD, and the estimated total external debt stock owed to China in percent of debtor GDP. Notably, this data only includes debt held in the form of direct loans by private and public entities within recipient countries to Chinese state-owned creditors. Importantly, Horn et al. (2019, 10) note that their data represents a “conservative, lower bound” estimate of the true extent of China’s overseas lending, and given the opaqueness involved, they “do not fully capture the true extent of China’s overseas lending.”¹¹ Appendix Table A.1 includes a list of countries sampled, and Appendix Table A.3 provides a list of all variables utilized and their sources.

Because nearly all of the sampled countries receive Chinese aid in addition to official development aid, other foreign aid received must be controlled for. Net official development assistance (ODA) consists of disbursements of loans and grants made on concessional terms made by members of the Development Assistance Committee (DAC) and MDBs. Importantly, this only refers to loans and grants made “to promote economic development and welfare in countries”, excluding military assistance.

For estimates of how relatively democratic or autocratic the political institutions are of Chinese aid recipient countries, I utilize Polity IV Project (Marshall et al., 2018), which tracks political regime characteristics and transitions from 1800–2017 for 167 independent states. The “Polity” score, ranging from -10 (full autocracy) to +10 (full democracy), is assessed in each given year by subtracting the country’s “AUTOC” score from its “DEMOC” score. These scores are derived from considering various “authority characteristics” including the presence of institutions through which citizens can express political preferences, institutionalized constraints on the usage of executive power, and the guarantee of civil liberties to all citizens (Marshall et al., 2018). For our purposes, “democracies” are countries with Polity scores in a given year greater than zero, while “autocracies” refers are countries with scores of zero and below in a given year. To examine Polity scores over time, I use the “Polity 2” variable (which henceforth will be simply referred to as “Polity”), which was designed for time series analysis.¹²

¹¹Malik et al. (2021, 58) estimate the average LIDC government is under-reporting debt obligations to China by approximately 5.8% of its GDP, a total worth approximately \$385 billion.

¹²The “Polity 2” variable takes countries’ Polity scores and applies a simple treatment to account for periods which lack a functioning government, including cases of foreign “interruption”, cases of “interregnum”,

Following Dutta et al. (2013), as well as previous research on the effects of aid upon countries’ political institutions, I include a battery of control variables to best isolate the effects of Chinese aid. To account for the persistence of the Polity score (the dependent variable), I lag the Polity score one period, accounting for regressions-to-mean effects, as well as capturing higher scoring countries’ limited opportunities to improve their Polity scores. Additional controls include the (log) GDP per capita, as well as three population measures including log population, population density, and percent of urban population. To account for political leaders controlling a countries’ natural resources, thereby further consolidating their power and impacting a country’s political institutions, total natural resource rents as a percentage of GDP is controlled for. Data for the aforementioned controls are from the World Bank (2019).

Controlling for regime stability and regime age, I utilize data from the Database of Political Institutions (Cruz et al., 2018). To control for regime stability, I utilize the “Tensys” variable, which measures how long the country has been autocratic or democratic. For regime age, I utilize the “Yrsoffc” variable, which measures how long the country’s chief executive has been in power. Appendix Table A.2 reports summary statistics for all variables. Of sampled countries, the average stock of Chinese debt is approximately 4.3 percent of debtor GDP, with a standard deviation of 8.4 percent. The average Polity score is 2.85, with a standard deviation of 5.7. Average GDP per capita is \$3806, with an average growth rate of 2.7 percent.

1.3.2 Empirical Strategy

The empirical strategy I employ examines how recipient countries’ existing set of political institutions interacts with received Chinese aid in a manner that affects the degree of democracy or autocracy in those countries. To distinguish between Chinese aid received by democracies and autocracies, I construct an interaction term, “ChinaAid*Democracy dummy”, which multiplies the stock of Chinese aid a recipient country receives with a

and cases of “transition” (Marshall et al., 2018).

dummy variable that measures whether the country is an autocracy or democracy, to predict the extent to which the degree of democracy or autocracy (the dependent variable, “Polity”) is affected.

It is likely that our variable of interest—Chinese development aid—is endogenous to the political institutions of recipient countries. The endogeneity of conventional development aid is clear through the conditionality of aid upon various political and economic reforms. In contrast, while Chinese lenders have no ostensible interests in the democratic reform of countries, there is a clearly pattern of Chinese aid being disbursed to countries with either low degrees of democracy or relatively stable autocracy. With this, it may be the case that existing set political institutions within countries influences the extent to which they receive Chinese aid disbursements.

To address these concerns, I employ a variety of estimators designed to account for issues of endogeneity. First, I estimate a basic equation utilizing ordinary least squares (OLS) with two-way fixed effects. Second, I use two generalized method of moments (GMM) estimators, including difference GMM and system GMM. With each test, I address how these estimators take endogeneity concerns into account, as well as the validity of each strategy. Across these different estimators, I find similar results regarding the effects of Chinese aid upon political institutions.

1.4 Results

1.4.1 OLS

Providing baseline results, I present an OLS model with a series of controls, two-way fixed effects and robust standard errors clustered by country, estimating the following equation:

$$\begin{aligned} \text{Polity}_{i,t} = & \beta_0 + \beta_1 \text{ChinaAid} \times \text{Democracy}_{i,t} + \beta_2 \text{ChinaAid}_{i,t} + \beta_3 \text{ODA}_{i,t} + \\ & \beta_4 \text{Polity}_{i,t-1} + \mathbf{X}_{i,t} \beta_5 + \gamma_i + \varphi_t + \epsilon_{i,t} \end{aligned} \quad (1.1)$$

The key variables of interest, $\text{ChinaAid} \times \text{Democracy}$ and ChinaAid , estimate the effect of Chinese aid upon the political institutions of recipient countries (as measured through

the Polity score of country i in time t). Both of these variables are the the log of country i 's estimated debt stock owed to China in time t in the form of direct loans held by public and private entities to Chinese state-owned creditors. Of these, $\text{ChinaAid} \times \text{Democracy}_{i,t}$ is an interaction term, capturing the effect of Chinese aid as disbursed to “democracies” in period t by multiplying the log of country i 's debt stock owed to China by a dummy variable (equal to 1 when Polity score > 0 , and zero otherwise). $\text{ChinaAid}_{i,t}$ is the log of country i 's estimated debt stock owed to China in time t , conditional on the country being an “autocracy” (having a Polity score < 0).

The variable ODA is the log of country i 's official development assistance, measured as the log of official development assistance extended to country i in time t). This variable controls for the stock of non-Chinese aid flows to recipient countries by DAC members and other multilateral institutions, including only grants and loans made on concessionary terms, and excluding military assistance. My dependent variable, $\text{Polity}_{i,t}$, measures the relative degree of democracy or autocracy in country i in time t). Due to the persistence of the dependent variable, $\text{Polity}_{i,t-1}$ measures the political institutions of country i lagged one period. $\mathbf{X}_{i,t}$ is a mix of covariates that also affect the countries' relative degree of autocracy or democracy. Lastly, $\boldsymbol{\gamma}_{i,t}$ controls for country-specific effects, $\boldsymbol{\varphi}_{i,t}$ controls for period-specific effects, and $\varepsilon_{i,t}$ is a random error term. Table 1.1 presents the results of my OLS estimation.

The results of the model are consistent with the amplification effect hypothesis, that aid makes democracies more democratic and autocracies more autocratic. Interpreting this through the model's coefficients, the coefficient on the interaction term, $\text{ChinaAid} \times \text{Democracy}$ is positive and significant, while the coefficient on ChinaAid is negative and significant. Consistent with the findings of Dutta et al. (2013), the β_1 coefficient is larger in absolute value terms than the β_2 coefficient. Column 1 contains the baseline specification, Column 2 adds additional controls, and Column 3 contains the full battery of covariate controls.

The results reflected in each column support the amplification effect hypothesis as applied to the Chinese case. ChinaAid 's coefficient is negative and statistically significant in each case, meaning that autocracies become relatively more autocratic with additional

Table 1.1: OLS Results

	(1)	(2)	(3)
ChinaAid×Democracy	0.163*** (0.025)	0.165*** (0.0251)	0.156*** (0.023)
ChinaAid	-0.130*** (0.026)	-0.146*** (0.029)	-0.136*** (0.027)
ODA	0.105 (0.089)	0.071 (0.084)	0.059 (0.045)
Polity _{<i>t-1</i>}	0.560*** (0.049)	0.545*** (0.048)	0.550*** (0.045)
Log GDP per capita _{<i>t-1</i>}		0.333** (0.162)	0.423** (0.168)
GDP growth		0.00325 (0.009)	0.00292 (0.008)
Log population		1.075 (0.803)	1.960 (1.202)
Urban population		-0.031 (0.031)	-0.037 (0.035)
Regime stability			-0.029** (0.014)
Regime age			0.003 (0.009)
Population density			-0.007 (0.005)
Natural resource rents			-0.004 (0.007)
Constant	-0.372 (1.784)	-17.99 (11.54)	-31.53* (17.78)
Observations	1,369	1,350	1,300
No. countries	97	97	93
R-Squared	0.668	0.674	0.685
Time FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. All regressions include country and period fixed effects. The dependent variable is Polity_{*i,t*}. ChinaAid×Democracy is an interaction variable that multiplies the debt stock of country *i* in period *t* by a dummy variable (equal to 1 when Polity > 0, and zero otherwise). ChinaAid measures the log of country *i*'s estimated debt stock owed to China in the form of direct loans. ODA controls for Official Development Assistance, measured as the log of ODA to recipient countries, which includes grants and loans made on concessional terms, excluding military assistance.

Chinese lending and aid. Likewise, the coefficient on ChinaAid×Democracy interaction is positive and statistically significant. While these results support the amplification effect hypothesis that foreign aid amplifies countries’ existing institutional orientations, the difference in magnitudes suggests a stronger amplification effect of Chinese aid towards autocratic recipients of Chinese aid, as autocracies become more autocratic *relative to* democracies becoming more democratic. That is, while there is a weakly positive *total effect* associated with the ChinaAid×Democracy interaction (the effects of Chinese aid upon democracies), there is a relatively larger negative effect associated with ChinaAid (the effects of Chinese aid upon autocracies).

1.4.2 GMM

While the OLS model with fixed effects provides baseline results, correlation between the lagged dependent variable and the error term contributes towards biased and inconsistent estimates. Likewise, fixed effects may not be appropriate with dynamic panel estimates, since in the case of samples with small T and large N, a correlation is created by the within transformation between the error term and the lagged dependent variable (Nickell, 1981). Additional endogeneity concerns exist in these estimates, as poorer and more autocratic regimes may attract more aid than relatively more well-off, more democratic countries.

To address these endogeneity questions, I employ two generalized method of moments (GMM) estimators, Difference and System (Blundell and Bond, 1998; Djankov et al., 2008; Valette, 2018). GMM estimators are particularly suitable for “small T, large N” panels (Roodman, 2009, 86). Difference GMM estimators rely upon lagged regressors as instruments for the first-differenced endogenous variables, which permits us to address questions of endogeneity (Arellano and Bond, 1991). System GMM estimators uses additional moment conditions that correspond to the levels of the equation, and uses lagged differences of the endogenous regressors as instruments (Arellano and Bover, 1995; Roodman, 2009; Windmeijer, 2005).¹³

¹³Roodman (2009, 86) argues that GMM estimators are ideal for situations dealing with: 1) small “T”, large “N” panels (too few periods, too many individuals); 2) a linear functional relationship; 3) a dynamic left-hand-side variable that is dependent upon its own past realizations; 4) independent variables that are not strictly exogenous (correlated with past and possibly current realizations of the error); 5) fixed individual

The model takes the following form:

$$\begin{aligned}
\text{Polity}_{i,t} - \text{Polity}_{i,t-1} = & \alpha_0 + \alpha_1[\text{ChinaAid} \times \text{Democracy}_{i,t} - \text{ChinaAid} \times \text{Democracy}_{i,t-1}] + \\
& \alpha_2[\text{ChinaAid}_{i,t} - \text{ChinaAid}_{i,t-1}] + \alpha_3[\text{ODA}_{i,t} - \text{ODA}_{i,t-1}] + \\
& \alpha_4[\text{Polity}_{i,t-1} - \text{Polity}_{i,t-2}] + \alpha_5[\text{Polity}_{i,t-2} - \text{Polity}_{i,t-3}] + \\
& [\mathbf{X}_{i,t} - \mathbf{X}_{i,t-1}]\alpha_6 + \epsilon_{i,t} - \epsilon_{i,t-1}
\end{aligned} \tag{1.2}$$

As displayed below in Table 1.2 the results of the GMM estimations regarding the amplification effect remain present, yielding the predicted signs and retaining statistical significance. Relative to the OLS results, the coefficients on the main variables of interest demonstrate a larger effect, suggesting a downward bias in the OLS model. ChinaAid's coefficient is negative and statistically significant in each case, meaning that the average autocracy becomes more autocratic with additional Chinese aid. Likewise, the coefficient on the ChinaAid×Democracy interaction is positive and statistically significant. Again, these results reveal a stronger amplification effect of Chinese aid upon autocratic recipients, as autocracies become more autocratic than democracies become more democratic. For the majority of specifications, the F-statistic is above the suggested threshold of 10. However, it falls below 10 in Column 3 (F-statistic = 8.66) and Column 6 (F-statistic = 9.23).¹⁴ This may indicate weak instrumentation. The Hansen J-statistics, reported at the bottom of each table, suggest that over identification restrictions for the instruments are met (Dutta and Williamson, 2016).

1.4.3 Extensions and robustness checks

To extend the analysis, I provide alternative measures of Chinese development flows. Thus far, the independent variables of interest (ChinaAid×Democracy and ChinaAid) have measured the log of the Chinese debt stock of recipient countries across periods, conditional upon their Polity scores. For additional robustness checks, I use the log of Chinese aid *per*

effects; and 6) heteroskedasticity and autocorrelation within individuals, but not across them.

¹⁴The common rule of thumb for interpreting F-statistics is the threshold of 10. If the F-statistic exceeds 10, then the typical critical values of 1.96 are used (Lee et al., 2021, 3,16).

Table 1.2: GMM Results

	System GMM			Difference GMM		
	(1)	(2)	(3)	(4)	(5)	(6)
ChinaAid×Democracy	0.240*** (<.001)	0.240*** (<.001)	0.226*** (<.001)	0.239*** (<.001)	0.234*** (<.001)	0.226*** (<.001)
ChinaAid	-0.195** (0.001)	-0.185*** (<.001)	-0.173*** (<.001)	-0.190*** (0.001)	-0.180*** (<.001)	-0.175*** (<.001)
ODA	-0.130 (0.645)	-0.182 (0.670)	-0.0242 (0.959)	-0.204 (0.498)	-0.0504 (0.913)	0.00336 (0.995)
Polity _{t-1}	0.0007 (0.982)	0.0029 (0.921)	0.0007 (0.988)	-0.0100 (0.762)	-0.0011 (0.976)	-0.0003 (0.995)
Polity _{t-2}	-0.0177 (0.300)	-0.0224 (0.263)	-0.0206 (0.246)	-0.0145 (0.383)	-0.0266 (0.167)	-0.0234 (0.257)
Log GDP per capita		0.656 (0.123)	0.819 (0.257)		0.613 (0.178)	0.705 (0.277)
GDP growth		0.0047 (0.747)	0.0021 (0.918)		0.0053 (0.722)	0.0051 (0.776)
Log Population		46.62 (0.319)	-21.39 (0.888)		52.18 (0.493)	17.92 (0.925)
Urban population		-0.110 (0.952)	-0.764 (0.748)		-1.041 (0.636)	-2.383 (0.538)
Regime stability			0.00258 (0.979)			0.0230 (0.831)
Regime age			0.0329 (0.771)			0.0132 (0.910)
Population density			0.0453 (0.927)			-0.158 (0.820)
Natural resource rents			-0.0148 (0.413)			-0.0087 (0.668)
Observations	1256	1237	1191	1160	1141	1099
No. countries	96	96	92	94	94	90
No. instruments	31	31	31	29	29	29
F-statistic	11.83	11.12	8.66	12.67	15.33	9.23
AR(2)	0.71	0.77	0.88	0.63	0.78	0.78
Hansen test	0.03	0.31	0.40	0.03	0.43	0.41
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: *** p<0.01, ** p<0.05, * p<0.10. The dependent variable remains Polity_{i,t}. AR(2) tests for autocorrelation, with the null hypothesis that the error term exhibits no second-order serial correlation. The null hypothesis of the Hansen test holds that included and excluded instruments are valid.

capita, which provides a more comparable measure of Chinese aid and lending disbursements across countries.

The dependent variable to this point has been $\text{Polity}_{i,t}$. For robustness checks of the dependent variable, I use alternate measures of the political and institutional health of recipient countries from the “Varieties of Democracy” (V-Dem) index (Coppedge et al., 2018). In particular, I rely upon the following variables from V-Dem: (1) Electoral democracy index; (2) Liberal democracy index; and, (3) Participatory democracy index.¹⁵

Results of these robustness checks are provided in Appendix Tables A.4, A.5, and A.6. In Table A.4, which uses per capita variables of Chinese aid, the coefficients on $\text{ChinaAid} \times \text{Democ.}$ and ChinaAid are of larger magnitude relative to my baseline tests, particularly so in columns 4-6 (Fixed Effects model) and columns 7-8 (System GMM). Table A.5 reports the results using the Chinese aid variables from our original tests, but switch the dependent variable to three different indicators of democracy from the V-Dem index.

In each test, the coefficients on our variables of interest retain their predicted signs and statistical significance, though are of smaller magnitude relative to the results in Table A.4 and in the baseline model. Table A.6 reports the results of V-Dem index variables of democracy regressed upon per capita variables of Chinese aid. Similarly to the results found in Table A.5, our key variables of interest retain their predicted signs and statistical significance. While their magnitudes are larger than that of those reported in Table A.5, they remain much smaller than those reported in Table A.4 as well as in our baseline specifications.

