

The Case for Charter Cities Within the Effective Altruist Framework

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Founded in 2017, the Charter Cities Institute (formerly the Center for Innovative Governance Research) is a nonprofit dedicated to building the ecosystem for charter cities. Economic growth is unparalleled in its ability to alleviate extreme poverty. We work to accelerate this process by improving governance—the single most important determinant for economic growth in low and middle-income countries.

The Charter Cities Institute collaborates with new city developers, entrepreneurs, governments, and policy experts to foster the relationships necessary to create charter cities and develop the technical expertise to govern them successfully.

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Introduction

Effective altruism posits that rigorous evidence and analysis should be used to direct attention and resources to the causes that do the most good. Global poverty, animal welfare, and long-term risk mitigation are the three broad cause areas that have attracted the greatest attention from the effective altruist community (Centre for Effective Altruism 2016). Within the global poverty sphere, anti-malaria efforts, deworming initiatives¹, and direct cash transfer programs are among the interventions most widely credited with providing the most cost-effective improvement in welfare for the global poor than any other intervention (GiveWell). Millions of the world's poor have benefitted from the contributions of the highly effective organizations that perform such interventions.

While these efforts are rightly well-regarded, long-run economic growth is unrivaled in its power to alleviate poverty. The rapid ascent of millions from extreme poverty in the 18th century to the levels of wealth enjoyed in developed countries today far surpasses the effect of any contemporary anti-poverty intervention (Pritchett 2018). The growth miracles that began in the last half-century in China, India, and elsewhere as a direct result of institutional reforms have dramatically raised standards of living in what were recently desperately poor nations. Today, the quality of institutions in low-income countries lags far behind that of middle and high-income countries, and can explain their economic stagnation (Acemoglu, Johnson, and Robinson 2004). Adopting the right institutional reforms

that improve governance and the rule of law (with a focus on the business environment) can set these countries on a faster track to convergence with the world's more advanced economies.

Charter cities offer a viable mechanism to stimulate growth in these countries by establishing special jurisdictions that have the authority to, starting from a blank slate, adopt the best practices to improve the business environment. Charter cities can adopt best practices in business registration procedure, labor law, tax administration, commercial dispute resolution, and other areas that the host country may be hesitant or unwilling to reform on a nationwide level. Charter cities are built on greenfield sites to avoid the political challenges of implementing such drastic reforms in an existing city, where elites have incentives to not just generate new wealth, but protect captured rents. (World Bank 2017). Additionally, charter city projects are largely financed by private sources to protect the host country from financial risk. Private financing also establishes strong incentives for developers to make decisions aimed at making the city as successful as possible over the long term, measured through outcomes like increasing land values (Lutter 2019).

Charter cities offer individuals that move there an opportunity to flourish economically that would be nearly impossible to achieve under the institutions of the host country. It's likely

¹ There is an ongoing academic debate about the effectiveness of deworming. Majid, Kang, and Hotez (2019) provides a thorough summary of the debate. Four of GiveWell's top eight charities focus on deworming.

that many of these individuals would like to move to high-income countries, but political support for liberalizing immigration flows from low-income countries is quite limited. At the same time, polling suggests that increased emigration is also seen by many around the world as a problem for their country, including in developing countries (Connor and Krogstad 2018). Pritchett (2018), Clemens (2011), and others have estimated that the lost economic gains from restrictions on international labor mobility are massive. Charter cities can help soften the impact of migration restrictions faced by individuals in low-income countries by offering them an opportunity to experience a boost in income like what they might experience by moving internationally. At the same time, a charter city can help ease concerns about emigration by providing more opportunities for individuals that would otherwise consider moving abroad.

As this paper will demonstrate, charter cities offer a highly cost-effective mechanism to do the most possible good for others by offering a package of institutional reforms that spur sustained economic growth. Using a [model](#) similar to GiveWell's cost-effectiveness [model](#), I estimate that under pessimistic assumptions charter cities rank just under the lower end of GiveWell's top charities. Optimistically, I estimate that charter cities are over 40 times as effective as these charities, in part because of the long-term nature of the intervention. Given the magnitude of these estimates, effective altruists would be well-inclined to investigate further and adopt the promotion of long-run economic growth as a priority cause, with charter cities as a primary vehicle to deliver the kind of institutional reforms needed to achieve growth.

Institutions and Economic Growth

**"Once one starts to think about (the causes of economic growth),
it is hard to think about anything else."**

— Nobel laureate in Economics Robert Lucas (1988) —

"What causes economic growth?" has been a principal question in economics for some time. Many have strongly argued that the principal cause of differences in economic growth both across and within countries are differences in institutions across and within countries. Nobel laureate Douglass North (1991) defined institu-

tions as the "rules of the game" that govern economic, political, and social interaction². Formal (constitutions, laws, property rights) and informal (sanctions, taboos, customs, traditions, codes of conduct) rules are devised to establish order and reduce uncertainty in economic exchange. Acemoglu, Gallego, and

² For a summary of North's work on institutions, see North, Wallis, and Weingast (2009).

Robinson (2014) estimate that differences in these institutions can account for as much as 75 percent of the difference in levels of development across countries.