1.4.4 Interpretations

The results of across specifications yield a consistent story with respect to the amplification effect hypothesis as applied to Chinese aid. However, the results suggest that the effect is much stronger towards autocratic recipients of Chinese aid, as autocracies become more autocratic *relative to* democracies becoming more democratic. While there is a weakly

¹⁵V-Dem, the largest global dataset on democracy comprised of over 180 countries from 1900 to 2018, provides a multidimensional index reflective of the complexity of the concept of democracy (Coppedge et al., 2018).

positive total effect associated with the ChinaAid \times Democracy interaction (i.e. the effects of Chinese aid upon democracies), there is a relatively larger negative effect associated with ChinaAid (i.e. the effects of Chinese aid upon autocracies). With that, a number of interesting questions emerge regarding the institutional characteristics of Chinese lending that are driving these effects, and why they exhibit different magnitudes across democracies and autocracies.

Relative to conventional development lending, China under no pretenses engages in overseas lending conditional upon democratic and other institutional improvements within recipient countries. Unsurprisingly, China has established itself as “a financier of first resort” for many low- and middle-income countries (Malik et al., 2021). As Li (2017) points out, an appeal of Chinese dealings is the “sheer competence and speed with which China is able to negotiate and execute its development programs” relative to overly bureaucratized and dysfunctional conventional foreign aid alternatives. This maps on well to the description of China’s “closed circle” lending strategy, as funds disbursed from Chinese state-owned development banks flow directly to Chinese state-owned enterprises that have agreed with local governments upon a project. Relative to conventional development lenders, the arrangement from China presents a vertically integrated, “one-stop shopping” experience for recipient governments, as from their perspective, the lender and the project builder are synonymous.

Comments made by Abdoulaye Wade (2008), the former President of Senegal, captures the attractiveness of this arrangement very well:

I have found that a contract that would take five years to discuss, negotiate and sign with the World Bank takes three months when we have dealt with Chinese authorities. I am a firm believer in good governance and the rule of law. But when bureaucracy and senseless red tape impede our ability to act—and when poverty persists while international functionaries drag their feet—African leaders have an obligation to opt for swifter solutions. I achieved more in my one hour meeting with President Hu Jintao in an executive suite at my hotel in Berlin during the recent G8 meeting in Heiligendamm than I did during

the entire, orchestrated meeting of world leaders at the summit.

However, while the rapidity of China’s official lending disbursement process presents an attractive option to countries in the developing world, this arrangement reduces the relative costs facing autocratic governments desirous of agreeing upon and implementing autocratically-planned projects that are not reflective of citizens’ desires. This mechanism—a matter of concern for international observers Hurley et al. (2019); Malik et al. (2021), is present in the findings of this analysis. The finding of a relatively stronger amplification effect in autocracies compared to democracies suggests that autocratic governments are more effectively able to utilize Chinese aid for projects serving autocratic ends relative to the ability of democratic recipients of Chinese aid to serve democracy-enhancing ends.

These findings are supported in addition by the nature of China’s lending portfolio. Recent data from Malik et al. (2021, 20) found that 89% of Chinese official lending over the period of 2000 and 2017 went to countries that scored below the global median on WGI the Control of Corruption Index. Of this, China’s state-owned lenders have been directed by the Chinese central government to pursue a “high risk, high reward” strategy, developing over the last two decades a portfolio of loans in countries that suffer from persistently high levels of corruption. In particular, of the portfolio of China Development Bank (CDB) the largest source of official lending within China—82% of their lending is disbursed to countries within the bottom quartile of the Control of Corruption index (Malik et al., 2021, 41).

Additionally, since the start of China’s Belt & Road Initiative in 2013, there has been an increase in lending from China’s Ministry of Commerce (MOFCOM), whose portfolio contains loans on highly concessional terms, often with a grant element approaching 75%, aimed at generating “diplomatic and geostrategic benefits rather than commercial benefits” (Malik et al., 2021, 39). Accordingly, MOFCOM loans “often support the construction of presidential palaces, parliamentary complexes, theaters, opera houses, convention centers, stadiums and other facilities that cater to governing elites in major urban centers” (Malik et al., 2021, 39).¹⁶ By increasing the resources available to powerful elites, lending of this

¹⁶For example, Custer et al. (2019) suggest that recipient countries need to find ways to “protect their independence of action to prevent Beijing from translating its economic clout into political leverage” and “decrease their vulnerability to corruption and co-option through [financing responsibly]”.

type provides additional qualitative evidence in support of relatively stronger amplification effect findings in autocracies.

Even in a scenario characterized by “closed-circle” lending—in which funds from Chinese official lenders would not enter the financial system of recipient countries—the fungibility of aid disbursements provides a channel through which autocratic regimes misuse disbursed resources in conventional foreign aid dealings (Bueno De Mesquita and Smith, 2009; Feyzioglu et al., 1998; Winters, 2010). Consider a country receives aid earmarked for highway improvement. Assuming those funds actually go towards repairing the highways, political actors then have incentives to cut domestic funding for highway improvement, instead diverting funds towards themselves, their political allies, or their own projects (Leeson, 2008a, 46). Writing of “graft-prone” Central Asia’s powerful individuals and interest groups, Toktomushev (2018, 84-85) writes, “[They] are infamously experienced at capturing the state through corrupt and nefarious practices. As such, BRI runs the risk of becoming a new source of rent for Central Asia’s kleptocratic elites.” The opaqueness of Chinese aid, plus the rapidity of the lending and implementation process for projects, suggests a clear channel through which autocratic regimes face lower relative costs in initiating autocratically-planned projects that do not benefit citizens.

Importantly, direct financial flows are not the only channel through which graft can occur. Given the high degree of opaqueness with respect to Chinese aid dealing, there may be a significant underestimation of both the volume of Chinese lending activities, as well as the extent to which leverage exists in these creditor/debtor relationships (Horn et al., 2019, 9). Recent data released in October 2021 by the AidData Research Lab (Custer et al., 2021) lends strong credence to this notion, estimating that the average LIDC borrower underreports its debt obligations to China by an amount equivalent to 5.8% of its GDP, a total nearing \$400 billion (Malik et al., 2021, 56).

In addition to analyzing the incentives facing recipients of Chinese aid, there are important considerations with respect to the motivations of Chinese creditors worth paying attention to. In his recent book on BRI, Tom Miller (2019) recorded that “Chinese officials privately admit that they expect to lose up to 80 percent of their investment in Pakistan”.

If BRI is, in fact, not about “win-win” partnerships between China and LIDCs (as official state documents regarding BRI suggest), nor very concerned with producing projects of economic value, and instead is more concerned with increasing soft power relationships and assuaging domestically powerful interest groups like large state-owned enterprises by providing them with external markets to deal with overcapacity (Mações, 2018, 16-20), then the widespread existence of ill-founded infrastructure projects within BRI would make sense. The evidence on the extent to which this is the case is mixed, though China’s recent hard pivot away from large scale projects (like the construction railroads and coal plants) towards smaller-scale projects lends credence towards the notion that they’re interested in avoiding obvious failures such as these.

As the Pakistan case suggests, there is very likely plenty of anticipated, intentional “loss” built into BRI from the perspective of Chinese ROI. Importantly, this does not equate to being a wash for China from a soft power perspective. Notably, China (since 2000) has a fairly extensive record of debt forgiveness (Hurley et al., 2019). This is especially so in African countries, with amounts typically forgiven ranging from tens of millions to hundreds of millions of USD. Debt forgiveness is rarely the case in other regions where BRI investment is taking place, with a notable exception being Pakistan, the site of the China-Pakistan Economic Corridor (CPEC), which has been referred to as the “flagship project” of BRI. In the African case, a track record exists whereby what is *ex ante* “official lending” from the Chinese becomes a “gift/grant” *ex post*. However, the relative costs of these sort of dealings have recently increased for the Chinese, as many recipient countries have applied for debt relief with the emergence of the coronavirus global pandemic (Kynge and Yu, 2020). The extent to which loans have been turned into grants provides yet another channel through which autocratic regimes can initiate projects that “cater to governing elites” (Malik et al., 2021, 39) as opposed to their intended usage.

1.5 Conclusion and discussion

The findings of this analysis support the amplification effect hypothesis, as Chinese development lending received tends to make democracies more democratic and autocracies more

autocratic. While this is the case, the difference in observed magnitudes reveals a stronger amplification effect of Chinese aid disbursed to autocratic recipients, as autocracies become more autocratic *relative to* democracies becoming more democratic. While there is a weakly positive *total effect* associated with the ChinaAid \times Democracy interaction (i.e. the effects of Chinese aid upon autocracies), there is a relatively larger negative effect associated with ChinaAid (i.e. the effects of Chinese aid upon autocracies).

These findings follow the findings of Dutta et al. (2013), who argue that aid lacks the ability to make autocracies democracies or to make democracies autocracies, as the “optimistic” and “pessimistic” views they outline suggest. Rather, they take the aid-as-institutionally-stabilizing claims (i.e. aid ensures democratic countries remain democratic, and vice versa) advanced in previous research (Bueno De Mesquita and Smith, 2010; Kono and Montinola, 2009) a step further, arguing that the effects of aid are not only institutionally contingent, but also that aid contributes to making already democratic countries more democratic and already autocratic countries more autocratic.

Additionally, this paper has discussed three fundamental ways in which Chinese aid differs from conventional development aid, including its’ being done (A) in the form of direct loans at market rates with risk premia and collateral clauses, (B) almost entirely in a bilateral manner through Chinese state-owned banks, and (C) through a “closed circle” lending strategy (Horn et al., 2019). Of these differences, I’ve argued that the institutional characteristics associated with China’s “closed circle” lending offer the primary mechanisms through which Chinese aid exhibits larger amplifying effects upon the institutions of autocratic recipients relative to democratic recipients.

Given the “high risk, high reward” character of China’s lending profile, including a large majority of disbursements to countries below the global median on the Control of Corruption index (Malik et al., 2021, 20), Chinese development lending serves to further enhance the ends of autocratic regimes relative to democratic ones. This occurs by reducing the relative costs facing autocratic regimes who, with relative low constraints upon their actions, agree upon and implement autocratically-planned projects that benefit political elites relative to ordinary citizens. The institutional characteristics of Chinese development

lending, particularly its remarkably opaque nature plus the rapidity of the lending and implementation process for projects, suggests that relatively autocratic regimes will initiate autocratically planned projects, whereas projects embarked upon in democracies reflect a more democratic character. This mechanism lines up with new evidence from a survey of nearly 180,000 respondents in locales near over 200 Chinese projects. Of this, Pearson et al. (2021) found that while the initial announcement of Chinese investment inspires economic optimism and improves local perceptions of political leaders, this effect persists for only one year. After these projects begin construction and are operational, these individuals view their local economy as worse than it would have been without Chinese investment, and their perceptions of political leaders sharply declines.

New data from Custer et al. (2021) provides a route forward for further research, particularly in investigating the extent to which “closed circle” lending strategy is employed, whether this practice is more common in autocracies, and whether this practice is regionally specific or ubiquitous throughout China’s lending portfolio. Additionally, analysis is needed regarding how the amplification effect is influenced by differences in project implementation by Chinese state-owned enterprises as opposed to other firms. As noted by Hillman (2018), nearly 90% of contracted firms to complete projects in LIDCs are Chinese companies, a great many of which are SOEs. Understanding the share of these that are Chinese SOEs as opposed to other firms may yield important findings, as these firms face different incentives with respect to project implementation. Shedding light on these questions will help us to better understand the channels through which the amplification effect is transmitted.

Chapter 2: The Predatory State & Coercive Assimilation: The Case of the Uyghurs in Xinjiang

2.1 Introduction

In 2017, the Chinese Communist Party (CCP) ramped up its campaign of repression against the predominantly Muslim Uyghur populace in China’s far-west Xinjiang Uyghur Autonomous Region (XUAR). Upwards of one million Uyghurs have been detained arbitrarily by CCP authorities and sent indefinitely to a network of reeducation and forced-labor camps during the administration of XUAR party secretary Chen Quanguo (Zenz, 2019a,b).¹ Satellite imagery, coupled with interviews with former detainees, document nearly three hundred prison camps and detention centers built since 2017 in Xinjiang (Rajagopalan et al., 2021).

The extrajudicial detention of Uyghurs coincides with massive investment by the CCP in electronic surveillance technology, aimed at monitoring the speech, habits, relations, and religiosity of Xinjiang’s ten-million-plus Uyghurs to assess their loyalty (Roberts, 2020). Leaked CCP documents reveal that President Xi Jinping, widely regarded as the most powerful Chinese leader since Mao Zedong (Economy, 2018, 11–22), ordered CCP officials to exploit the “organs of dictatorship” to show “absolutely no mercy” in the Chinese state’s struggle against the “Three Evils” of terrorism, religious extremism, and separatism (Millward, 2019).

President Xi’s preferred policy, which by virtue of China’s centralized leadership structure has become national policy, is cultural destruction. Xi’s “Chinese Dream” policy, as written into the party’s constitution in 2017, hopes to spark “the communal consciousness of the Chinese nation.” Forced assimilation of Uyghurs is seen by the nation’s leadership as a way to promote the “revival of the great Chinese people/nation” (Ownby, 2018). Xi’s

¹While most detained individuals are Uyghurs, other Muslim minorities in Xinjiang (including Kazakhs, Uzbeks, Kyrgyz, and Hui) have been subject to unlawful detention as well.

penchant for coercion is based on his view that economic development is not enough to transform the ethnic frontier, secure CCP rule, and achieve the China Dream (Leibold and Verjee, 2021).

Despite ample evidence of the violence directed against Uyghurs,² public choice scholars have attended only modestly to the problem of violent cultural assimilation in China. We suggest that public choice is especially useful for explaining what Bednar and Page (2018) identify as the two broad approaches to cultural change: nonviolent incentives or coercion. In China’s case, our analysis considers explicitly three significant questions involving cultural change. Why did the government choose violent assimilation despite the extensive public costs of implementation? Why did the government choose to implement especially harsh policies only in 2017, even though sporadic violent incidents had occurred in Xinjiang over the past 20 years? Why did the CCP choose the latter option rather than simply allowing trade and economic growth to facilitate cultural integration?

Informed by public choice analysis, we highlight three key changes that contributed to the choice of violent assimilation. The first is the substantial centralization of political power by President Xi. Second, advances in security and surveillance technology created an unprecedented ability to monitor citizens’ activities. Third, Belt and Road Initiative (BRI) investments elevated the economic significance of the region. The increase in marginal benefits from predation, when balanced against the costs of carrying out repressive campaigns, created a rational interest in violent cultural assimilation.

Our paper contributes to three literatures. First, our analysis highlights the relationship between rising state capacity, economic growth, and violent cultural assimilation campaigns. Johnson and Koyama (2019) argue that the path to modern liberal states was blazed by investment in both fiscal and legal capacity. The modern state, through its greater ability to collect taxes and effectively administer the law, can contribute to prosperity (Johnson and Koyama, 2017). According to Johnson and Koyama (2019, 3), two self-reinforcing equilibriums are possible: stronger states choose to enforce more costly general rules (requiring investment in institutions supporting the rule of law), while weaker states enforce cheaper

²See, for example, Rajagopalan (2017), Roberts (2020), and Zenz (2018b, 2019b,c).

identity rules (rules whose form and enforcement depend upon the social identity of the relevant parties, including religion, race, or language).³

We emphasize that modern China fits neither of those two self-reinforcing equilibriums. The institutional bundle of the modern People’s Republic of China (PRC) has permitted high growth alongside persistent predation along identarian lines.⁴ We argue that predation along identarian lines is possible in any high-capacity state, especially one in which the rule of law is questionable. Though the property rights literature recognizes selective enforcement of property rights, whereby property protection is provided to some and growth results in the economy overall (see, for example, Haber et al. (2003); Holland (2017); Albertus (2021), the state capacity perspective has focused more on the rule of law as a public good, as opposed to a good provided selectively to some at others expense.

Second, we provide additional support for the predatory theory of the state. Whereas the contractarian vision views state predation as a means of promoting protection (Buchanan, 1975), the predatory vision of the state understands protection only as a means for the state to promote its predation, including through conquest (Tullock, 1974, 1987). In the predatory view, the key actors comprising “the state”, including politicians, the military, and bureaucrats (Vahabi, 2020), are motivated primarily by the desire to acquire revenue and to gain control of land and labor, often after some form of group conflict (Scott, 2017; Vahabi, 2004). Central to that vision of the state is competitive rent extraction (Leeson, 2007; Leeson and Williamson, 2009; Piano, 2019; Vahabi, 2020). The scope of the state is determined by political decision makers’ ability to appropriate assets and how well individuals can avoid predation, such as by hiding their assets or activities (Vahabi, 2016). Public predation is a byproduct of society’s failure to impose credible constraints on state actors’ violence and discretionary power (Boettke and Candela, 2020; Murtazashvili and Murtazashvili, 2020). Absent such constraints, state actors arbitrarily prey upon citizens, who thereby become subject to both material and physical insecurity (Kuran, 2020).

³Buchanan and Congleton (1998) argue that a system characterized by general rules is more efficient relative to a system that introduces inequality. This is because the latter system requires more resources to make fine distinctions in the application of law across individual cases.

⁴Johnson and Koyama (2019, 285–287) make clear that the rise of the modern state did not make religious freedom inevitable. “Power states”, or high-capacity states enforcing identity rules, such as Nazi Germany and contemporary China, serve as obvious exceptions.

Our analysis of China’s policies illustrates how increases in state capacity expand the feasible set of predatory actions that can be undertaken by political decision makers rather than contributing to a more efficient provision of public goods. By weakening constraints on rule, President Xi’s policies created opportunities for predation, although as we explain, Xi’s incentives to invest in cultural destruction require consideration of the perceived value of Xinjiang in the BRI, as well as technologies that lowered the cost to the government of mass surveillance.

As for our third contribution, China’s Xinjiang policies illustrate the value of considering the relationship between nation-building and homogenization. Large, heterogeneous nations enjoy both the benefits of a large populace (for example, economies of scale and lower per capita costs of public goods) and face the costs of a heterogeneous populace (for example, ethnic conflict and social disharmony) (Alesina et al., 2003; Alesina and Spolaore, 1997). Alesina et al. (2013, 2017) argue that states deploy technologies—ranging from compulsory language instruction and patriotic education to deportations and massacres—to homogenize a populace along some identarian margin, such as ethnicity or religious affiliation. Democracies and dictatorships face different incentives for deploying homogenization technologies; the threat of democratization gives states the strongest incentive to homogenize. In a dictatorship, if deploying a homogenization technology is less expensive than providing public goods, the state will set out to homogenize the populace. China’s Xinjiang policies represent a case in which changes in homogenization technology enabled a much more violent assimilation campaign than previous oppressive state policies regarding the Uyghurs.

2.2 Xinjiang: A brief historical background

Bordering eight Central and South Asian countries, the Xinjiang (meaning “New Frontier”) region has long been a complex area of cultural interaction, conquest, and controversy. Representing one-sixth of China’s overall land area, Xinjiang is China’s largest province and home to the country’s largest oil and mineral reserves. The development and control of Xinjiang have long been a priority of the central government. While Mao Zedong declared

the region the Xinjiang Uyghur Autonomous Region in 1955 to win over the region's Turkic Muslim populace, in reality, the administration there has never been Uyghur or truly autonomous (Starr, 2004, 3–6).

In the two decades following the reform period of Deng Xiaoping, parts of Xinjiang experienced rapid economic development, with the capital, Urumqi, becoming one of the largest cities in Central Asia with nearly three million inhabitants. However, economic growth in Xinjiang disproportionately has benefited the growing Han Chinese populace, many of whom were incentivized by the CCP to migrate westward to Xinjiang with promises of jobs and housing. Meanwhile, southern Xinjiang (the Uyghurs' traditional heartland) has experienced relatively little economic growth (Harlan, 2009). Whereas in 1945 Han and Uyghurs made up 6.2% and 82.7% of Xinjiang's population, by 2017 Han accounted for 36% and Uyghurs 48% (Liu and Peters, 2017). The mass movement of Han people to Xinjiang, a key contributor to ethnic tension and weakening loyalty toward China, has led some commentators to view officially supported Han migration as Beijing's primary policy tool for assimilating its border regions (Odgaard and Nielsen, 2014).

For decades, Xinjiang has been the site of a protracted struggle for greater autonomy between the region's Turkic Muslim population and the regional and central governments (Starr, 2004). After a series of Uyghur-Han clashes in the 1990s, the Chinese authorities moved to assert tighter control over the Uyghurs. In response to outbreaks of opposition and unrest, the government cracked down on "illegal religious activities" and separatism (Li, 2019, 334–335). The fortunes of the Uyghur populace significantly worsened in the early 2000s. In the wake of the 9/11 attacks, Beijing opportunistically claimed that it confronted its own domestic struggle against the spread of radical Islam. After the Chinese government persuaded the US government to condemn a minor splinter faction of the Uyghur nationalist movement as a terrorist group within China, the government in effect had carte blanche to designate minor Uyghur independence movements as terrorist campaigns. Those efforts became a part of the CCP's plan to combat the Three Evils of separatism, religious extremism, and international terrorism at all costs (Fuller and Lipman, 2004, 340–344).

Negative sentiments toward the Uyghurs intensified after the protests of July 5–7, 2009,

in Urumqi. What began as peaceful demonstrations became “one of the worst episodes of ethnic violence in China in decades”, as deadly violence broke out between Uyghurs and Han in the streets of Urumqi.⁵ In the weeks following, Chinese law enforcement authorities “carried out a widespread campaign of unlawful arrests in the Uyghur areas of Urumqi; at least dozens, and possibly many more, detainees... disappeared” (Human Rights Watch, 2009, 21). The Urumqi riots marked a turning point whereby the CCP would come to suspect the entire Uyghur ethnic group, rather than individual perpetrators, of being potential radical Islamists.

As the years passed, Xinjiang experienced a trend of steadily increasing security and surveillance by the Chinese government and a handful of deadly attacks by Uyghurs. Zenz and Leibold (2017a,b) argue that a series of high-profile terror attacks outside of Xinjiang, such as a knife attack that killed 31 people at a railway station in Kunming in March 2014, “seriously unnerved the Chinese populace and prompted the central government to take an even tougher stance.” After a May 2014 bombing of a market in Urumqi left 43 dead and more than 90 injured, Xi announced a nationwide “Strike Hard Campaign against Violent Terrorism”, which lowered the threshold for arresting and punishing Uyghurs dramatically (Wang, M., 2018). This “iron-fist strategy”—conveying a message of zero tolerance for crimes deemed to “threaten the sovereignty of the state”—has been accompanied by speedy trials and harsh sentences, with over 50 Uyghurs being sentenced to death in recent years (Li, 2019, 335–337).

The scale and scope of state-sponsored discrimination against the Uyghurs reached unprecedented levels in 2017 under the leadership of Chen Quanguo, party secretary for XUAR since August 2016. Previously, the party secretary of Tibet Autonomous Region from 2011 to 2016, Chen became known for his relentless mobilization of the state security apparatus to suppress any perceived destabilizing influences. Upon arriving in Xinjiang, Chen distributed President Xi’s speeches widely and exhorted officials to “round up everyone who should be rounded up” (Ramzy and Buckley, 2019). Chen’s mass-internment strategy in

⁵The Chinese government places the Urumqi death toll at 197 people (134 Han Chinese and only 10 Uyghurs) with more than 1600 injured. International observers dispute those numbers, claiming that 400 Uyghurs were killed in Urumqi, plus an additional 100 in Kashgar (Human Rights Watch, 2009, 11–13).

Xinjiang accomplished “in a single year what took him five years in [Tibet]” (Zenz and Leibold, 2017a). In 2017, Urumqi’s official population fell by 15%—from 2.6 million the year before to 2.2 million—the first decline in more than three decades. What is most important, May 2017 was the month that police began rounding up Urumqi’s Uyghur populace and taking them to detention camps (Chin and Bürge, 2019).

In the years since the Chen-initiated campaign began, detained individuals have been subjected to involuntary internment in political reeducation camps and “vocational training centers”, a euphemism for forced-labor camps. The changes in Xinjiang are such that virtually no part of Uyghur private life lies beyond the reach of the state. Such methods, as Greer (2018) writes, “are straight from the dystopian imagination”, including the mass collection of DNA and voice samples and a flood of CCTV cameras connected to police databases that monitor Uyghurs’ homes, provincial streets, and marketplaces. In addition to continuous technological surveillance, Uyghurs now must tolerate “big brothers and sisters” in their homes to monitor their words, actions, and associations. From 2014 to 2016, more than 300,000 Communist Party members were sent to Xinjiang as monitors under the banner “Visit the People, Benefit the People, and Bring Together the Hearts of the People”. An additional one million monitors were sent in 2017 to guide Uyghurs through study sessions on President Xi’s vision of New China and compulsory patriotic singing in front of the local CCP headquarters (Acemoglu and Robinson, 2020, 235–236).

Recently, it has become known that over the 2015–2018 period, the Uyghur birth rate fell by more than 60%. That news, confirmed by the Chinese government, came alongside numerous reports of Uyghur women being subjected to forced sterilizations, abortions, and IUD insertions within the internment camps (Zenz, 2020). Many analyses of the events in Xinjiang have described them as “cultural genocide” (The Economist, 2020) aimed at eliminating Uyghur cultural practices. However, following revelation of the dramatically reduced Uyghur birth rate, the qualifier “cultural” increasingly is being dropped (Finley, 2021).⁶

⁶For a counterargument—that the genocide label is unwarranted—see Sachs and Schabas (2021).

2.3 Homogenization through coercive assimilation

In this section, we consider the question of why autocrats invest in violent cultural assimilation policies. The economic analysis of that question has focused on the benefits and costs of homogeneity. As Alesina and Spolaore (1997, 1028–1029) point out, large, heterogeneous countries enjoy benefits (for example, a lower per capita cost of public goods, economies of scale) and bear costs (for example, disharmony or larger cultural-preference distances between individuals, on average). Ethnic conflict resulting from heterogeneity is an important determinant of the political economy—particularly, political stability and institutional quality—of nations and localities (Alesina et al., 2003). Alesina et al. (2013, 2017) link those benefits and costs to assimilation campaigns by arguing that authoritarian states faced with internal threats have incentives to deploy homogenization technologies to regiment a populace along some identarian margin, such as a political belief, religious affiliation, or ethnic composition.

While the costs of heterogeneity may be to some extent mitigated by dividing a large country into autonomous regions (Alesina and Spolaore, 1997, 1046), greater regional autonomy may encourage ethnic revival, thereby lowering the perceived costs of separatist activities (Sun, 2020; Treisman, 1997). As such, states have incentives to deploy policies that alter the cost–benefit calculations of separatists (Young, 1994). Along the same lines, Alesina et al. (2013, 3) predict more investment in nation-building within threatened non-democratic regimes relative to nonthreatened dictatorships or democracies.⁷ As Tullock (1974, 58) put it, for the autocrat, “repression is cheaper than reform”.

In dictatorships, if deploying the homogenization technology is less expensive than providing public goods, homogenization permits officials in power to better maintain their preferred set of policies in the face of uncertainty and political instability. Accordingly, “rulers threatened by overthrow will indoctrinate people in order to teach them to ‘enjoy’ the current regime and the current borders of the country and not break away...” (Alesina

⁷Alesina et al. (2013, 2–6) define nation building as “a process which leads to the formation of countries in which the citizens feel a sufficient amount of commonality of interests, goals, and preferences that they do not wish to separate from each other.” Nation building may take on both productive forms (e.g., building highways) and odious forms (e.g., prohibiting the use of a native language; committing genocide).

et al., 2013, 3). Such actions, if successful, alter the perceived costs and benefits of resistance to the regime so as to lower its value. Despite the relatively high costs, rational autocrats have incentives to undertake homogenization techniques, even if they are only marginally effective (Barzel, 1997, 138).

In Xinjiang, CCP decision makers have implemented policies along those very lines. By decision makers, we refer here to politicians and bureaucrats within the CCP with imperfect collective enforcement powers, as opposed to a single entity imposing its will uniformly through coercion (Libecap, 1989). While President Xi and party secretary Chen Quanguo are powerful decision nodes, when we consider the benefits and costs facing CCP decision makers, we are referring to CCP officials at various levels of government connected to the Xinjiang policies. The repressive policies are investments in a coherent governance system throughout China—a country with similar state and fiscal capacity within its borders, rather than one with high state capacity in the East and low state capacity in the West. Although lower-level CCP decision makers may not have much of an interest in such investments, the centralized aspects of the CCP ensure that they will care about it because President Xi does. Such actions demonstrate the commitment of the CCP, led by Xi, to renew the “New China era”, Xi’s favored term for China under Mao. Mao was known for his insistence that the party and the state have a strong presence throughout the country, thereby ensuring that the only means of political participation was through the CCP (Acemoglu and Robinson, 2020, 229).

As McGuire and Olson (1996, 73) point out, whether coercion is utilized in the interaction between two parties depends on how those parties differ in wealth, power, or other ways. Barzel (2002) recognized that collective action is necessary to limit state predation, a problem that becomes all the more severe as populations increase. On the other side of the coin, a larger and more complex society implies—particularly for an autocratic regime—innovations in the realm of institutional destruction to come from the top to preserve power. Contrary to Hirshleifer (1991) paradox of power, which holds that smaller players tend to improve their positions relative to larger ones, CCP decision-makers have wielded coercive force to serve their interests at maintaining power against an already subjugated group. Over the

last decade, the CCP has desired “the reassertion of total party dominance” over society (Palmer, 2018), and harmonization of the PRC’s twenty first-century institutions with the CCP’s Maoist ideological heritage has been a core goal of governance under Xi (Greer, 2019). Xi desires to achieve what Mao was unable to achieve: a prosperous and powerful China.

Under China’s predatory capitalism, the Chinese state preserves the rights of some by enabling market processes but will degrade those rights (and the wealth associated with market exchange) quickly should it see fit (Cai et al., 2020). In doing so, the state constrains wealth creation, especially by closing off interactions among people of different ethnic groups (Kuran, 2012, 2013). Through its policy choices, the CCP promotes the private interests of dominant groups within the state, including politicians, the military, and bureaucrats (Vahabi, 2020).

Uyghurs have long been excluded from Xinjiang’s most lucrative markets, especially the energy and industrial sectors (Pannell and Schmidt, 2006). A primary example of that exclusion is the Xinjiang Production and Construction Corps (XPCC), a paramilitary unit created in 1954 to foster state-sponsored flows of Han Chinese into Xinjiang. The majority of the XPCC’s massive workforce—upward of 2.6 million as of 2020, accounting for more than 17% of Xinjiang’s GDP—consists of (Han) retired soldiers of the People’s Liberation Army (Howell and Fan, 2011). Although ethnic minorities comprise a small majority of Xinjiang’s populace, only 13.9% of the XPCC’s workforce are Uyghurs or other minorities. While Beijing claims that the XPCC is “not competing for benefits with the local people”, many Uyghurs resent what they consider to be the blatant appropriation of their land and water resources (Olesen, 2014). The CCP’s approach to state-building involves destructive cultural coordination, a tactic emphasized in the predatory vision of the state.

While some tension arises between the wealth-constraining nature of Chinese capitalism and the promotion of the private interests of dominant groups within society, the very nature of the constraints (here, governmental granting of monopoly privileges in the energy industry in Xinjiang) permits the state to funnel resources to groups privileged by the state, here, ex-military members employed by the XPCC. It is within that institutional setting

that we analyze the CCP’s coercive assimilatory policies.

2.4 Changing constraints and incentives

2.4.1 Political centralization under Xi

The core of our argument is that the CCP’s decision makers implementing the coercive assimilatory policies in Xinjiang responded to changes in the relative payoffs and costs associated with those policies. CCP decision makers perceived that the benefits resulting from such policies (for example, achieving Xi’s China Dream, a coherent nation-state, or greater stability) outweighed the costs of such policies.⁸

In our theory, political centralization within the CCP under President Xi Jinping lowered the political transaction costs associated with implementing repression. Since assuming power in 2013, the CCP’s leadership under Xi has moved dramatically away from the “collective leadership” of his predecessor, Hu Jintao, opting instead for “core leadership” and consolidated decision-making power (Thomas, 2014). In 2017, Xi abolished presidential term limits, opening the possibility that he will rule for life (Maçães, 2018, 174). In 2018, “Xi Jinping Thought” was enshrined in the CCP Constitution, something done previously only for Mao (Economy, 2018, 18). While Xi’s rise partially is a byproduct of his own political acumen, mounting evidence suggests that his rise and consolidation of power may be at least as much the result of a consensus among China’s ruling elite that the regime was in crisis and in need of a strongman at the helm (Baranovitch, 2021; Thomas, 2021). Whereas China was about “getting up” in the Mao era and “getting rich” in the Deng era, China in the Xi era is about “becoming strong” (Jiang, 2018).

Under the consolidated leadership of Xi, CCP decision makers faced lower political transaction costs for engaging in a large—scale coercive assimilatory campaign—including the application of new technologies of predation—relative to a less consolidated regime. Regardless of CCP officials’ personal views on the efficacy of such a campaign, the political environment has both raised the benefits of supporting Xi’s preferred policies and raised

⁸The CCP’s stated justifications for the coercive policies include alleviating poverty and achieving economic growth in Xinjiang (Zenz, 2019a).

the costs of resisting his policy direction. Increasingly, the picture emerging is one of the power dynamics tilting further and further away from local government and toward Beijing (Thomas, 2014). Power centralization explains the meteoric rise of Chen Quanguo, who was noticed by Xi for his stability-enhancing policies in Tibet. Chen was among the first of the senior CCP officials to speak of Xi as the “core” of CCP leadership. Because of his total loyalty to Xi, Chen was rewarded with a seat on the all-powerful CCP Politburo in 2017 (Zenz and Leibold, 2017a).

Given the consolidation under Xi, who has firm political power over the party, the state, and the military, high-ranking officials and bureaucrats have stronger incentives to align with policies implemented from the top. Some evidence even suggests that the Xi regime enjoys wide support among party elites. As Thomas (2021) points out, Xi has enjoyed rising approval rates at the National People’s Congress (NPC). While the NPC is widely (and accurately) regarded as a rubberstamp congress, Xi’s predecessor, Hu Jintao, saw his approval rate fall from 91.2% in 2007 to 85.3% in 2013. In contrast, Xi’s approval within the NPC has risen each year since taking power, increasing from 90.5% in 2014 to 98.5% in 2020. The extent to which those figures reflect genuine support, as opposed to fear of political retribution, is unknown. Nonetheless, Xi’s power advantage over previous leaders is clear.

Looking at CCP expenditures, we can see the effects of centralization of power, as Xi’s aim to exploit the “organs of dictatorship” in the CCP’s coercive assimilation of Xinjiang is plain in China’s security budgets. During the first five years of Xi’s leadership, China’s domestic security spending grew 30% faster than total government spending (Zenz, 2018b). Examining CCP spending data, Zenz (2018a, 6) points out that in 2010, China’s national domestic security spending exceeded its external-defense spending for the first time. By 2016, a gap of 135 had arisen, as domestic security spending increased by nearly 18% that year in conjunction with the Xinjiang policy.

Over the course of one year (2016 to 2017), Xinjiang’s security spending nearly doubled, increasing from 30.05 billion yuan (USD 4.3 billion) to 57.95 billion yuan (USD 8.4 billion) (Zenz, 2018b). In comparison, Xinjiang’s security spending was 5.45 billion yuan in 2007

(USD 780 million), meaning that in only a decade, the province’s security spending rose tenfold (Dou and Wen, 2020; Zenz, 2018a). As Zenz (2018b) points out, security spending in Xinjiang between 2016 and 2017 increased most dramatically in minority-dominated prefectures within Xinjiang (167%) compared with the region of Xinjiang as a whole (92%). From 2016 to 2017, Xinjiang’s domestic security budget increased in each of the following categories: all security-related facility construction (213%); social-stability management (235%); detention-center management (239%); and other domestic security expenditures (351%). Those figures are much higher still for Xinjiang’s ethnic-minority prefectures and counties. While China’s security spending has increased in general, the increase is much more pronounced in Xinjiang, particularly so within minority-dominated prefectures.

Since 2017, more than 200 detention compounds have been built in Xinjiang (Rajagopalan et al., 2021). Satellite imagery reveals that from April 2017 to August 2018, 39 camps nearly tripled in size, with the additional area amounting to the equivalent of 140 soccer fields (Wen and Auyezov, 2018). Despite the government’s 2020 announcement that almost all individuals in its “vocational training program” had “graduated”, new satellite evidence shows that, from 2019 to 2020, more than 60 prisonlike detention centers either have been expanded or built from scratch (Fifield, 2020).