North's groundbreaking work has spawned a substantial literature within economics on the importance of institutions for growth.³ Most notable has been the work of Daron Acemoglu, Simon Johnson, and James Robinson (AJR). In 2004 they formalized a model of how institutions determine economic outcomes. Following North's lead, they examine the different institutional arrangements established by European powers in their colonies and persuasively demonstrate how those arrangements dating back hundreds of years influenced current political and economic outcomes. Acemoglu and Robinson state the institutional problem quite bluntly in their famous 2012 book, *Why Nations Fail*: "As we will show, poor countries are poor because those who have power make choices that create poverty. They get it wrong not by mistake or ignorance but on purpose." Basic political problems, they argue, are at the heart of explaining economic outcomes.

North and AJR are not alone as leading voices of the institutional argument. Dani Rodrik (2004) has forcefully argued that high-quality institutions are vital for sustaining long-run

growth, which he argues is much more difficult than simply starting economic growth. "Once growth is set into motion, it becomes easier to maintain a virtuous cycle with high growth and institutional transformation feeding on each other." Rodrik, with colleagues, has also made the empirical case for institutions as being key for growth, building on AJR's earlier work (Rodrik, Subramanian, and Trebbi 2004). Economists have looked at a wide variety of institutional settings from places around the world and continually find that institutions have a major impact on long-run outcomes (Dell 2010, Banerjee and Iyer 2005).

Legal systems are a key piece of the institutional story. In a series of widely cited papers, Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny have argued that the style of legal system (civil law vs. common law, for instance) has major implications for economic outcomes. "Many developing countries today find themselves heavily overregulated in crucial spheres of economic life, in part because of their legal origin heritage."⁴ Determining what kind of legal system is most conducive to sustaining long-run economic growth must be a high priority issue for those seeking to support the economic development of the world's low income countries.

³ Bluhm and Szirmai (2012), Evans and Ferguson (2013), and Durlauf (2018) review the literature on institutions as a determinant of economic growth and make strong cases that institutions are key in determining economic outcomes.

⁴ These papers and the broader Legal Origin Theory argued in them is summarized in La Porta, Lopez-de-Silanes, and Shleifer (2008).

The Importance of Institutions and Growth for Human Flourishing

Three decades ago, India and China were both desperately poor countries well behind the advanced economies of the world in terms of development. In the years following their economic liberalization programs, both countries have risen rapidly to middle-income status. It is this rapid climb in income and development that makes these cases important. In level terms, income in India and China are still far behind the world's most advanced economies. But when thinking about their improvement in living standards, their progress is remarkable.

The growth effect dominates the level effect, which is what makes charter cities so effective over the long term. Level effects refer to a change in income from one period to the next, like GDP per capita rising from \$50,000 in one year to \$52,000 the next year. Growth effects refer to a change in the rate of income growth over time, like a rise from two percent growth per year to four percent growth per year. Giving someone \$1000 will increase the level of their income but does not do anything to change the rate at which their income will grow in the future. Growth effects compound, and so over the long run increases in the growth rate will have a much greater effect on income than one-time transfers will.⁵

For instance, per capita income in the United States is currently \$56,000, but only \$16,000 in

China.⁶ However, China was growing at 6.4 percent per year as of March 2019, while the U.S. was growing at 3.2 percent per year.⁷ This higher growth rate means that incomes will rise much more rapidly in China than in the United States, moving China closer and closer to convergence at the same level of income with the United States. Boosting growth rates on a long-term basis in low-income countries allows for rapid improvement in living standards, pulling much of the population out of extreme poverty.

The intuition behind the cost effectiveness of charter cities is that economic growth compounds, improving standards of living. Therefore, over a sufficiently long time horizon, any growth change will dwarf a level change, like those attributable to deworming or anti-malaria efforts.

Governance, the process of decision-making and the interaction between society and institutions, is also important to consider, not just the individual policy reforms. Keefer (2007) shows that both China and India scored better on measures of governance than other countries at similar income levels in the 1980s and 90s, which very likely played a factor in their successes relative to other nations at similar levels of development. Good governance is important for making the most of the reforms introduced by a charter city.

From India's independence from the British Raj

⁵ Dietrich Vollrath offers a useful analogy for thinking about growth and level effects on his blog: <https://growthecon.com/blog/growth-effects-level-effects-and-transitional-growth/>.

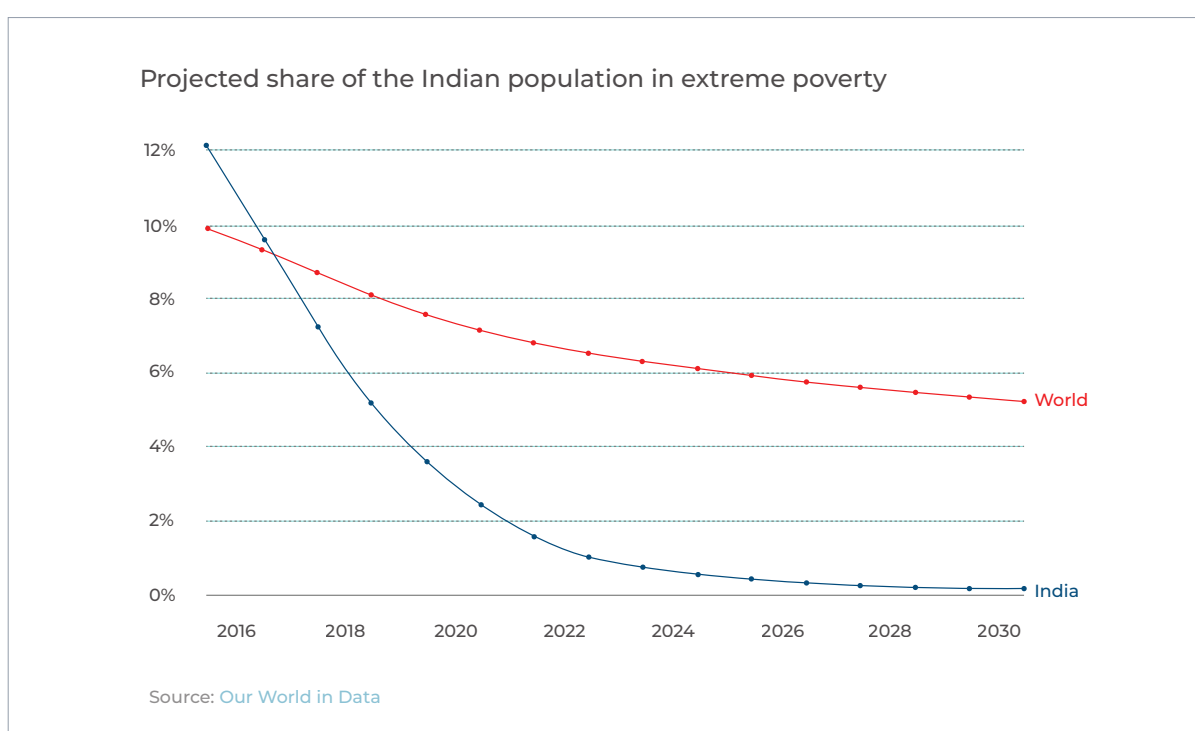
⁶ Trading Economics data, GDP per capita PPP: <https://tradingeconomics.com/country-list/gdp-per-capita-ppp>

⁷ Trading Economics data, GDP annual growth rate: <https://tradingeconomics.com/country-list/gdp-annual-growth-rate>

in 1947 to the early 1990s, the country's economic policy was largely socialist. In the 1980s some early steps were taken to open the Indian economy to increased trade, reduce controls over industry, and set a more realistic exchange rate. In 1991, more widespread economic reforms were introduced. These reforms included the end of government monopolies over certain sectors of the economy, reductions in barriers to entry for new firms, increased foreign investment was

allowed, and tariffs and other barriers to trade were reduced or eliminated. After liberalization, exports increased substantially, and various service sector industries saw significant growth.⁸

Kotwal, Ramaswami, and Wadhwa (2011) note that India's consistent growth and rapidly declining poverty rate has been driven largely by growth in the service sector, rather than by manufacturing as was the case with China. Technology transfers combined with trade liberalization



allowed a relatively skilled workforce to take full advantage of the new technology that entered the country. The Indian model of success suggests that developing an export-focused manufacturing sector is not the only path to rapid growth for a poor country. An educated workforce that can effectively utilize new technology can be a powerful driving force for growth.

India's growth has not just been good for the

more educated segment of the population. Datt, Ravallion, and Murgai (2016) argue that India has made substantial progress in reducing the incidence of absolute poverty, and that this trend exists in both urban and rural areas. Historically higher rates of rural poverty have been converging with urban rates of poverty, and the overall poverty rate has been declining at an accelerating rate in the post-1991 reform era. In the 1970s over 60 percent of Indians were living in extreme poverty. As of 2011, only 20 percent of the popula-

⁸ A more detailed explanation of these reforms and their effects can be found in Panagariya (2004).

tion lived in extreme poverty. Between 2005 and 2016, an estimated 271 million Indians rose out of multidimensional poverty, which accounts for various health, education, and living standard indicators rather than just income (UNDP and OPHI 2018). Infant mortality has fallen from 161.4 deaths per 1,000 births in 1960 to just 32 deaths per 1,000 births in 2017, and India should soon converge with the world average if the current trend continues.⁹ Life expectancy has also improved dramatically, rising from 41 years in 1960 to nearly 69 years today. Like with infant mortality, India is close to converging with the world average in life expectancy.¹⁰ Literacy has improved from just 41 percent in 1981 to 72 percent in 2015, an increase of 75 percent. Here too, India is converging with the world average.¹¹ Female literacy in particular rose from just 25 percent in 1981 to nearly 60 percent in 2011, and female primary school enrollment has increased from 65 percent in 1990 to over 98 percent today.¹² Across the board of development measures, India has made tremendous strides. These trends show that the benefits of India's growth have not just accrued to the wealthiest and educated individuals, rather, that economic growth spurred by the 1991 reforms has been a tide that's raised all boats. Although India's development progress has been notable, China's performance in recent decades is even more impressive.

Like India, China has been a growth miracle in which hundreds of millions of people have

been raised out of poverty. Millions had suffered and died in China in the mid-20th century because of Mao Zedong's collectivized agricultural and industrial policies, and the country was significantly poorer than the world's industrialized nations. In 1979, the Chinese government began to introduce market-friendly reforms in agriculture and began opening the country to trade and investment using special economic zones (SEZ). Controls over the economy were increasingly relaxed and SEZs were expanded (Morrison 2019). Since 1979, China's economy has grown by nearly ten percent on average per year, producing an unmatched improvement in economic well-being for such a short span of time. China has received massive inflows of foreign investment in addition to substantial domestic investment and has seen rapid increases in productivity.