Homogenizing a populace of millions through constant monitoring, reeducation, and forced labor entails considerable political coordination and massive investment in security-related spending. Because of the consolidated political power presently wielded by Xi, CCP decision-makers faced lower political transaction costs associated with a drastic shift in policy toward coercive assimilation relative to an alternative scenario without such political consolidation. In an atmosphere of consolidated political power, state actors have stronger incentives to align themselves with the leader’s policy choices and are disincentivized from disputing them.

2.4.2 Technological change

Technological change plays a key role in explaining the growth of the state (Cowen, 2021). Large institutional structures require extensive communication, organization, and coordination; technological change pushes out the feasible set of what states can accomplish. Developments in transportation, communication, tax collecting, information management, and other technologies all contribute to tighter population control, a hallmark of the Chinese surveillance state. As Wagner’s law shows, wealthier societies tend to demand more government services (Peacock and Scott, 2000). Likewise, wealthier governments are able to embark upon larger and more systematic projects and campaigns. Central to understanding the CCP’s Xinjiang policies—and the shift from an old political equilibrium to a new one—are the technological changes that made them possible (Cowen, 2021, 20).

While technological change may be endogenous, it also can arise exogenously, as the literature on the rise of military capacity reveals. The latter explanation is especially so when the government does not have to invest in the development of the technology, as is the case in Xinjiang with artificial intelligence and security technologies that have been deployed widely.⁹ Developed in the west, such technologies have become cheaply available to governments desirous to use them. Offering a similar explanation, Anderson and McChesney (1994) contend that the reason why the federal government chose war over treaties with American Indians was that the former’s costs declined after the Civil War once the US government had a permanent standing army. When technological changes arise exogenously, the net benefits may shift in ways that favor repression, even without government investment in such technology. In such instances, a free hand to implement policies becomes a critical determinant of policy.

Vast exogenous technological change thus expanded the CCP’s predation possibilities, lowering the marginal costs of repression. Here, the predatory vision of the state understands that to the extent the state provides protection, it does so as only a means for promoting its predatory behavior. Protection and predation are two sides of the same coin for the

⁹Surveillance technology, including AI and DNA identification, developed by US companies, have assisted the CCP’s repressive efforts in Xinjiang (Chin and Lin, 2019; Wee, 2021). Recent events in Afghanistan reflect tell the same story, as one headline reads, “US-built databases a potential tool of Taliban repression” (Bajak, 2021).

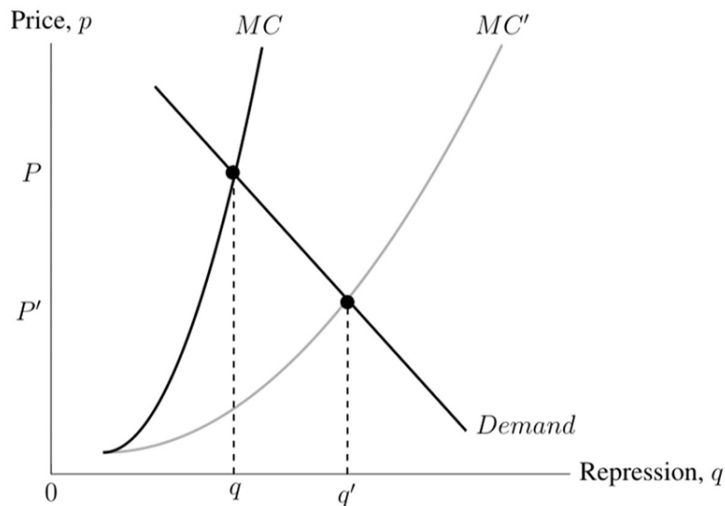


Figure 2.1: Equilibrium repression

predatory state, as predators turn into protectors only when providing protection generates sufficient rents (Vahabi, 2020). For the modern PRC, rising security expenditures expand the feasible set of predatory actions that can be undertaken by political decision makers.

Figure 2.1 depicts an exogenous technological shock that lowers the marginal costs of repression, which the CCP responded to by increasing the quantity demanded of repressive tactics. The increase in marginal benefits from predation, when balanced against the costs of carrying out repressive campaigns, created a rational interest in violent cultural assimilation. Given their revealed heightened demand for repressive methods, CCP decision makers increased the quantity demanded of repression in response to lower marginal costs. Assessing whether the demand- or supply-side effect dominated is outside the bounds of our analysis; hence, figure 2.1 depicts one demand curve rather than two.

For the Chinese government, those investments represent an increase in surveillance along the margins of quantity (for example, hiring more traditional police officers) and quality (for example, the deployment of cutting-edge surveillance technology). Within the predatory-state framework, the boundaries of the state are determined endogenously by the extent to which it can capture rent-generating assets. Assets may refer to things such as knowledge and skills (generally non-appropriable, and thereby not within reach of the state, or the “state space”), as well as commodities, money, and physical capital (appropriable, and

ambivalent with respect to the state space). Specifically, the “booty value of assets” refers to the amount of an asset’s value that can be transferred or allocated through coercive capture (Vahabi, 2016, 154). The predatory state will seize assets for itself if it can strengthen its ability to appropriate assets or weaken the potential mobility of assets.

The repressive policies in Xinjiang have been characterized by the CCP’s dramatically enhanced asset-appropriation capabilities. Investment by the Chinese government in some of the world’s top surveillance technologies has made it such that Xinjiang has been labeled “a twenty-first century Police State... [combining] dystopian technology and human policing” (Rajagopalan, 2017). A small sample of the technological surveillance deployed includes the mass collection of DNA samples, iris scans, voice samples, regular scans of digital devices, the use of digital ID cards to track movements, and a flood of CCTV cameras connected to police databases that monitor Uyghurs’ homes, provincial streets, and marketplaces (Greer, 2018). With virtually no part of Uyghur life beyond the reach of the state, the enhanced surveillance efforts engaged in by the CCP represent an investment in the monitoring (and therefore maintenance) of the human-specific assets of the Uyghur populace, which the government aims to “Sinicize”.

A large fraction of those funds were designated for creating over 90,000 new police and security-related positions in Xinjiang in 2017 (Zenz and Leibold, 2017b) and constructing more than 7500 “convenience police stations” around the region, which “made it easy for police to monitor local residents and mobilize rapidly in response to threats” (Dou and Wen, 2020). Street corners in Xinjiang have the feel of being under military occupation, as thousands of paramilitary troops parade through Xinjiang’s cities “in shows of ‘thunderous power’ aimed at Uyghur terrorists” (The Economist, 2017). That is the key to what CCP officials call “grid-style social management”, a strategy that segments communities into geometric zones so that security staff (with a vast network of CCTV cameras connected to police databases) can observe much more citizen activity than ever before (Zenz and Leibold, 2017b). A leaked document quoting Chen Quanguo stated that the reeducation camps should “teach like a school, be managed like the military, and be defended like a prison” (Dooley, 2018). Uyghurs remain in tightly state-controlled environments not

merely while detained in reeducation camps, but throughout their everyday lives. Having undertaken extensive investment in asset appropriability, the CCP has secured economies of scale in the surveillance of the Uyghur populace, specifically monitoring the extent to which their human-specific assets (that is, knowledge, sentiments, skills) are being used in CCP-sanctioned manners. The surveillance state’s apparatus includes monitoring all online activities, as well as the installation of 200 million facial-recognition cameras throughout the PRC (Acemoglu and Robinson, 2020, 235).

The approach undertaken by the CCP in Xinjiang has involved shifting away from targeting individuals’ behavior in favor of targeting groups based on the often-immutable characteristics of people. Individual punishments for offensive activities have been replaced by group detention, reeducation, and forced labor (Greitens et al., 2020, 11). Interviews with detainees reveal the existence of nearly 50 infractions (ranging from owning multiple knives to consuming alcohol, to having WhatsApp downloaded, to attending a traditional Islamic funeral) that are considered sufficient to justify indefinite detention without due process (Greer, 2018). In the PRC, uncertainty among citizens as to whether such infractions are “official policy” or ad hoc decisions by local officials is a feature, not a bug.

Advances in surveillance technology have enabled the CCP to define and enforce a set of legal rights—along identitarian lines—to homogenize the populace and in the process pursue Xi’s core ambition of realizing the China Dream: the building a coherent nation-state with a consistent level of state and fiscal capacity from east to west. Doing so involves the delineation and enforcement of a set of legal rights (Barzel, 2000), which itself is costly and subject to the state’s budget constraint. Here, Chinese authorities are enforcing stricter identity rules that undermine the economic rights of the Uyghurs further. Thus, the state’s choice of a governance bundle is a function of the technology available to it, among other factors. Investment in the realignment of political allegiances is an example of a way in which the Chinese predatory state seeks to raise the booty value of human-specific assets—the knowledge, sentiments, and skill sets of the Uyghurs in Xinjiang. Fundamentally, CCP decision makers view the net benefits of degrading the property rights and culture of Uyghurs and other Muslims in Xinjiang as greater than the costs. Accordingly, the policies are

efficient from the government’s predatory perspective.

2.4.3 Belt and Road Initiative

Coinciding with the repression of the Uyghurs is the Belt and Road Initiative, China’s signature transcontinental investment project and policy.¹⁰ BRI investment occurs in or is adjacent to Xinjiang. Pakistan, for instance, is the location of the China–Pakistan Economic Corridor, which has been referred to as the crown jewel of BRI. Another central node of BRI investment is Kazakhstan, particularly the Khorgos dry port on the border of China and Kazakhstan, the biggest dry port in the world. With billions of dollars invested in those two locales, China aims for Kazakhstan to serve as the gateway to Europe and for Pakistan to be the gateway to the Indian Ocean (Maçães, 2018, 43).

Given the extent of Chinese investment in Central Asia, along with the proximity of the recipient countries to Xinjiang, some observers have sought to tie BRI to the policies repressing the Uyghurs (Kam, 2018). As Zenz (2019c, 103) points out, the inception of BRI in 2013 coincided with a period in which deadly acts of resistance in Xinjiang (and elsewhere in China) were reaching a peak. While BRI is not a response to the CCP’s perception of problems existing in Xinjiang, the violence there amplified the value of maintaining stability in the region more than it would have in a context without BRI investment. By virtue of the CCP’s repression through forced labor, BRI is reflective of the repression of the Uyghurs.

With BRI, China places a premium on heightened coordination of the Chinese economy, particularly in Xinjiang. The value of Xinjiang’s land and labor resources as perceived by CCP decision makers determines the marginal benefits from repression and, with the onset of BRI, the incentives for stability were strengthened in the region. Along with reduced political transaction costs from consolidating power under President Xi and lower marginal costs of repression from an exogenous technological shock, BRI also contributed to CCP decision makers choosing repressive policies.

To the extent that Chinese state-owned creditors can capture returns from BRI projects,

¹⁰Spanning over 150 countries since its 2013 inception, BRI comprises massive investments in infrastructure, energy, and telecommunications projects (Hillman, 2020).

incentives are created for shoring up the locales where projects are taking place. CCP decision makers—most saliently Xi Jinping—believe that a considerable threat to political stability exists in Xinjiang. Conditional upon that belief, investing in security and stabilization is a way of internalizing an externality. While the credibility of the security threat appears dubious at best, leaked CCP documents nonetheless indicate that it looms large to Xi (Greitens et al., 2020; Ramzy and Buckley, 2019). While the CCP maintains that the mass detentions are part of a campaign to combat terrorism in the region, the sheer scale of the campaign suggests that the party has larger goals. As Chin and Bürge (2019) argue, “The party’s goal . . . is to reinforce its control in Xinjiang by remaking the long recalcitrant region in its own image, and to secure it as a hub for President Xi Jinping’s global development ambitions.” Given the billions of dollars of BRI investment running through and adjacent to Xinjiang, CCP decision makers have acted to secure those investments by deploying homogenization technologies in the region.

By way of comparison, the CCP engaged in a repressive campaign in Tibet following unrest in 2008–2009. While the repression of Tibetans likewise involved reeducation and involuntary vocational training, the campaign operated on a scale nowhere close to that in Xinjiang. Besides the difference in scale, the Tibetan case lacked indefinite extrajudicial internment along the lines of what’s occurring in Xinjiang (Greitens et al., 2020; Odgaard and Nielsen, 2014). As Zhu and Blachford (2012) point out, “Tibet lacks industry potential and extractable natural resources, so its economic importance for China’s market-oriented economic reforms is less evident.” State-led development projects in Tibet, in contrast to those in Xinjiang, are described as “being highly subsidy dependent and inefficient” (Ertürk, 2016). Given the perception that economic prospects in Xinjiang are stronger than in Tibet, CCP decision makers have responded to incentives by investing in security-related spending in Xinjiang in support of BRI investment projects on a much larger scale. While both provinces are mountainous, nearly all of Tibet’s border is taken up by the Himalayas. Geography imposes a natural constraint on exchange opportunities, limiting the extent to which the CCP invests in the region. For those reasons—and in contrast to Xinjiang—Tibet is neither adjacent nor central to critical BRI investment projects.

Another point suggesting that CCP decision makers have economic considerations in mind with the repression in Xinjiang is the usage of so-called vocational training internment camps (VTICs) (Zenz, 2019a). Through VTICs, the CCP coercively provides vocational training for Uyghurs, many of whom were engaged previously in agricultural work or other traditional Uyghur crafts in southern Xinjiang. For the CCP, the combination of reeducation and forced labor serves to transform a “backward” religious minority into modern, “useful” citizens. As detained citizens learn “higher value” skills (for example, assembly-line work), the state simultaneously is able to monitor, indoctrinate, and retrain Uyghurs (Zenz, 2019a). VTICs intensify longstanding programs aimed at transforming Uyghurs and other ethnic minorities from poor, rural workers to factory workers or commercial- farm workers (Wong and Buckley, 2021).

New exchange opportunities associated with BRI investments in Central Asia created a source of demand for cheap, low-skill labor and, in turn, increased the demand for forced labor. With no constraints on state action, the benefits associated with degrading Uyghur autonomy, in the eyes of CCP decision makers, increased. From the perspective of state decision makers perceiving a security threat, destroying wealth—in this case, the free exchange opportunities of Uyghurs in Xinjiang—is a rational means of protecting their investments (Leeson and Harris, 2018).

2.5 Conclusion

China’s Xinjiang policy demonstrates that the actions of predatory states determine asset appropriability endogenously. A retroactive change to China’s laws in 2018, enacted in order to promote “transformation through education”, legalized the indefinite detention of more than one million Uyghurs for violating counterterrorism regulations—a potent example of the Chinese government’s discriminatory property rights regime (Dou, 2018). Similarly, Germany’s fascist state robbed Jews by promoting “Aryanization of the economy”, which prepared the way for the legal confiscation of Jewish property and assets by the state (Dean, 2008).

The predatory theory of the state provides insight into why governments choose violent

cultural assimilation. The repressive actions undertaken by the Chinese Communist Party (CCP) against the Uyghurs in Xinjiang can be understood through the lens of the changing constraints and incentives facing CCP decision makers. Consolidated political power within the CCP, technological advances in security and surveillance, and Belt and Road Initiative (BRI) projects altered the CCP’s cost–benefit analysis of coercive assimilatory policies in Xinjiang. For a Despotic Leviathan, predation and investment in state capacity are both complementary and self-reinforcing: enhanced state capacity enables enhanced predation, and enhanced predation enables greater state capacity. With enhanced predatory capabilities, the CCP’s surveillance state can nearly constantly monitor the citizenry, thereby increasing the state’s legal capacity and moving toward Xi’s goal of a coherent governance core across the whole of China. As Geloso and Salter (2020) explain, investments in state capacity imply investment in coercive capacity. State capacity thus is an outcome of a process involving both plunder and the prevention of plunder. The development of the People’s Republic of China illustrates how state capacity and coercive capacity are linked.¹¹

Related research highlights counterterrorism as the primary factor explaining the policies implemented in Xinjiang. Greitens et al. (2020), for example, emphasize that the CCP shifted policy from “stability maintenance” to “preventive repression” because of its leadership’s access to new intelligence, which caused them to revise their beliefs regarding the terror threat in Xinjiang. “New intelligence” offers a partial explanation but leaves open the question of why policy shifted when it did. Xinjiang experienced sporadic instances of violence in the 1990s and 2000s, most of which were incidents of civil unrest that began as protests. Throughout that period, the CCP retained a dominant position over its citizens, even in the less developed western provinces. Despite the ostensible security threat, previous CCP responses were nowhere near the scale of the ongoing Strike Hard Campaign. In addition, the CCP could have made an example of a few offenders rather than spending billions of dollars per year on constructing detention facilities, reeducating large swathes of

¹¹The same dynamic also played out in North America with colonial powers and settler-colonial governments, when indigenous peoples typically confronted extraction as state capacity increased, precisely because such increases in capacity included rising military capacity—which governments typically used to extract more from indigenous people. Hence, Candela and Geloso (2021) finding that Native people were better off stateless.

the populace, and providing forced vocational training. Accounts emphasizing counterterrorism as the primary factor explaining the Xinjiang policies understate the benefits that flow to CCP decision makers from promoting and implementing repressive policies, as well as the technological changes that enabled it.

From our own experience in Xinjiang, the CCP's show of power over the Uyghurs is evident throughout the province. Uyghurs armed with knives are no match for People's Liberation Army tanks, guns, and troops. The CCP has incentives to claim that it is engaged in counterterrorism, but that claim obscures the true explanation. Such a claim has better optics than the claim that the CCP is engaging in a coercive homogenization campaign.

Through the lens of the predatory-state framework, we interpreted the violence against Uyghurs as a byproduct of a discriminatory property rights regime in which the state appropriates assets from the citizenry. The CCP's substantial investments in cutting-edge policing and surveillance technologies have enabled predation, as have its tactics to reduce mobility, including the system of reeducation and forced-labor camps. In the minds of CCP decision makers, the benefits associated with coercive assimilation outweigh the immense costs, both to themselves in the form of budgetary expenses and to the citizenry in the form of predation. Taken together, the costs suggest that the CCP is aiming at something more than deterrence, as CCP decision makers have acted "to transform the Uyghurs... into loyal, largely secular supporters of the Communist Party" (Wong and Buckley, 2021).