China's liberalization was quite rapid. Lardy (2003) notes that by the time China joined the World Trade Organization in 2001, the average tariff rate had fallen from 56 percent in 1982 to just 15 percent. Imports needing licensing requirements fell from 46 percent to less than four percent by the same time. Export licenses and quotas were similarly eliminated. These rapid measures allowed the Chinese economy to integrate quickly into a rapidly globalizing economy. Yao (2006) found that, across 28 provinces in China, exports and foreign direct investment have had strong positive effects on economic growth and argues that export promotion and adopting new technologies and business prac-

⁹ World Bank data, infant mortality rate (India): <https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?locations=IN-TW>

¹⁰ World Bank data, life expectancy at birth (India): <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=IN-TW>

¹¹ Our World in Data, literacy rate (India):

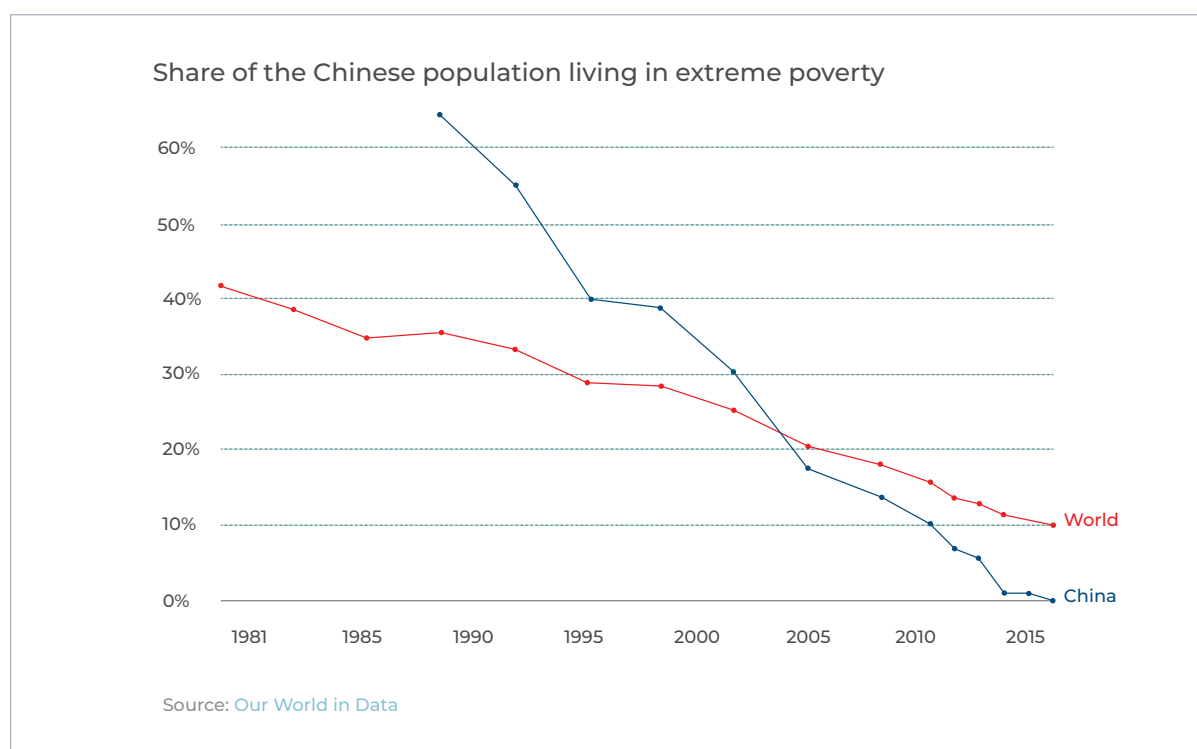
https://ourworldindata.org/grapher/cross-country-literacy-rates?year=1960&time=1981..2015&country=IND+OWID_WRL

¹² World Bank data, female literacy rate (India): <https://data.worldbank.org/indicator/SE.ADT.LITR.FE.ZS?locations=IN>;
female primary school enrollment rate (India): <https://data.worldbank.org/indicator/SE.PRM.TENR.FE?locations=IN>

tices proven abroad can potentially be useful strategies for developing countries.”

China’s progress in extreme poverty reduction

has been even more impressive than India’s. Two-thirds of the Chinese population lived in extreme poverty in 1990, but by 2011 this was down to just eight percent.¹³ In 1981, 730 million



Chinese lived on less than \$1 per day. By 2005, that fell to just 106 million people. This trend holds when looking at those earning less than \$1.25, \$2.00, and \$2.50 per day as well (Chen and Ravallion 2008).

China has made substantial improvements in indicators of human development like health and education since its economy began to grow.¹⁴ Infant mortality fell from 82.9 deaths per 1,000 births in 1969 to roughly 42 deaths per 1,000 births by the late 1980s. After stag-

nating at this level for several years, infant mortality aggressively fell to eight deaths per 1,000 births by 2017, well below the world average.¹⁵ Life expectancy had been rising in China since the 1960s, but this improvement began to slow in the 1980s. Growth in this trend picked up again in the early 2000s and China’s life expectancy is now over 76 years, above the world average. Literacy improved from just 66 percent in 1982 to 96 percent in 2015, also above the world average.¹⁶ Female literacy improved from just 51 percent in 1982 to 93 percent as of 2010.¹⁷

¹³ Our World in Data, share of the population living in extreme poverty (China): <https://ourworldindata.org/grapher/share-of-the-population-living-in-extreme-poverty?tab=chart&time=1990..2011&country=CHN>

¹⁴ United Nations Development Programme, Human Development Report (China): <http://hdr.undp.org/en/countries/profiles/CHN>

¹⁵ World Bank data, infant mortality rate (China): <https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?locations=1W-CN>

¹⁶ Our World in Data, literacy rate (China): https://ourworldindata.org/grapher/cross-country-literacy-rates?year=1960&time=1950..2015&country=OWID_WRL+CHN

¹⁷ World Bank data, female literacy rate (China): <https://data.worldbank.org/indicator/SE.ADT.LITR.FE.ZS?locations=CN>

The Indian and Chinese examples show that raising millions from dire poverty is possible, and that economic growth is required to achieve this.¹⁸ China and India were willing to experiment with major reforms that made it easier to do business—low income countries today need to undertake similar experimentation to be able to grow. Countries should also examine why it is that China outperformed India in recent decades when they started from a comparable baseline when considering what development strategies to pursue. Charter cities offer a viable mechanism for low-income countries to experiment with implementing the lessons from past growth successes to hasten their own climb out of poverty.

Despite the successes of India and China, a word of caution is needed. Acemoglu and Robinson (2012) have argued that growth under non-inclusive political systems is unlikely to last forever. China is nakedly authoritarian and Acemoglu and Robinson suggest that while India is democratic, it isn't particularly inclusive, citing the Indian National Congress' long domination of Indian politics. Although the dominance of the Congress Party has eroded since Acemoglu and Robinson's writing, India is increasingly flirting with authoritarian leadership (Prakash 2019). The key takeaway from the institutional argument is that institutions that are broadly inclusive have the best chances at sustained, long-term success. Some extractive institutions can boost growth in the short run, but their horizons are limited.

The Business Environment

Strong economic institutions are in part defined by a legal and regulatory regime conducive to sustained economic growth. Economies and individuals suffer when there are many expensive and time-consuming steps to start and operate a business. In a precursor paper to the World Bank's Doing Business project, Djankov, et al (2002) demonstrate the wide variation in the ease of starting a business across countries. In 1999, Djankov, et al report it requiring 19 different procedures, 149 days, and \$256 USD in fees to start a business in Mozambique, which was nearly 60% of the average Mozambican's yearly income. In Canada, the same objective could be com-

pleted in two days at a cost of \$280 USD, roughly one percent of average annual income. Reforming the business environment in low-income countries to reduce disparities with high income countries is not an overnight cure-all for poor economic performance, but it can help set those low-income countries on a path to higher growth and towards reducing the severity of the disparities like the one presented above, which disproportionately harm the poor.

Doing Business 2019 shows that while countries around the world have made progress in improving business conditions, much improvement can still be made. A clear relationship between

¹⁸ The "Asian Tigers" (Hong Kong, Singapore, South Korea, and Taiwan) are other key examples of countries that achieved rapid economic growth in recent decades and are worth examining. See Studwell's *How Asia Works* (2014) for a summary. Botswana is another interesting case study in governance and growth to consider, see Lewin (2011) for a summary.

income level and ease of doing business exists, as the OECD nations dominate the top of the rankings, with a handful of exceptions. The Doing Business Index considers ten key factors in determining the ease of doing business: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency. Countries are ranked by these metrics, and by an overall score generated from them. While not a perfect measure, the Charter Cities Institute accepts the Doing Business Index as a reasonable measure of a country's business environment.

For example, the average country in Sub-Saharan Africa ranks an abysmal 141st out of 190 countries for overall ease of doing business. As a region, its best metric is access to credit, but this is still a poor 115th. Individual countries do sometimes perform well on specific metrics, and Mauritius, Rwanda, and Kenya are overall bright spots, but otherwise the region performs quite poorly (World Bank Group 2019). Raising the quality of the business environment in Sub-Saharan Africa (and other low-income regions of the world) has a considerable upside for growth, and charter cities

offer a useful model to demonstrate to countries not just the efficacy of these reforms, but how to successfully implement and administer them.

In a charter city, the appropriate regulatory, tax, and other authorities can be established from scratch and with the authority to develop legal frameworks. This autonomy insulates the authorities from political pressures, which in turn limits the extent to which these bodies become cumbersome bureaucracies focused on extracting rents and providing patronage. However, a charter city would not be sovereign and operates within the existing governmental framework of the host country.

A charter city with the authority to adopt a new legal system must make a choice between a civil law or common law judiciary. The empirical literature suggests that judiciaries operating under common law tend to perform better economically, as was discussed in an earlier section (La Porta, Lopez-de-Silanes, and Shleifer 2008). The Dubai International Financial Centre serves as a useful model for how charter cities can import a common law system when the host country does not use such a system, and how that system can later be incorporated by the host country more broadly (Strong and Himber 2009).