Chapter 3: The Political Economy of China’s Belt & Road Initiative

3.1 Introduction

Niamey, the capital city of Niger, is divided by the Niger River. For many decades, the only bridge that crossed the Niger River was the John F. Kennedy Bridge. In 2006, the Chinese Ministry of Commerce provided funding (equivalent to \$73 million in 2014 USD) to build an additional bridge over the Niger River, roughly two miles downstream from the Kennedy bridge. The newly constructed four-lane bridge was completed around 2010, providing a suitable alternative to the highly congested Kennedy Bridge (Dreher et al., 2021). All was well—except, very few local people actually used the bridge upon completion. Due to local mistrust and a perception of poor quality associated with Chinese consumer goods, many local people regarded the bridge with suspicion. Despite it being a newer and larger bridge, its use remains much lower than the Kennedy Bridge, and the new bridge provides very little in terms of value-added for local Nigeriens, despite its great cost.¹

With the onset of China’s Belt and Road Initiative (BRI), Beijing’s signature policy program to promote economic development in upwards of 150 countries through massive infrastructure investment projects, a relevant question emerges: Should we expect BRI projects be value-adding for local populaces, or will they be more like the new bridge in Niamey? According to state policy documents regarding BRI, Beijing aims to “...realize diversified, independent, balanced and sustainable development in these countries” by “[promoting] the connectivity of Asian, European and African continents and their adjacent seas” (State Council of the People’s Republic of China, 2015). To this end, Beijing conceives of

¹The Nigeriens refer to the bridge as “Shin Tok”, a term in Hausa meaning, “Chinese shit”. For this anecdote, I am indebted to a former student who lived in Niamey, Niger for three years, during which the construction of the second bridge crossing the Niger River occurred.

BRI as the creation a “21st Century Silk Road”, governed by a spirit of “win–win cooperation”. Along these lines, the Chinese government has outlined five “cooperation priorities” as benchmarks for how the successful implementation and operation of BRI should function between China and participant countries (State Council of the People’s Republic of China, 2015).

While BRI projects have the potential to be welfare enhancing, a different alternative is at least as likely. This paper argues that fundamental information and institutional constraints reside at the core of BRI’s planning and implementation process that will prevent Beijing from achieving success according to their own stated goals. A successful BRI entails project implementation consistent with its Beijing’s ”cooperation priorities”, including enhanced Policy Coordination, Facilities Connectivity, Unimpeded Trade, Financial Integration, and People-to-People Bonds (State Council of the People’s Republic of China, 2015). Taking Beijing’s stated aims and methods as given, the successful planning and implementation of BRI rests upon information and coordination mechanisms that BRI planners and decision makers cannot access given the institutional context BRI decision making takes place in, namely, the political process.

Within the market context, prices and profit and loss coordinate economic activity and the disparate, often conflicting plans of people (Hayek, 1945). These signals are guides that assist market actors, including consumers and entrepreneurs, to accomplish their desired ends. Embedded in these signals are information and incentives that provide sharp and continuous feedback as to whether resources are being allocated to their highest-valued uses among given alternatives (Coyne, 2013). Within this institutional context, the means are present for rapid adaptability on the part of economic actors, as the information contained in the relative prices of final consumer goods as well as the various factors of production, “represent knowledge about a continually and rapidly changing structure of economic relationships” (Lavoie, 1985a, 82).

In contrast, BRI projects are chosen through political processes. BRI projects are bid upon by Chinese state-owned enterprises (SOEs), funded by Chinese state and policy banks, and vetted by state officials in Beijing. At each step of the allocation and resource

disbursement process, the relevant actors are non-market facing, and as such, lack the ability to assess whether their chosen projects are a productive usage of scarce resources that are value-adding for local populaces in BRI participant countries. Lacking access to market price signals and profit/loss, actors within this institutional context must rely other means such as output targets and politically-salient narratives as opposed to actual economic as the basis of guiding, adapting, and evaluating their decisions (Coyne, 2013, 63-66).

Accordingly, BRI decision makers face a means-ends problem with respect to the implementation of BRI, as the construction of infrastructure projects (i.e. solving a technological problem) is distinct from those processes that serve as means to promote economic growth (i.e. a coordination problem). Given these constraints, it is unlikely that BRI projects, given their chosen means, can feasibly achieve outcomes in accordance with its coordination-producing goals, including “win-win cooperation” and “strengthening all-around exchanges”. These outcomes are reflective of market processes, without which the foundation for broad scale economic coordination—a byproduct of the tacit knowledge of millions of dispersed individuals pursuing their manifold plans (Hayek, 1945)—is undercut.

This article builds on existing work related to the constraints facing planners and implementers of state-led development initiatives. A long tradition of theoretical and applied work discusses these constraints with respect to comprehensive economic planning (Hayek, 1945; Ikeda, 2002; Lavoie, 1985b; von Mises, 1920), the development of law (Benson, 1989; Hayek, 1973), foreign intervention (Coyne, 2008, 2013; Coyne and Hall, 2018), as well as institutions and culture (Boettke, 1993, 2000; Williamson and Kerekes, 2011). Related is Hirschman’s (1967) “trait-making” versus “trait-taking” framework with respect to the prospects of success for state-led development projects. Throughout this work is a focus upon the constraints facing actors engaging in economic calculation devoid of market prices, with specific emphasis upon the ill-chosen means to achieve their stated ends. While much has been written regarding the incentives issues plaguing BRI’s planning and implementation,² comparatively little has been written regarding the epistemological constraints facing BRI decision makers.

²See, for instance, Zhang and Smith (2017), Dreher et al. (2019), Brazys and Vadlamannati (2021), and Hillman (2020).

Second, this article contributes to the literature on the political economy of China's overseas lending activities and development policies. In recent years a large empirical literature has been developed on the nature and extent of China's development lending (Gelpern et al., 2021; Horn et al., 2020; Malik et al., 2021), as well as the effects of China's overseas activities upon the political and economic institutions of recipient countries (Brazys and Vadlamannati, 2021; Dreher et al., 2019; Hurley et al., 2019). A different strand of the Belt and Road literature suggests that the BRI is as much about domestic considerations within China as it is about China's overseas objectives. For instance, Ye (2019) argues that BRI is a mobilization campaign by CCP leadership to deal with domestic challenges of fragmentation, while others argue that BRI's design and implementation is primarily driven by competing domestic interests (especially SOEs associated with overseas projects) as well as competition for influence between China's Ministry of Commerce (MOFCOM), the Ministry of Foreign Affairs, and the Ministry of Finance (Jones and Zeng, 2019; Zhang and Smith, 2017).

This paper fills a gap in the literature by applying the core insights from the Austrian tradition to the broader discussion of the nature and prospects of China's Belt and Road Initiative. Whereas a great deal of the BRI literature focuses on its nature and scope, geopolitical and economic effects of BRI, as well as the motivations of Beijing in carrying out BRI, this analysis takes aim at the ground level of BRI, focusing upon the knowledge constraints that are central to its feasibility. The paper setup is as follows: Section 2 contains a brief literature review and overview of BRI. Section 3 lays out the analytical framework regarding the information and institutional constraints facing the BRI decision makers with respect to their planning and implementation of projects around the world. Section 4 provides applies the theory, utilizing case studies of BRI's flagship projects, and section 5 concludes.

3.2 The Belt and Road Initiative: Brief Overview

A large literature has developed around the analysis of BRI.³ Within this, three common emphases are prominent. First, BRI provides external stimulus for Chinese SOEs and firms, providing a solution to domestic overcapacity. This is apparent within BRI, as nearly all projects financed by China abroad are carried out by Chinese SOEs and firms (Hillman, 2018). By creating an external demand for China’s technology and know-how, Beijing “[extends] the life of older industries. . . [helping] debt-laden SOEs and other companies to cover variable costs, thereby avoiding defaults” (OECD, 2019). While this may not be productive in the long-run, Beijing avoids political instability by assuaging powerful SOEs with subsidies for long-term BRI projects.

Second, China expands its economic and political influence through BRI. Maçães (2018) refers to BRI as the “the most ambitious geopolitical initiative of the age”, suggesting that BRI, “symbolizes a new phase in China’s ambitions as a superpower”. For example, China places additional pressures upon India through heavy BRI investment in its neighbors, Pakistan and Sri Lanka. BRI has been described as “one of the main planks of a bolder Chinese statecraft under [Xi Jinping]” (Chatzky and McBride, 2020), and others argue that through BRI, Xi Jinping has surpassed all of his predecessors in his attempts “. . . to achieve the goal of national revival. . . thus reinforcing the claim of Chinese centrality” on the geopolitical scene (Economy, 2018, 141). Another strand of literature suggests that BRI improves bilateral relations between China and recipients. Lu et al. (2021), for instance, argues that BRI improved bilateral ties by strengthening economic ties with partner countries.

Third, BRI enhances China’s position with respect to global supply chains, in addition to providing enhanced resource security and alternative energy supply routes (Jochec and Jenish Kyzy, 2018). Of this, Maçães (2018) argues that Beijing’s efforts to cultivate “Chinese-led value chains”, enabling Chinese firms to increasingly occupy more lucrative positions within global supply chains, deserve central attention in BRI analyses. Here, BRI

³For excellent overviews of the political economy of BRI, see Cai (2017), Maçães (2018), Miller (2019), Rolland (2019a), and Hillman (2020). On the public diplomacy and geopolitics of BRI, see Custer et al. (2018) and Lu et al. (2021). On the potential welfare gains from BRI, see Jaborov (2018), Jochec and Jenish Kyzy (2018), and Reed and Trubetskoy (2019). On the debt implications of BRI for participant countries, see Hurley et al. (2019), Brautigam (2020), Horn et al. (2019) and Malik et al. (2021).

facilitates movements “from Made in China to Created in China, from China Speed to China Quality, and from Chinese Products to Chinese Brands” (Mações, 2018, 85). Likewise, Cai (2017) argues that an underrated aspect of BRI is Beijing’s desire to export Chinese technological and engineering standards, and accordingly, that the return on investment on infrastructure projects is less valuable than pushing participating countries to adopt Chinese technical standards in construction, finance, and information technology (Polk, 2018).

In the time since President Xi Jinping first announced China’s plans for BRI during a 2013 speech at Nazarbayev University in Kazakhstan (Xi, 2013), grandiose and esoteric rhetoric calling for a “community of common destiny” in the form of a resurrected, modernized Silk Road has been replaced by thousands of current, planned, and completed projects spanning the world. At the core of BRI is the aim to promote better relations with partner countries through greater connectivity and increased economic exchange (Lu et al., 2021). Describing BRI at the 19th National Party Congress (NPC) in 2017, President Xi said, “China will actively promote international co-operation through [the BRI]... we hope to achieve policy, infrastructure, trade, financial, and people-to-people connectivity and thus build a new platform for international co-operation to create new drivers of shared development” (Xi, 2017). At this same meeting, BRI was formally adopted into the Constitution of the CCP, strongly signaling Xi’s sustained commitment to BRI (Hurley et al., 2019).

The BRI consists of thousands of projects all over the world. Examples of major projects include the 142km Jakarta-Bandung high speed railway in Indonesia, the Colombo Port City in Sri Lanka, and the Mombasa-Nairobi Standard Gauge Railway through Kenya and Uganda. Each of these projects entail investment of well over \$1 billion.⁴ As of early 2020, Beijing claims that over 170 countries have signed Memoranda of Understanding (MoU) to join the Belt and Road (Xinhua News Agency, 2013). One of the difficulties in identifying the true scope of BRI is the lack of an agreed-upon definition for what qualifies as a BRI

⁴A large literature exists on the difficulties of planning and implementing megaprojects, which Flyvbjerg (2014) defines as “large-scale, complex ventures that typically cost a billion dollars or more”. The existing literature is largely focused upon why projects fail at a such a high rate and why they are so difficult to manage. On project size and complexity, see Flyvbjerg (2017), Brady and Davies (2014), and Lenfle and Loch (2010). On institutional structure and design, see Flyvbjerg (2013) and Denicol et al. (2020).

project (Hillman, 2018). While precise investment and lending figures are unknown, the Chinese Ministry of Commerce announced in 2017 that since BRI's 2013 unveiling, over \$300 billion in contracts were signed between China and participant countries (Lain, 2018).

Initial upper bound estimates suggest that BRI investment, if implemented fully according to President Xi's wishes, could reach up to \$4 trillion (Hillman, 2018). More recent estimates suggest a dramatically lower figure. The World Bank estimates that, as of 2019, BRI expenditure stood at \$545 billion, and Morgan Stanley predicts that BRI could reach \$1.3 trillion by 2027 (Tonchev, 2018). Should investment does exceed \$1 trillion, BRI would already be around seven times (adjusted for inflation) what the U.S. spent on the Marshall Plan to rebuild western Europe in the aftermath of World War II (Hillman, 2020, 3–4).⁵

The Belt and Road Initiative is organized into two key components: the land-based “Silk Road Economic Belt” (SREB) and the sea-based “21st Century Maritime Silk Road”. The “Belt” aims to connect Chinese trade and investment to Europe through massive road and high-speed rail infrastructure projects (as well as dry ports and energy-related projects) throughout much of Eurasia, while the “Road” aims to improve Chinese maritime trade through Southeast Asia, the Horn of Africa, and Europe largely through deepwater port infrastructure projects (State Council of the People's Republic of China, 2015). Through these, Beijing envisages a network of transportation “corridors” for goods, materials, and energy, as well as enhanced connectivity through standardized norms, state-of-the-art warehouses, and simplified customs procedures (Jochec and Jenish Kyzy, 2018).

More recently, the Chinese have increasingly invested resources in developing its “Digital Silk Road” (introduced as an official component of BRI in 2015), which seeks to make Chinese digital technology, fiber-optic cables, and wireless networks standard fare in the developing world. Further indicative of this shift, the Chinese Politburo's Standing Committee (the apex of political power in China) in March 2020 called for “accelerating the construction of new infrastructure such as 5G networks and data centers” as a key BRI

⁵Despite Xi's branding efforts with BRI, some argue that BRI is a continued, though scaled-up, version of China's “Going Out” policy adopted over two decades ago. The distinction of BRI is its “high political status” as Xi Jinping's signature policy project (Ye, 2019). According to Malik et al. (2021, 11), China and the U.S. had very similar overseas spending commitments over the period of 2000-2012 (\$32 and \$34 billion, respectively). During the first five years of BRI (2013-2017), China's overseas commitments (\$85.4 billion per year) were more than double that of the United States (\$37 billion per year).

priority (Blanchette and Hillman, 2020). While massive transportation infrastructure and energy projects dominated BRI’s early years, information and communications technology (ICT) projects are relatively lower cost (both financially and politically) to deliver and monetize for BRI participant countries. During the first five years of BRI (2013–2017), Beijing green-lit an average of 36 “mega-projects” (financed with loans of \$500 million or more) per year, compared to an average of 11 per year over the pre-BRI period of 2000–2012 (Malik et al., 2021, 26–27).

The section that follows outlines the information and institutional constraints facing BRI decision makers. China’s overseas activities through BRI are a vast topic, so this analysis does not feign to examine the nuances of each of the thousands of projects that comprise BRI. Nonetheless, I aim to provide some basic insights into the mechanisms that are more broadly representative of BRI projects.

3.3 BRI’s Information and Institutional Constraints

3.3.1 Information Constraints

The stated goals of BRI involve promoting “sustainable development” in participant countries through promoting “connectivity” between Asia, Europe, and Africa. Given the economic development and coordination-enhancing goals at the core of BRI, what are the mechanisms necessary to bring about such outcomes? The primary manner in which BRI decision makers have sought to achieve this goal is through massive investments in infrastructure projects. President Xi has said as much, as he emphasized in his address at the 2017 Belt and Road Forum for International Cooperation, “[i]nfrastructure connectivity is the foundation of development through cooperation... We should promote land, maritime, air and cyberspace connectivity, concentrate our efforts on key passageways, cities and projects and connect networks of highways, railways and seaports...” (Xi, 2017).

While the highway and railway construction may provide some value to BRI participant countries, this outcome is distinct from the processes that will promote sustainable economic development. Such efforts presume that planners have the requisite knowledge to design and

implement these projects in a manner that produces value over and above the opportunity cost of those resources. Fundamentally, the success of BRI as a development-enhancing and coordination-promoting project hinges upon mechanisms generated by markets that the relevant decision makers within China's ministries and SOEs as well as BRI participant country governments lack access to. Because of this, it is unlikely that BRI can be implemented in a manner consistent with Beijing's stated goals of enhancing economic growth and promoting closer ties between China and participant countries.

Importantly, we need not assume malevolence on the part of Chinese and local decision makers for the argument to hold. We can restate the central question along these lines: "Given benevolence, how will individuals come to know the right thing to do in any given situation?" (Boettke and Leeson, 2004, 101). The analysis proceeds to examine BRI's feasibility—assuming best-case conditions pertaining to the motivations and incentives facing BRI decision makers—so as to focusing upon planners' inability to choose which projects to implement on informational grounds only (Boettke and Leeson, 2004; von Mises, 1920).

First, BRI decision makers face a planners problem. BRI decision makers lack the abilities to coordinate the disparate plans, goals, and values of millions of people to promote economic progress within the countries that projects are taking place in (Hayek, 1945). Lacking the ability to engage in economic calculation, BRI decision makers must resort to political process to allocate resources using trial and error. However, engaging in trial and error is no substitute for the ability to engage in economic calculation. Of this, Coyne (2013, 70) writes, "Decision makers must allocate scarce resources without the advantage of market prices and profit and loss accounting to compare the expected value-added of alternative uses."

Absent the signals of prices and profit and loss accounting generated in the market, which are reflective of consumers' beliefs regarding whether resources are being deployed in a welfare-maximizing fashion, BRI decision makers (including both Chinese and BRI participant country decision makers) lack the ability to know whether their chosen projects are value-adding for local populaces relative to some alternative usage of resources. In contrast, economic progress occurs "when resources are continually (re)allocated to the

uses that people most value” (Coyne, 2013, 71).