Feasibility of Charter Cities

Economist Paul Romer first developed the idea of chartering new cities to implement innovative ideas about governance in 2009. He argued then that scarcity nor limited technological innovation would be the primary barriers to raising living standards globally.

Rather, limited capacity for implementing better rules that govern economic and social interaction would be. A special jurisdiction with the autonomy to implement rules of its choosing can follow in the footsteps of success stories like Shenzhen in China. Romer (2010) argues that the

central bank governance model—strong leadership with clear mandates, but also wide policy discretion—has been highly effective and could hypothetically be copied in a charter city. A well-run charter city could far more easily encourage investment, manage the challenges of urbanization, and diversify an economy than status quo cities operating under existing sub-optimal institutional arrangements.

Recent new city projects and SEZs offer viable examples of how a charter city could be implemented. Modern SEZs first emerged in the 1950s and now number in the thousands, serving a variety of economic purposes (Moberg 2014). The SEZ model has proven that new jurisdictions operating under a well-designed legal framework can successfully promote growth. Charter cities take this model further by focusing on a much broader set of deep reforms, while also building a new city that people are going to want to inhabit.

The Dubai International Financial Centre, mentioned in the earlier discussion on the business environment, is the best example of

an existing project that executes on the kind of reforms a charter city aims to introduce. The DFIC opened in 2004 and today is the leading financial center in the Middle East, and one of the top 15 financial centers globally.¹⁹ Charter cities legislation has been passed in Honduras, where they are referred to as Zones for Employment and Economic Development (ZEDE). Discussions about potential ZEDE projects have occurred, but none have been implemented yet. (Colindres and Lutter 2019).

Around the world, dozens of new cities have been constructed, are currently under construction, or are in planning stages. In Africa alone, there are at least 18 new city projects planned in eight different countries (Kazeem 2018). Interest in building new cities is likely to remain strong as the developing world continues to rapidly urbanize. The UN estimates that by 2050 68 percent of the world's population will live in urban areas, increasing from 55 percent today (UN DESA 2018). Making these new cities charter cities will provide the strongest opportunities to thrive in increasingly competitive regional and global markets while pushing domestic policy in the right direction.

Cost-Effectiveness Modeling

In order to measure the cost-effectiveness of the Charter Cities Institute, we have developed a [model](#) roughly based on GiveWell's cost-effectiveness [modeling](#) that attempts to quantify the effectiveness of a charter city project in present value terms.

The output from the model allows for a direct comparison of the effectiveness of charter cities to GiveWell's top charities in total present value terms. Three versions of the model have been created to demonstrate the cost effectiveness of charter cities under optimistic, neutral, and pessimistic assumptions. Below is a more

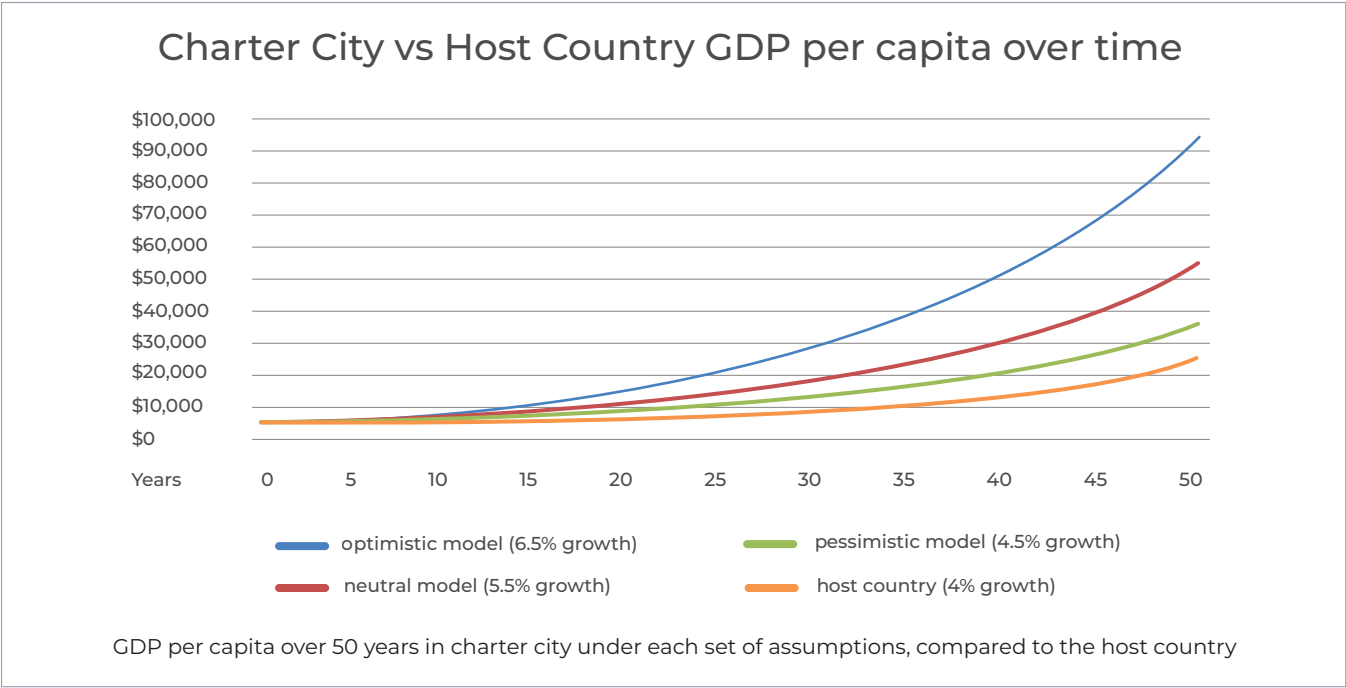
¹⁹ Global Financial Centres Index: <https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/gfci-25-explore-data/gfci-25-rank/>

detailed walkthrough of how the model works.

The charter city population and starting GDP per capita levels are set, along with identical values for the host country as a control. Using the host country's growth rate as a baseline, we assume some boost to this rate for the charter city, depending on which set of assumptions apply. A lagged parameter for the estimated time it takes for the expected growth to begin is also set. We use the time construction is finished and residents and businesses move into the city as a starting point for this value. Those that prefer a higher discount rate could set the beginning of the charter city project, rather than the completion of the project, as a start date for thinking about the delay in growth effects if they wish. Next, a value for CCI's marginal contribution to

the success of the project is estimated. A value of .4, for instance, communicates that CCI can claim 40 percent of the responsibility for the development of the new legal framework in a charter city.²⁰ Finally, a value for CCI's costs incurred for a given project is set.

For any given year, the log ratio of GDP per capita in the charter city to GDP per capita of the host country is computed. This value is then multiplied by the charter city population and by 1.44, GiveWell's value assigned to increasing log consumption by one unit for one person for one year to produce a weighted measure of "value units" created for that year. This value is then discounted using GiveWell's standard 4.2 percent discount rate and the delay parameter set earlier. This value is then multiplied by CCI's marginal contribution to the success of the project to determine the present value units



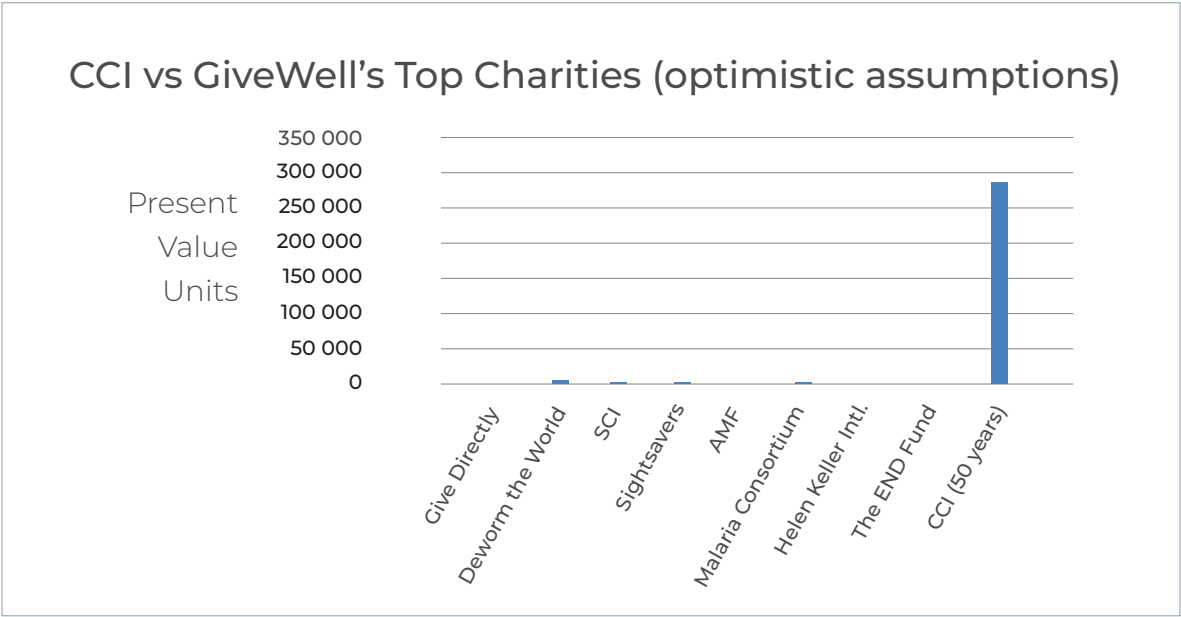
²⁰ I fully acknowledge that this value is debatable. Given CCI's unique position as one of the only organizations directly providing technical assistance to ongoing new city projects interested in the reforms discussed in this paper, we believe the estimate of our impact on the likelihood of success of a project to be reasonable.

²¹ Note that the time horizon refers to the life of the individual charter city, not the length of time CCI is actively working on the project. CCI's direct involvement in a project would at most be a few years, until the legal framework for the charter city is established and takes effect.

attributable to CCI's effort. Finally, all of the value units attributable to CCI are added up to the desired time horizon and divided by the project cost, and then multiplied by 100,000 to arrive at the number of value units created per \$100,000 donated to compare to other organizations.²¹

In the high-end scenario, we assume the

following: a city of 500,000 people with a starting GDP per capita of \$4,000, a 2.5 percentage point boost in growth from a host country starting growth rate of 4.0% (for a growth rate of 6.5%), a delay parameter of two years, a 50 percent marginal contribution to success from CCI, and costs of \$1,000,000. In this scenario, the total present units of value attributable to CCI per \$100,000 donated over a 50-year time horizon are over 40