The oft-cited *Meeting Asia’s Infrastructure Needs* report (Asian Development Bank, 2017) states that the developing nations of Asia alone require \$1.7 trillion per year from 2016-2030 (\$26 trillion total) if the region is to “maintain its growth momentum” and “eradicate poverty”. Evident in the discussion surrounding the success prospects for BRI projects is a confusion between causes and consequences of economic development. As Coyne (2013, 85) points out, “[c]ertain conditions are viewed as causes of economic progress when they just as easily could be the consequence of economic progress.”

The applications of this phenomena to BRI projects are myriad. When decision makers in BRI participant countries are faced with an offer for a railway connecting a country to another one, it is simple to envision how this can be mistaken for economic development itself. In view of wealthier, industrialized nations that are replete with infrastructure like this, decision makers may interpret the infrastructure itself as the driver of economic progress rather than factors related to solving that country’s particular economic problem. Of the confusion between production and economic progress, Coyne (2013, 73) writes of the bureaucratic tendency to “[e]mploy rhetoric about ending a country’s poverty while relying on output measures (infrastructure built, money spent, etc. and so-on) as evidence of success”. Embedded in such practices is “[t]he implicit, yet incorrect, assumption is that these increases in output are the same thing as economic progress” (Coyne, 2013, 73).

While decision makers can adjust their plans (e.g. output targets, schedule, resources expended), this overlooks the question of how such output targets were determined and if they yield any resonance to output that is desired by consumers (i.e., the citizens of BRI participant countries). As Coyne (2013, 82) argues, bureaucrats have incentives “to mark the progress of some proposed project in terms of clearly observable outputs”. Along these lines, it is telling that some of the definitive markers of BRI’s progress along the margins of “Policy Coordination” and “People-to-People Bonds” include metrics such as meetings between high ranking military officials and journalist exchanges, and along the margin of “Unimpeded Trade”, metrics including TEUs (or, “twenty foot equivalent units”, representing the volume of a 20 foot long container). In the same way that meetings between

military officials, state-sponsored journalistic exchanges and the number BRI memoranda of understandings signed do not constitute the actual stuff of improved relations between countries, metrics such as TEUs and miles of road or railroad track laid do not constitute economic development.

Additionally, BRI planners are likely to “take for granted the host of complementary goods necessary to make such projects worthwhile.” As Coyne (2013, 70) draws attention to, “...most people living in relatively wealthy societies take the wide array of available complementary goods for granted.” For instance, the value of a highway project is realized insofar as a large percentage of inhabitants operate vehicles, as well as travel to-and-from and along the highway’s routes. Likewise, Easterly (2002, 112) notes that such projects are often accompanied by insufficient funding for intermediate inputs as well as recurrent funds for maintenance, resulting in numerous projects, “[o]perating at activity levels below those planned and facilities remaining unused for a time after completion of physical assets.” Massive investment in railway is worthwhile if the resulting output will be the least-cost alternative preferred by individuals relative to their existing, preferred mode of operation.

From this, it follows that we should expect to see consistent scenarios of underutilization with respect to BRI projects relative to their stated objectives. In their new, comprehensive dataset covering over 13,000 Chinese development projects across 165 countries, Malik et al. (2021) find a great deal of evidence in support of this. Using a strict definition of projects that “have underperformed vis-a-vis their original objectives”.⁶ Their conservative estimate is that at least 10% of projects fit this criterion, totaling 91 projects worth over \$50 billion (Section 4 will outline a sample of mothballed BRI projects). Notably, Malik et al. (2021, 83) found that, of the BRI contractors associated with suspended and cancelled projects, 100% are Chinese state-owned enterprises.

Given BRI’s selection and implementation processes, it is unlikely to expect broad scale enhancements in economic development and coordination resulting from BRI projects, both on the local level in terms of individual projects as well as on the prospects for a broader

⁶These include, for example, borrowers that have defaulted on repayment obligations, infrastructure assets that are less profitable than explicitly aimed at, company bankruptcies, and contractors that fail to meet key milestones as specified in their contracts (Malik et al., 2021, 68).

coherence with respect to BRI's overall vision. As Coyne (2008, 21) notes, "Thus, failure is not due to a lack of a clear end-goal, but instead, failure is due to the lack of knowledge of how to go about achieving the desired end. In other words, failure is due to the gap between the *know-what* and *know-how*". That said, the more relevant error with respect to BRI projects is to make the opposite error; namely, by assuming that the outcomes of intervention are superior to the spontaneous order outcomes that would have resulted in the absence of the intervention.⁷

While the funds associated with BRI are largely not Official Development Assistance (ODA)⁸, very similar constraints that apply to decision makers in the development community also apply to BRI decision makers. On the prospects of effective foreign aid, Barder (2009), "[t]he coordination mechanism envisaged...for bringing [aid effectiveness] about is that of a planned economy not a market: it is a collective decision among the donors about who will do what, according to where they believe their strengths lie." That is, in laying out goals involving economic development and improved relations between countries, BRI decision makers assume that investment in inputs resulting in definite outputs will not only better coordinate the plans of millions of people, but also that their investments are a more valuable usage of resources relative to their opportunity cost.

In addition to constraints related to the planner's problem, BRI decision makers also face adaptability constraints once their projects have been initiated. Of BRI's adaptability issues, Hillman (2020, 14) argues that the success of BRI "...hinges on China having the discipline to choose the right projects and walk away from the wrong ones." Given that Chinese SOEs, the primary implementers of BRI projects, are not subject to the traditional discipline of market profit and loss, it is unlikely that BRI decision makers will discover the ability to detect error and adapt to correct inefficiencies and deadweight loss in their project implementation processes. The available data on BRI projects are reflective of this outcome. "Since leaving the station," Hillman (2020, 14) writes, "China's BRI has become a gravy train without a conductor. It's fevered pace has already exceeded China's ability

⁷Importantly, this is not to suggest that all cases of spontaneous order outperform interventions, an erroneous contention that is unwarranted (Leeson, 2010).

⁸ODA, as defined by the OECD-DAC, refers to international development finance that includes highly concessional loans and at least a 25% grant component (Malik et al., 2021, 12).

to accurately measure, let alone manage, those activities. Corruption and rent-seeking are thriving in the chaos. Conceptually, China’s BRI is closer to the War on Terror: poorly defined and ever expanding.”

Recognizing these adaptability constraints, Coyne (2013, 62) argues that planners and policymakers often employ the rhetoric of adaptability, issuing public statements of “the importance of ‘lessons learned’ and calls for ‘better coordination’ [and] ‘improved integration and adaptability.’” We already observe this at work within the BRI. As Rolland (2019b, 227) observed, Xi Jinping declared—at 2018 symposium marking the 5th anniversary of BRI’s launch—a broad movement away from from *xieyi* (i.e. broad strokes) to *gongbi* (sharp, detailed strokes). Likewise, Xi Jinping also brought attention to the performance of SOEs, demanding that “...the needs and sensitivities of local governments and populations be better taken into account... [focusing] on small-scale projects that respond to the immediate needs of local populations” (Rolland, 2019a).

Finally, issues of adaptability and economic calculation are present for BRI participant country decision makers as well. Specifically, these decision makers face information constraints with respect to accurate assessment of BRI projects due to the opaqueness of China’s development lending process.⁹ Of this, Malik et al. (2021, 6) argue, “Beijing’s reluctance to disclose detailed information about its overseas development finance portfolio has made it difficult for [low- and middle-income countries] to objectively weigh the costs and benefits of participating in the Belt and Road Initiative.” Because of this, borrowers are thus all the more unlikely to be able to weigh the opportunity cost of their BRI investments, a process augmented by the opacity of Chinese lending.

3.3.2 Institutional Constraints

In forecasting BRI’s success, a number of analyses have pointed out that BRI is a matter of comparative advantage. Brautigam (2019), for instance, notes that with China’s excess foreign exchange and construction capacity, it appears “[t]hat the BRI slots neatly into low-income countries’ development aspirations.” Likewise, of the growth-enhancing

⁹China was ranked last among the 47 international donors and lenders evaluated in the 2020 Aid Transparency Index (Publish What You Fund, 2020).

prospects of BRI, Mações (2018, 3) writes that, “After trade [increases], financial flows will inevitably follow then cultural and political influence. Whoever is able to build and control the infrastructure linking the two ends of Eurasia will rule the world.”

However, this notion presumes that infrastructure is a magic bullet to the problems facing societies with less-than-desired economic development. While one can easily imagine how a new highway can facilitate economic activity, such thinking assumes an institutional environment in which such projects are taking place that is conducive for economic development. On the contrary, for BRI projects to be contributors to economic development in the locales where they’re being deployed, decision makers must have in mind not merely the technological problem of implementing each project, but also the present economic, political, and social conditions existing in each locale.

Importantly, the benefits of some project may be the result of progress that has already occurred, rather than the spur for growth that such magic-bullet type thinking reflects. While it is indeed possible that highway, railway, and other projects can be implemented and utilized in value-adding manner, Coyne (2013, 84) indicates that the reverse case is equally plausible, “that investments in infrastructure are not the cause of initial growth but a consequence of past growth that makes subsequent investments feasible.” Such thinking demonstrates the folly of assuming that merely “[r]eplicating those conditions in other societies will necessarily lead to [positive economic outcomes]” (Coyne, 2013, 84).

Albert Hirschman’s notion of “trait-making” versus “trait-taking” with respect to development projects provides us some useful intuition. Trait-making refers to the decision to introduce new inputs and processes—including technological capabilities, institutions, sociopolitical conditions and cultural values—required for efficient production to achieve some desired output (Hirschman, 1967, 140). On the other hand, trait-making refers to the decision to accept certain inputs and processes (i.e. traits) as “temporarily unchangeable aspects of the environment” (Hirschman, 1967, 120).

For planners, there is a danger with respect to both of these characteristics. Insofar as development projects are introducing “new activities into a pre-existing environment”, Hirschman (1967, 134) argues that such projects “...are likely to imply far more would be

trait-making than is commonly realized.” The job of the planner, then, is “to uncover the most significant economic and sociopolitical changes on which the success of the project is implicitly premised.” As such, the “neglect of the implicit trait-making aspects, ambitions, or premises of projects”, argues Hirschman (1967, 137), is one of the fatal flaws of development projects that fail.

On the other hand, there are also risks with respect to trait-taking that endanger the success prospects of development projects. To the extent there are economic, political, and social qualities that are already not conducive to promoting growth, development projects may have the unintended consequence of exacerbating those traits. Of this prospect, Hirschman (1967, 124). writes, “One of the dangers in trait-taking is that the undesirable or backward traits that are taken for granted in planning a project actually become more strongly entrenched and that the project thus fails to generate as much progressive change as is within its grasp.” Even with our guiding assumption that the intentions BRI decision makers are aligned with Beijing’s stated goals of “shared development” and “win-win cooperation” (State Council of the People’s Republic of China, 2015), outcomes characterized by further entrenchment of non-growth promoting traits are likely, especially given that BRI projects are highly concentrated in countries that occupy the bottom quartile of the Corruption Perceptions Index (Malik et al., 2021, 46).

Additionally, the manner in which BRI is being deployed takes local institutions for granted. BRI is conducted in one that presumes an endogenous functionality within the locales where implementation is taking place. A much more sensible starting point is to assume “a world where nothing is enforceable” and where “property rights and individual rights are totally insecure” (Rajan, 2004, 57). Additionally, the notion of BRI projects as a magic bullet for development overlooks myriad unintended consequences with respect to the underlying existing realities in the locales where projects are taking place.

These concerns (both on the trait-making and trait-taking fronts) are not on the radar for BRI decision makers. Despite vast differences in the locales in which BRI projects are taking place, very similar implementation methods have been deployed, very often without regard for local differences. One of the important traits that BRI decision makers appear

unable to alter are local perceptions where projects are being implemented. An increasingly large swathe of data existing suggesting strongly negative public sentiment towards China within BRI participant countries.¹⁰ Pre-existing traits such as these reduce the prospects for success further still. Here, BRI decision makers lack the abilities to replace and/or manufacture the sentiments within recipient countries to achieve BRI aims.

President Xi’s vision for promoting economic development through BRI is contingent upon the notion that resources and institutions provided by an outside entity can be the exogenous shock necessary for societies to break out of the sub-optimal growth scenarios they appear to be locked into. The success prospects of some institutional change, its “stickiness”, to take hold wherever it is implemented is a function of the relationship between the proposed change and the indigenous agents and institutions in the previous time period (Boettke et al., 2008, 332–333). In the case of BRI, such outcomes range from the widespread adoption of Chinese technical and manufacturing standards to the development of consistent railway commerce between Europe and China.

In their efforts to enhance “unimpeded trade”, BRI decision makers are aiming to alter trade flows. However, international trade patterns—particularly the institutions of commercial law that undergird these flows—are “highly sticky” insofar as they are “indigenously-introduced endogenous” (IEN) institutions (Boettke et al., 2008, 339).¹¹ These institutions are unplanned in their development and evolutionary in their progression, including spontaneous orders such as norms, customs, and local practices that have evolved informally over time.¹² Thus, in addition to lacking the knowledge to supplant as well as forecast the least-cost methods of trade for individuals in recipient countries, BRI decision makers also underrate the endogeneity of international trade flows between BRI participant countries and China. To the extent that trade (especially cross-cultural trade) is facilitated by social distance reducing activities that increase trust between trading partners (Leeson, 2005,

¹⁰For instance, substantial changes in public sentiment within BRI countries towards China have forced politicians in a number of cases to cancel or mothball projects (Aamir, 2018, 2021; Balding, 2018; Custer et al., 2018; Mundy and Hille, 2019; Rolland, 2019b; Shepard, 2020a).

¹¹In their institutional taxonomy, Boettke et al. (2008, 334–336) contrast indigenously-introduced endogenous (IEN) institutions with foreign-introduced exogenous (FEX) institutions (e.g. IMF or World Bank policies introduced into some locale), as well as indigenously-introduced exogenous (IEX) institutions (e.g. Federalism in the USA; developed abroad, implemented internally).

¹²On the endogenous facilitation of commercial law and trade, see Benson (1989) and Leeson (2005, 2008b).

2008), Chinese SOEs (the primary implementers of BRI projects) are engaging implementation practices that *increase* social distance and mistrust between trading partners. To use the language of the institutional taxonomy set forth by Boettke et al. (2008, 334–336), BRI decision makers exhibit a pattern of deploying “foreign-introduced exogenous” means to effect “indigenously-introduced endogenous” ends. Because trading relationships are largely an IEN process, FEX methods will be ineffective.

The data indicates that these patterns have a lot to do with the manner in which projects are being implemented, particularly by Chinese SOEs. As Malik et al. (2021, 71–73) found, “BRI infrastructure projects are less likely to face major problems during implementation when they are undertaken by host country organizations.” Importantly, of BRI’s thousands of projects, projects being exclusively implemented by host country organizations make up only 14% of the BRI portfolio. This finding lines up with Hillman (2018), who found of China’s overseas infrastructure projects that 89% of the contractors were Chinese. In contrast, projects undertaken by host country organizations—or organizations neither from China nor the host country—are significantly less likely to encounter major problems during implementation (Malik et al., 2021, 71–72).¹³

A number of findings indicate the inability of BRI planners and decision makers to assess the pre-existing traits (especially local attitudes towards China) that are prone to affect project outcomes. For example, Malik et al. (2021, 1) found that, “35% of the BRI infrastructure project portfolio has encountered major implementation problems—such as corruption scandals, labor violations, environmental hazards, and public protests—but the Chinese government’s infrastructure project portfolio outside of the BRI has encountered fewer implementation problems.” Additionally, while BRI projects implemented exclusively by host country organizations have a problem prevalence rate of 10%, similar projects implemented exclusively by Chinese entities have a 40% problem prevalence rate (Malik et al., 2021, 72). Unsurprisingly, we’ve seen significant backlash from citizens within a few dozen BRI countries, including some so serious that projects have been cancelled or

¹³The Malik et al. (2021) comprehensive dataset of BRI projects defines four major types of implementation, including: (1) scandals, controversies, or alleged violations; (2) financial wrongdoing; (3) community or ecosystem harm; and (4) underperformance vis-a-vis project objectives.

scrapped. As Malik et al. (2021, 73) put it, “a growing number of politicians from [low- and middle-income countries] have cancelled or mothballed high-profile Chinese development projects because major changes in public sentiment have made it difficult for them to maintain close relations with China.”

In this respect, for projects to achieve the aims desired by BRI decision makers, a shift in the underlying preferences (including cultural norms and practices, income, economic and political institutions, etc.) and opportunities of individuals within that locale are necessary. Thus, BRI planners are likely to overlook the importance of those complementary, often informal institutions that permit their chosen projects to function. This extends down to cultural values and norms, as well as trading patterns and preferences (Aoki, 2001; Platteau, 2015). While the technological change associated with BRI investments can bolster economic activity, it is important to distinguish this from the endogenous processes in motion that contribute to international trade patterns.¹⁴

Massive infrastructure projects, themselves interventions into the market process, not only contribute to the discoordination of the plans of market actors, but also produce unintended, undesirable consequences throughout the economic system. Absent the coordinating mechanisms of market prices and profit/loss, it is at least equally as likely that such projects have no effect or the opposite effect. As Coyne (2013, 84–85) puts it, infrastructure projects “... do not fall from the sky in predefined and specified bundles, and decisions need to be made regarding the quantity and quality” of the projects being implemented. Accordingly, these projects do not themselves provide a solution to the economic problem facing BRI participants of how to best utilize scarce resources among competing usages.

¹⁴On the effects of religious and cultural proximity on international trade flows, see Helble (2007), Guiso et al. (2009), and Fourie et al. (2015). On the effects of co-ethnic networks on international trade, see for Rauch (2001), Casella and Rauch (2002), and Rauch and Trindade (2002), who have demonstrated the importance of co-ethnic networks in explaining international commercial behavior. See also Cowen (2004), who argues that free trade performs a significant role in promoting both economic activity and positive cross-cultural exchange.

3.4 Case Studies

For case studies, we will examine some of BRI’s flagship projects. This is a sensible approach, as it is these projects that have been touted for having the most transformational potential within the BRI. These projects tend to also be highly politically salient in addition to their reputation of possessing significant prospects in terms of economic growth. Two of our case studies, the Khorgos Gateway and the Gwadar Port, are both listed in the *South China Morning Post’s* “The Five Main Projects of the Belt and Road Initiative” (Arranz and Duhalde, 2017b).¹⁵ This is to say that these projects are not outliers, but are central to the functioning and performance of BRI. In evaluating these case studies, I will rely particularly upon Hirschman’s (1967) trait-making versus trait-taking taxonomy as a framework for analysis.

3.4.1 The Port of Gwadar & the China–Pakistan Economic Corridor

Touted as a “game changer” by Pakistan’s former prime minister, Nawaz Sharif, the China Pakistan Economic Corridor (CPEC) is widely regarded as the flagship project within the BRI (Arranz and Duhalde, 2017b). These ambitions are most apparent in the case of the southwestern Pakistani port and city of Gwadar. Referred to as CPEC’s “crown jewel”, China aspires to connect Kashgar in far west China to a deepwater port on the Pakistani coast through a network of highway and rail lines (Maçães, 2018, 43).¹⁶ China’s long term plan for the CPEC over the period of 2017-30 states that the orderly flow of economic factors in both China and Pakistan, “will significantly improve the resource allocation efficiency and bring into full-play the comparative advantage of each country” (Maçães, 2018, 60).

Having received \$500 million of BRI investment, China aims to have housing construction completed for 500,000 Chinese professionals in Gwadar by 2023. “If Kazakhstan serves

¹⁵Maçães (2018, 106, 156), for instance, refers to the Gwadar Port in Pakistan as “China’s flagship project”, and to BRI’s overall portfolio of projects in Pakistan as “the crown jewel of the initiative”. Likewise, Hillman (2020, 18, 47) refers to both Kenya’s Mombasa Railway and the Khorgos Gateway on the border of China and Kazakhstan as “flagship projects” of the BRI.

¹⁶While Gwadar attracts a great deal of attention, a significant amount of investment in power generation has already occurred within CPEC, with projected costs for the corridor potentially up to \$62 billion. The Chinese Embassy in Pakistan reported that, as of the end of 2018, 22 CPEC projects (worth \$18.9 billion) had been initiated or completed (Downs, 2017).

as China’s gateway to Europe,” Mações (2018, 43) points out, then “Pakistan is its gateway to the Indian Ocean,” and Pakistan “may become China’s California, granting it access to a second ocean and resolving the Malacca dilemma”. Embodying China’s high hopes for the CPEC, foreign minister Wang Yi stated, “if [BRI] is like a symphony involving and benefiting every country, then construction of the [CPEC] is the sweet melody of the symphony’s first movement” (Mações, 2018, 43).

CPEC embodies both trait-making and trait-taking characteristics. Of the former, BRI activity in Pakistan demonstrates a significant degree of trait-making in its aims that involve massive changes to the structure of Pakistani society and commercial life. Mações (2018, 62) captures this well in writing of Gwadar’s prospects, that “a quiet fishing village may soon become a major cosmopolis, a new Dubai.” Of the latter, BRI energy projects in Pakistan expand capacity by thousands of megawatts of power, which is much needed in a large country that faces chronic electricity shortages. As Downs (2017) points out, these developments have been a byproduct of “push factors” from China (i.e. foreign markets to export excess coal power generation equipment and project expertise) and “pull factors” from Pakistan (i.e. prioritizing the use of domestic coal to decrease power generation costs). Prioritizing investment in the already-existing commercial practice of coal-powered generation in Pakistan is thus emblematic of a trait-taking trajectory.

That said, BRI decision makers appear to underrate the extent to which their plans for Gwadar (and the CPEC, more generally) rely upon successful trait-making. As Mações (2018, 61) notes, “The vision for the city is suitably ambitious: the port will be combined with a new expressway, international airport, an industrial park, and even world-class tourism facilities”. Despite the stated goal of 500,000 incoming Chinese professionals moving to Gwadar for economic opportunity by 2023, little more than 1,000 people work at the port at this point.

Recent trends have not been encouraging for Gwadar’s growth prospects. For instance, the Chinese subsidized container services between the Pakistani city of Karachi and Gwadar—launched to target the untapped markets between seaports in Pakistan—has

severely under performed relative to its goals, which included improving the regional maritime trade of seafood, fruit, and minerals. With many empty containers, the ships pulling into Gwadar instead were used to load and unload CPEC-related construction equipment, machinery, and other cargo. In September 2019, China’s COSCO Shipping Lines terminated their Karachi–Gwadar service due to inadequate cargo handled at the port, slow construction of the Gwadar Free Trade Zone, and a lack of use of the port for transit to Afghanistan (Chaudhury, 2019).

Better analysis of the implicit trait-making nature of the Gwadar Port and other CPEC projects would have permitted BRI decision makers to appreciate that their projects are largely unwelcome by the local populace. As Aamir (2021) described, “The main road leading to Gwadar Port has been blocked [for months] by thousands of locals in a sit-down protest. They are demanding basic amenities, including water and power, as well as access to the sea for fishermen.” Likewise, the manner in which project materials are being procured relative to expectations is a major source of contention for citizens, as “China only procures sand and gravel locally for construction projects... All other raw materials are imported from China, leaving very little for local industry” (Aamir, 2021). Gwadar Port and the CPEC presents a salient example that promoting development is not merely a technical problem, but one that is dependent upon an appreciation of local realities and institutions that pertain to any project’s prospects for boosting economic growth.

3.4.2 Khorgos Gateway, China/Kazakhstan border

Situated on the border of China and Kazakhstan, and occupying “one of the furthest points on Earth from any ocean”, the Khorgos Gateway connects China and Kazakhstan by rail (Arranz and Duhalde, 2017a). A key component of the Silk Road Economic Belt (SREB)—BRI’s major overland component—the Khorgos Gateway is a major dryport designed to better facilitate commercial freight travel over trail. Railway track in China differs from the standard track in Central Asia by approximately 9 centimeters (Arranz and Duhalde, 2017a). To address this, the dryport at Khorgos is made up of three enormous rail-mounted gantries that hoist cargo arriving from Chinese trains onto trains on the

Kazakh tracks destined to make the 5,000+ mile journey to Europe (Ruehl, 2019).

A major rationale for the Khorgos Gateway is the advantage of speed that railway enjoys over maritime travel, as well as a less expensive alternative to shipping by air. For instance, a journey carrying freight from the city of Yiwu in eastern China to London takes approximately half the time (around 20 days) compared to the time similar freight would take to arrive via maritime travel (around 40 days) (Arranz and Duhalde, 2017a). Along with the dryport, BRI planners have declared Khorgos a Special Economic Zone (SEZ), and as such, have aspirations for it to become a commercially flourishing hub just like the major SEZs along China's east coast. Alongside the city of Khorgos (on the Chinese side of the border), which has a population around 100,000 people, Kazakh decision makers have invested in a "purpose-built village", Nurkent, which they hope grows in size to complement Khorgos (Standish, 2019). Indeed, productivity at Khorgos has increased. In the four years from 2015 (the start of construction) to 2019, the dryport handled over 180,000 TEUs a year, and the port's chief operations officer expects this to increase to nearly 500,000 TEUs a year by 2023 (Ruehl, 2019).

Relative to the projects that comprise the CPEC, BRI decision makers have taken a trait-taking approach with respect to Khorgos. As (2019) points out, Khorgos is somewhat non-representative of most other BRI projects as China "is not a lender, builder, operator, or majority owner of the dry port."¹⁷ By the same token, much of the reported upside of Khorgos as a transformational global trade hub is misguided, especially along the margins of the project's scope for impacting trade between Europe and China. This is primarily because only a small percentage of goods shipped through Khorgos are Europe-bound. As (2019) describes, "Eighty percent of the goods shipped through Khorgos go to the countries of the former Soviet Union, and 35 to 40% go to Uzbekistan alone. The number of containers that actually make it all the way to Western Europe is a minute fraction of the millions of containers carried annually by ship from China to European ports." In this respect, Khorgos is more likely to be an effective regional trade hub for Chinese goods bound for

¹⁷China's COSCO Shipping owns a 49% stake of the Khorgos dry port, while the majority is held by the Kazakh state railways corporation. The port is operated by DPWorld, a publicly-traded company based out of Dubai, UAE (Ruehl, 2019).

Central Asia, reflective of freight patterns that have long been occurring (Ruehl, 2019).

However, evaluating the success of Khorgos based upon TEUs per year falls into the pattern of assessing projects based upon clearly observable outputs (Coyne, 2013, 82). Such a standard does not reveal much as to whether the investments at Khorgos are facilitating commercial exchange opportunities that were not otherwise available. Additionally, it has been revealed that freight travel through Khorgos by rail has only been possible because of massive subsidies of up to 40% provided by the Chinese government to incentivize trade through Central Asia (Ruehl, 2019; Standish, 2019). According to Leng (2019), subsidies varying from US \$1,000 to \$7,500 per container were offered to Chinese shippers to encourage this sort of economic activity through Khorgos. Though there is increased traffic headed from China to Central Asia and Europe, (2019) reports that many of the cargo containers returning by rail from Europe through Khorgos are empty. What's more, a report—confirmed by China's state-run *Global Times*—confirmed that many exporters transported empty containers from China to Europe in order to receive state subsidies (Standish, 2019).

Thus, the situation at Khorgos presents a mixed result. On the one hand, BRI decision makers have embraced more of a trait-taking approach in coming alongside regional trade partners to invest in bolstering ongoing patterns of trade between China and Central Asia. Indeed, the situation at Khorgos appears much less dysfunctional relative to China's BRI portfolio in Pakistan, especially in Gwadar. However, with the reports of massive subsidies for trade through Khorgos, we can also see misguided trait-making efforts to replace the far cheaper, maritime shipping as the dominant mode of long distance trade with the much more expensive long distance trade via rail. Hillman (2020, 46), for example, reports that approximately 70% of railway shipments through Khorgos are westbound traffic, while on eastbound trips, containers are often empty and still others are sent by to China by sea. As Leng (2019) puts it, “[t]hese routes are an effective advertising device for selling the Belt and Road's overland dimensions which despite the hype, will not challenge the dominance of maritime trade.” The extent to which Khorgos remains one of the relatively successful BRI cases will be dependent upon BRI decision makers' continued embrace of trait-taking

decisions (i.e. conceiving of Khorgos as a regional infrastructure investment) versus trait-making decisions (i.e. conceiving of Khorgos as a key input into supplanting maritime trade with trade via rail).

3.4.3 Rajapaksa Airport, the Melaka Gateway, and Kenya’s Standard Gauge Railway

A number of BRI projects are of such massive scale that they are placed in, or close to, the category of “megaproject” (i.e. over \$1 billion in investment). Flyvbjerg (2017) argues that the “iron law of megaprojects” is: “Over budget, over time, under benefits, over and over again.” Hirschman (1967) referred to such projects as “privileged particles of the development process”. These descriptions are consistent with a number of BRI projects.¹⁸

The following BRI projects—including Sri Lanka’s Rajapaksa Airport, Malaysia’s Melaka Gateway, and Kenya’s Standard Gauge Railway—have a common thread running through them, namely that BRI decision makers, “[w]ere unaware to what extent the good fortune of their project was implicitly premised on trait-making, that is, on making over the social, economic, and human reality of their country in one way or another” (Hirschman, 1967, 129). I will briefly describe each project, followed by further analysis.

Sri Lanka’s Rajapaksa International Airport and Malaysia’s Melaka Gateway

In Sri Lanka, the +\$200 million Mattala Rajapaksa International (HRI) Airport serves as a notable example of unrecognized trait-making that ultimately undid a project. As Shepard (2016) comments, Rajapaksa airport is a beautiful, world-class facility in southern Sri Lanka. The problem is that there are virtually no passengers, and despite that, the airport is “fully in service, despite the lack of a viable reason for it to be.” The location was selected because it is close to Hambantota, a city which planners hoped would be “transformed into Sri Lanka’s second most prestigious city”, including a \$1.4 billion deep water port, a large

¹⁸BRI projects associated with major implementation problems related to “underperformance vis-a-vis original objectives” are heavily concentrated in four countries: Indonesia, Sri Lanka, Pakistan, and Malaysia. Additionally, Kenya and Ethiopia also occupy spots in the top 10 countries with BRI projects of this description (Malik et al., 2021, 68–69).

industrial zone, a world-class cricket stadium, and many new high rises for people to live.¹⁹

Unfortunately for Sri Lanka, this has not been borne out. Unused terminals at the airport are now being used as a storehouse for rice, tarmacs are being rented out as long-term parking lots for unneeded jets, and hundreds of soldiers and police officers have been mobilized at times to keep out elephants and other wild animals. At this point, the airport generates more revenue from non-flight related activities than flights (Shepard, 2016).

In Malaysia, the Melaka Gateway was “supposed to have been the catalyst that would completely altar the face of Melaka”, transforming the southwestern region of Malaysia “[f]rom a low-key epicenter of traditional cultures... to a modern, booming, economic powerhouse” spanning four artificial islands in the Strait of Malacca (Shepard, 2020b). Aimed at rivaling the dominance Singapore’s Tuas Port (only 200 kilometers away), analysts suggest this outcome is highly implausible, especially since Malaysia’s top three ports only run at about 70% capacity. Concurring, a 2015 study by the World Bank concluded this port project, “simply wasn’t needed” (Shepard, 2020a).

Unfortunately for the local populace, most of whom are fishermen, the land reclamation and dredging has already begun. This process damaged the coral reef, and while damaging the coral reef, with one fisherman saying, “This place once had a lot of fish. Now [we] don’t... Everything [is] gone.” In November 2020, the Melaka Gateway project was officially cancelled, adding to a number of cancelled and delayed BRI projects in Malaysia including two gas pipelines and rail lines (Sukumaran, 2020).

Kenya’s standard-gauge railway (SGR)

Built at a cost of +\$4.7 billion and initially intended to link Kenya with Rwanda and Uganda, Kenya’s standard-gauge railway (SGR) is the country’s most expensive infrastructure project (Mureithi, 2021). One of BRI’s flagship projects, Kenyan president Uhuru Kenyatta touted that building the SGR would “greatly enhance [Kenya’s] competitiveness” (Hillman, 2020, 196), in the process creating tens of thousands of jobs, reducing travel times,

¹⁹In July 2017, the Sri Lankan government decided on a debt-for-equity swap, opting to grant China a 99 year lease of the Hambantota Port rather than service a \$8 billion loan at 6% owed to the Chinese (Hurley et al., 2019).

and boosting regional trade (Mboya, 2021). While the SGR link connecting coastal city of Mombosa to Kenya's capital, Nairobi, was completed in 2017, the SGR has since run into significant problems. Dubbed locally as China's "Railroad to Nowhere", the China Road & Bridge Corporation (CRBC) halted construction in July 2019 after China withheld \$4.9 billion needed to complete the project. Rather than spanning all the way from the Kenyan coast to Uganda—a route that was projected to account for over one third of the railway's traffic (Hillman, 2020, 196)—the SGR ends about 75 miles west the Kenyan capital, Nairobi (Herbling and Li, 2019).

While many Kenyans are pleased with the "Madaraka Express"—the passenger-carrying component of SGR between Mombosa and Nairobi, the profitability of the SGR depends upon freight traffic. In light of this, the Kenyan government forced importers in 2018 using the Mombosa port to ship their goods using the SGR rather than the preferred, cheaper mode of transport, long-haul trucking (Beja, 2018; Mboya, 2021). While these measures unsurprisingly increased freight traffic, such traffic would have to increase by approximately eight times its 2018 levels to become profitable (Omondi, 2017). As of 2021, only half of the planned project is complete, as no funds for the remaining phase of the SGR are available given Kenya has fallen behind on paying their debt payments to the Export-Import Bank of China (Mboya, 2021). While Kenyan and Chinese decision makers agreed that China would manage the SGR until 2023, the Chinese company operating the SGR suggested it may not hand over SGR operations until Kenya Railways pays the nearly \$400 million it is owed. After significant public outcry, the Kenyan government refused to release the contracts for the SGR despite a freedom of information request, a move that further promotes local mistrust in government dealings with China (van Staden, 2021).

Further Analysis

In each of the cases outlined above, BRI decision makers have envisaged bringing to bear heightened connectivity and coordination—previously non-existent or functioning at a lower-than-desired level—through centrally-planned patterns of exchange. Within their project selection process, BRI decision makers presumed to have the knowledge required to

design and implement their chosen projects in a manner producing value over and above the opportunity cost of those resource expenditures. But as BRI planners have discovered, “[i]nternational corridors are as easy to imagine as they are difficult to implement” (Hillman, 2018, 204). As is the case of Sri Lanka’s Mattala Rajapaksa International Airport, Malaysia’s Melaka Gateway, and Kenya’s standard-gauge railway, BRI decision makers failed “[t]o uncover the most significant economic and sociopolitical changes on which the success of the project is implicitly premised” (Hirschman, 1967, 134).

In Sri Lanka, frequent air travel through Mattala Rajapaksa International Airport was premised upon the development of the southern Sri Lankan port city of Hambantota into a thriving metropolitan center. In Malaysia, the development of the Melaka Gateway as a competitor to the dominant Singaporean ports in the region was premised upon shippers substituting away from functional trade-routes to new ones. In Kenya, profitable usage of the SGR—as well as completion of the SGR connecting Kenya to Uganda and Rwanda—was premised upon shippers in Mombasa choosing to ship their imports to Nairobi via rail rather than the cheaper option, long-haul trucking.

As Hirschman (1967, 137) put it, “Project analysts’ neglect of the implicit trait-making aspects, ambitions, or premises of projects or, in other words, their insufficient appreciation of basic traits that must be either accommodated or eradicated but cannot be simply ignored.” Each of these cases are indicative of the fallacy discussed by Easterly (2002, 29), namely that GDP growth is proportional to the share of investment spending in GDP, or, “that production [is] proportional to machines”. In staking the success of projects highly dependent upon a high degree of successful trait-making, BRI decision makers undermined their own efforts to achieve “balanced and sustainable development” and heightened connectivity (State Council of the People’s Republic of China, 2015).

3.5 Conclusion

This paper has argued that the successes of China’s Belt and Road Initiative are constrained by a means-ends problem. Because BRI dealings take place within the political context, planners are unable to access the institutionally contingent information contained in market

price signals. By conceiving of the development process in part as a technological problem to be addressed through investment in massive infrastructure projects, BRI decision makers deploy means that are not themselves inputs into solving the economic problem of how individuals in societies where BRI projects are taking place can best utilize their scarce resources to solve their economic problems.

A number of interesting questions remain with respect to China's overseas activities. For instance, given that approximately 90% of Chinese development projects are carried out by Chinese SOEs, why is it that BRI projects are much more problematic than non-BRI projects (Malik et al., 2021)? Since both actors are non-market facing, both face the planner's problem, yet yield different outcomes as far as implementation success goes. Of this, there is important comparative institutional analysis to be done regarding the mechanisms that comprise BRI-contracted projects versus non-BRI projects.

As Hayek (1945) pointed out, the "economic problem" facing societies is not merely "a problem of how to allocate 'given' resources," as if such data were a technological problem to be solved by a single mind. Instead, the challenge facing societies is an economic problem, one that, "arises when mutually conflicting ends are present, when choices must be made among them" (Buchanan, 1964). Through the lenses of a technological problem, it is easy to imagine how large-scale infrastructure projects could pose a solution to sub-optimal economic growth. As Standish (2019) puts it with respect to BRI projects, "there is a reason that lots of these gaps in global infrastructure that China is trying to fill exist in the first place... It's because they are not so commercially appealing."

This sort of view focuses on that which is seen (i.e. the construction of a new deepwater port, highway, or railway) and neglects the unseen (i.e. that which the resources allocated towards the BRI project would have went to). While not all cases of spontaneous order outperform state intervention, it is unlikely that BRI's goals involving broad scale social coordination can be achieved through the usage of non-market means. Fundamentally, this is the binding constraint upon BRI's successes. As Hillman (2020, 8) puts it, "Infrastructure is often touted as a solution to society's employment and productivity woes, but the reality is that done poorly, projects destroy more value than they create."

Appendix A: Chapter 1

Table A.1: Sampled Countries

Albania	Chile	Iran	Morocco	South Sudan
Algeria	Colombia	Jamaica	Mozambique	Sri Lanka
Angola	Comoros	Jordan	Myanmar	Sudan
Argentina	Congo, Dem. Rep.	Kazakhstan	Namibia	Suriname
Armenia	Congo, Rep.	Kenya	Nepal	Tajikistan
Azerbaijan	Costa Rica	Kyrgyz Republic	Niger	Tanzania
Bahamas, The	Cote d'Ivoire	Laos	Nigeria	Togo
Bangladesh	Djibouti	Lebanon	Oman	Tonga
Belarus	Dominica	Lesotho	Pakistan	Turkey
Benin	Ecuador	Liberia	Pap. New Guinea	Turkmenistan
Bolivia	Egypt	Macedonia, FYR	Peru	Uganda
Bosnia & Herz.	Eq. Guinea	Madagascar	Philippines	Ukraine
Botswana	Eritrea	Malawi	Romania	Uruguay
Brazil	Ethiopia	Malaysia	Russia	Uzbekistan
Bulgaria	Fiji	Maldives	Rwanda	Vanuatu
Burkina Faso	Gabon	Mali	Samoa	Venezuela
Burundi	Ghana	Mauritania	Senegal	Vietnam
Cabo Verde	Guinea	Mauritius	Serbia	Yemen, Rep.
Cambodia	Guyana	Mexico	Seychelles	Zambia
Cen. African Rep.	India	Mongolia	Sierra Leone	Zimbabwe
Chad	Indonesia	Montenegro	South Africa	

Table A.2: Summary Statistics

	N	Mean	Std. Dev.	Min.	Max
ChinaAid*Democracy dummy	1667	10.279	9.84	0.00	24.344
ChinaAid	1667	15.428	8.21	0.00	24.344
ChinaAid/GDP	1667	4.324	8.42	0.00	113.028
Official Development Aid	1587	19.548	1.387	13.162	23.16
Polity	1532	2.845	5.724	-9.00	10.00
Polity _{t-1}	1435	2.824	5.727	-9.00	10.00
Democracy dummy	1667	.679	.467	0.00	1.00
Log GDP per capita	1667	7.628	1.166	4.718	10.369
Log GDP per capita _{t-1}	1562	7.61	1.169	4.718	10.358
GDP growth	1647	2.72	4.801	-47.591	32.997
Log population	1667	16.042	1.843	11.154	21.015
Urban population	1661	48.574	21.479	8.682	95.24
Population density	1638	112.178	190.241	1.573	1654.673
Regime age	1586	8.45	8.475	1.00	47.00
Regime stability	1585	15.319	10.638	1.00	69.00
Natural resource rents	1654	10.689	11.983	.001	65.35
Electoral democracy index	1,607	0.459	0.215	0.067	0.912
Liberal democracy index	1,607	0.327	0.212	0.005	0.861
Participatory democracy index	1,607	0.283	0.159	0.008	0.776
Log China aid per capita (Dem.)	1,316	6.974	5.208	0	15.762
Log China aid per capita	1,316	10.356	2.154	3.702	15.762
Log ODA per capita	1,587	10.424	1.347	4.097	13.659

Table A.3: Data Description

Variable	Definition and source
ChinaAid	The logarithm of estimated total external debt stock owed to China in each period in current USD; this series includes debt by private and public entities to Chinese state-owned creditors. It includes only debt from direct loans, and excludes short-term trade debt, swap debt and portfolio debt (Horn et al., 2019).
ChinaAid\timesDemocracy	The logarithm of estimated total external debt stock owed to China by country i in period t in current USD, conditional upon country i having a Polity score > 0 in time t . This series includes debt by private and public entities to Chinese state-owned creditors. It includes only debt from direct loans, and excludes short-term trade debt, swap debt and portfolio debt (Horn et al., 2019).
ChinaAid/GDP	Estimated total external debt stock owed to China in percent of debtor GDP; this series includes debt by private and public entities to Chinese state-owned creditors. It includes only debt from direct loans, and excludes short-term trade debt, swap debt and portfolio debt (Horn et al., 2019).

Variable	Definition and source
Polity2	Specified simply as “Polity” in the paper, this variable is an index of political decentralization that ranges from -10 (total autocracy) to +10 (total democracy). The Polity IV Project refers to this variable as its “Polity 2” measure, which is a modified version of its standard Polity variable to facilitate use of the Polity measure in time series analyses. The index is computed by subtracting a country’s autocracy score from its democracy score (Marshall et al., 2018).
ODA	The logarithm of net official development assistance (ODA) , measured in current \$US, consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. It includes loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent) (World Bank, 2019).
Log GDP per capita	Logarithm of gross domestic product per capita (PPP constant 2011 international dollars) (World Bank, 2019).
GDP Growth	Average annual growth rate of GDP (World Bank, 2019).

Variable	Definition and source
Log Population	Logarithm of total population (World Bank, 2019).
Population Density	Midyear population divided by land area in square kilometers (World Bank, 2019).
Population Density	Midyear population divided by land area in square kilometers (World Bank, 2019).
Urban Population	Percentage of population living in urban areas (World Bank, 2019).
Regime Age	Database of Political Institutions' variable <i>Yrsoffc</i> , which measures how many years the chief executive has been in office (Cruz et al., 2018).
Regime Stability	Database of Political Institutions' variable <i>Tensys</i> , which measures how long the country has been either autocratic or democratic (Cruz et al., 2018).
Natural resource rents	Total natural resources rents as a percentage of GDP (World Bank, 2019).
Electoral democracy index	V-Dem Institute variable measuring the core value of making rulers responsive to citizens, achieved through electoral competition for the electorate's approval under circumstances when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and elections affect the composition of the chief executive of the country (Coppedge et al., 2018).

Variable	Definition and source
Liberal democracy index	V-Dem Institute variable measuring the extent to which individual and minority rights are protected against the tyranny of the state and the tyranny of the majority. The liberal model takes a "negative" view of political power insofar as it judges the quality of democracy by the limits placed on government (Coppedge et al., 2018).
Participatory democracy index	V-Dem Institute variable measuring the extent to which active participation by citizens exists in all political processes, electoral and non-electoral (Coppedge et al., 2018).

Table A.4: Robustness Test 1

	OLS			Fixed Effects			GMM	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ChinaAid per capita×Democracy	0.258*** (<.001)	0.271*** (<.001)	0.262*** (<.001)	0.473*** (<.001)	0.492*** (<.001)	0.471*** (<.001)	0.565*** (<.001)	0.567*** (<.001)
ChinaAid per capita	-0.201*** (<.001)	-0.226*** (<.001)	-0.213*** (<.001)	-0.407*** (<.001)	-0.431*** (<.001)	-0.436*** (<.001)	-0.363*** (<.001)	-0.324*** (<.001)
ODA per capita	0.0106 (0.675)	0.00364 (0.922)	-0.0374 (0.322)	0.0392 (0.675)	0.0590 (0.493)	0.0612 (0.454)	-0.0816 (0.775)	-0.218 (0.546)
Polity _{t-1}	0.714*** (<.001)	0.702*** (<.001)	0.704*** (<.001)	0.402*** (<.001)	0.394*** (<.001)	0.399*** (<.001)	-0.00759 (0.831)	-0.0235 (0.681)
Polity _{t-2}	0.0565 (0.188)	0.0546 (0.202)	0.0631 (0.163)	-0.0242 (0.590)	-0.0300 (0.509)	-0.0159 (0.702)	-0.0195 (0.342)	-0.0117 (0.606)
GDP per capita _{t-1}		0.0210 (0.701)	-0.0486 (0.392)		0.566 (0.119)	0.397 (0.290)	0.471 (0.218)	0.639 (0.188)
GDP growth		-0.0097 (0.248)	-0.0093 (0.299)		-0.0228* (0.043)	-0.0218 (0.053)	0.00261 (0.876)	-0.0031 (0.877)
Log population		-0.0366 (0.214)	-0.0545 (0.067)		1.076 (0.317)	1.394 (0.384)	12.91 (0.732)	-59.80 (0.450)
Urban population		0.0007 (0.750)	0.003 (0.228)		-0.0243 (0.456)	-0.0533 (0.242)	0.0501 (0.971)	0.889 (0.676)
Regime stability			0.0023 (0.430)			-0.0227 (0.065)		-0.0308 (0.655)
Regime age			0.00310 (0.588)			0.0191 (0.085)		0.0235 (0.792)
Population density			0.0002 (0.612)			-0.0071 (0.313)		0.143 (0.513)
Natural resource rents			-0.00335 (0.361)			-0.00913 (0.281)		-0.00828 (0.558)
Constant	0.945** (0.004)	1.662 (0.100)	2.648* (0.013)	1.981 (0.055)	-18.22 (0.262)	-19.94 (0.393)	-0.238 (0.686)	0.533 (0.361)
Observations	1094	1076	1038	1094	1076	1038	1010	972
Country FE	No	No	No	Yes	Yes	Yes	Yes	Yes
Period FE	No	No	No	Yes	Yes	Yes	Yes	Yes
AR(2)	-	-	-	-	-	-	0.36	0.79
No. instruments	-	-	-	-	-	-	31	31
Hansen test	-	-	-	-	-	-	0.79	0.52

Note: *** p<0.01, ** p<0.05, * p<0.10. The dependent variable is Polity_{i,t}. Both ChinaAid per capita variables are reported in logs terms. Columns 7 and 8 report System GMM results. AR(2) tests for autocorrelation, with the null hypothesis that the error term exhibits no second-order serial correlation. The null hypothesis of the Hansen test holds that included and excluded instruments are valid.

Table A.5: Robustness Test 2

	Electoral dem.			Liberal dem.			Participatory dem.		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ChinaAid×Democracy	0.00173** (0.001)	0.00175** (0.001)	0.00153** (0.005)	0.00115** (0.001)	0.00115** (0.001)	0.00104** (0.005)	0.000798** (0.003)	0.00079** (0.003)	0.00069* (0.011)
ChinaAid	-0.00144** (0.008)	-0.00143** (0.009)	-0.00120* (0.030)	-0.00103** (0.005)	-0.00103** (0.005)	-0.00089* (0.017)	-0.000695* (0.012)	-0.00068* (0.014)	-0.00057* (0.042)
ODA	0.00037 (0.880)	0.00037 (0.885)	0.000042 (0.986)	0.00031 (0.871)	0.00024 (0.903)	-0.00041 (0.834)	-0.00011 (0.935)	-0.00017 (0.910)	-0.00062 (0.673)
GDP per capita _{t-1}		0.0121* (0.044)	0.0110 (0.085)		0.00735 (0.083)	0.00663 (0.128)		0.00450 (0.233)	0.00315 (0.430)
GDP growth		0.000517 (0.098)	0.000507 (0.160)		0.000293 (0.185)	0.000366 (0.173)		0.000245 (0.108)	0.000252 (0.157)
Log population		0.0100 (0.735)	0.0127 (0.677)		0.00995 (0.659)	0.00770 (0.735)		0.00107 (0.955)	-0.00292 (0.887)
Urban population		0.00027 (0.727)	-0.00011 (0.898)		-0.00042 (0.467)	-0.00071 (0.274)		-0.000074 (0.883)	-0.00031 (0.575)
Regime stability			-0.00068 (0.096)			-0.00071* (0.040)			-0.000320 (0.192)
Regime age			-0.00033 (0.339)			-0.000155 (0.540)			-0.00021 (0.278)
Population density			-0.00016*** (0.000)			-0.00012*** (0.000)			-0.000063** (0.003)
Natural resource rents			-0.000002 (0.993)			-0.00002 (0.920)			0.000005 (0.968)
Electoral dem. _{t-1}	0.800*** (0.000)	0.795*** (0.000)	0.780*** (0.000)						
Liberal dem. _{t-1}				0.829*** (0.000)	0.825*** (0.000)	0.814*** (0.000)			
Participatory dem. _{t-1}							0.848*** (0.000)	0.845*** (0.000)	0.836*** (0.000)
Constant	0.0934* (0.046)	-0.161 (0.735)	-0.141 (0.772)	0.0562 (0.093)	-0.132 (0.720)	-0.0419 (0.910)	0.0505 (0.066)	0.00748 (0.980)	0.114 (0.727)
Observations	1436	1417	1348	1436	1417	1348	1436	1417	1348
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: *** p<0.01, ** p<0.05, * p<0.10. The dependent variables are from V-Dem coppedge2018v, including the electoral democracy index (columns 1-3), the liberal democracy index (columns 4-6), and the participatory democracy index (columns 7-9). Both ChinaAid per capita variables are reported in logs terms. Each test employs country and period fixed effects.

Table A.6: Robustness Test 3

	Electoral dem.			Liberal dem.			Participatory dem.		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ChinaAid per capita×Democracy	0.00453** (0.001)	0.00472*** (0.001)	0.00415** (0.004)	0.00328*** (0.000)	0.00340*** (0.000)	0.00308** (0.002)	0.00216** (0.001)	0.00221*** (0.001)	0.00195** (0.005)
ChinaAid per capita	-0.00478* (0.017)	-0.00497* (0.015)	-0.00487* (0.013)	-0.00283 (0.053)	-0.00293* (0.048)	-0.00285* (0.043)	-0.00227* (0.028)	-0.00227* (0.035)	-0.00217* (0.045)
ODA per capita	-0.00007 (0.979)	0.00027 (0.922)	0.00074 (0.765)	0.00034 (0.853)	0.00047 (0.795)	0.00027 (0.879)	-0.00022 (0.889)	-0.00020 (0.900)	-0.00027 (0.861)
GDP per capita _{t-1}		0.0168* (0.048)	0.0157 (0.086)		0.0106 (0.059)	0.0101 (0.089)		0.00671 (0.188)	0.00479 (0.381)
GDP growth		0.000151 (0.684)	0.00004 (0.930)		-0.000009 (0.969)	0.000008 (0.980)		0.00007 (0.710)	0.00005 (0.822)
Log population		-0.0148 (0.703)	0.0191 (0.663)		-0.00868 (0.764)	0.0140 (0.650)		-0.0135 (0.540)	-0.00325 (0.891)
Urban population		0.0008 (0.450)	0.00024 (0.845)		-0.00017 (0.828)	-0.00055 (0.544)		0.00014 (0.822)	-0.000190 (0.782)
Regime stability			-0.000607 (0.201)			-0.000646 (0.109)			-0.000256 (0.346)
Regime age			-0.000233 (0.635)			-0.0000575 (0.871)			-0.000123 (0.626)
Population density			-0.000227*** (0.001)			-0.00017** (0.001)			-0.000092** (0.004)
Natural resource rents			0.000140 (0.698)			0.000170 (0.461)			0.0000740 (0.613)
Electoral dem. _{t-1}	0.693*** (<.001)	0.689*** (<.001)	0.663*** (<.001)						
Liberal dem. _{t-1}				0.732*** (<.001)	0.729*** (<.001)	0.713*** (<.001)			
Participatory dem. _{t-1}							0.773*** (<.001)	0.774*** (<.001)	0.765*** (<.001)
Constant	0.158*** (<.001)	0.248 (0.690)	-0.224 (0.747)	0.0893*** (<.001)	0.166 (0.724)	-0.146 (0.771)	0.0761*** (<.001)	0.243 (0.492)	0.122 (0.751)
Observations	1179	1160	1112	1179	1160	1112	1179	1160	1112
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: *** p<0.01, ** p<0.05, * p<0.10. The dependent variables are V-Dem's electoral democracy index (columns 1-3), liberal democracy index (columns 4-6), and participatory democracy index (columns 7-9). Explanatory variables of interest, ChinaAid per capita×Democracy & ChinaAid per capita, are reported in log terms. Each test employs country and period fixed effects.

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Curriculum Vitae

Gregory W. Caskey received his Master of Arts and Ph.D. in Economics from George Mason University in 2021 and 2022, respectively. During his time at George Mason University, he was a Graduate Research Fellow in the F.A. Hayek Program for Advanced Study in Philosophy, Politics, and Economics at the Mercatus Center as well as a Humane Studies Fellow and a Summer Research Fellow at the Institute for Humane Studies. His work has been published in *Public Choice*, *Business Ethics Quarterly*, and the *Journal of Markets and Morality*. Prior to entering graduate school, Greg taught economics and Asian Studies at the high school level at the Delaware Military Academy in Wilmington, Delaware. He holds Master of Arts and Bachelors of Arts degrees from the University of Delaware. Beginning in Fall 2022, Greg will begin as an Assistant Professor of Economics in the Tommy & Victoria Baker School of Business at The Citadel in Charleston, South Carolina.