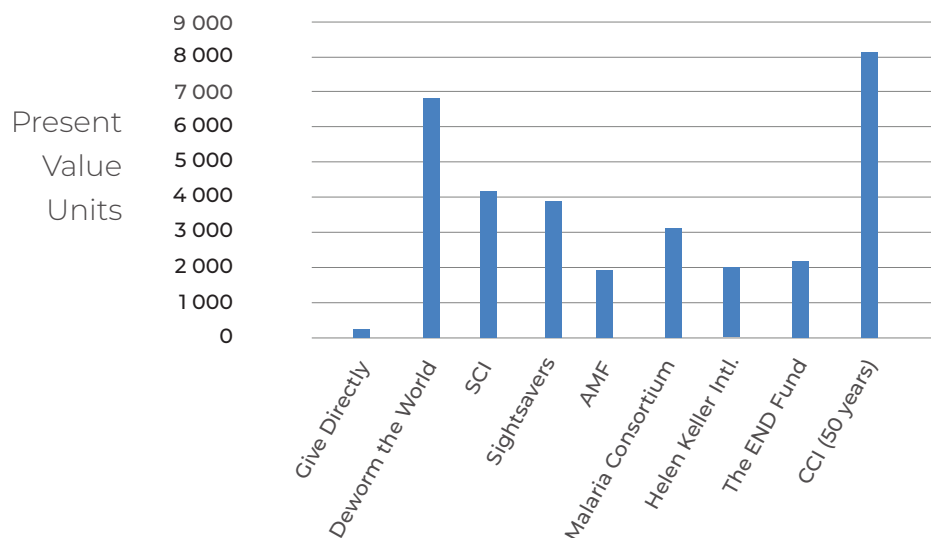


times higher than value attributed to Deworm the World, GiveWell's top charity. Over a more modest five-year period, the total present units of value attributable to CCI per \$100,000 donated are approximately 1.5 times higher than Deworm the World.

In the medium-end scenario, we assume the following: a city of 100,000 people with a starting GDP per capita of \$4,000, a 1.5 percentage point boost in growth from a host country starting growth rate of 4.0% (for a growth rate

of 5.5%), a delay parameter of six years, a 35% marginal contribution to success from CCI, and costs of \$2,500,000. In this scenario, the total present units of value attributable to CCI per \$100,000 donated make CCI comparable to GiveDirectly after five to ten years. CCI is approximately as effective as The END Fund, Helen Keller International, the Against Malaria Foundation, Malaria Consortium, Sightsavers, and the Schistosomiasis Control Initiative after 20-30 years. CCI is approximately as effective as Deworm the World after 40 years.

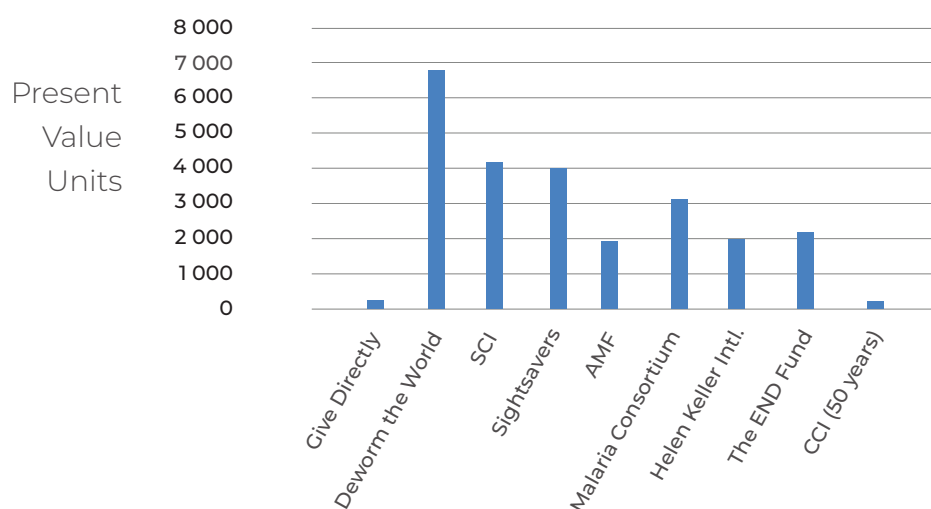
CCI vs GiveWell's Top Charities (neutral assumptions)



In the low-end scenario, we assume the following: a city of 50,000 people with a starting GDP per capita of \$4,000, a 0.5 percentage point boost in growth from a host country starting growth rate of 4.0% (for a growth rate

of 4.5%), a delay parameter of ten years, a 20 percent marginal contribution to success from CCI, and costs of \$5,000,000. In this scenario, CCI is comparable to GiveDirectly after 50 years.

CCI vs GiveWell's Top Charities (pessimistic assumptions)



Justification of Modeling Assumptions

The justifications for the modeling assumptions provided here will focus largely on the middle estimate.

The population estimate was set at 100,000 people because several new cities currently under construction are expecting to house approximately this many people, if not more. Nkwashi, a new city development and potential charter city in Zambia being built by Thebe Investment Management, is expected to house up to 100,000 people.²² In Kenya, Rendevour is constructing Tatu City, a new city development that will have 150,000 residents.²³ 50,000 people is our low-end population estimate, as anything smaller is simply too much of a constraint to have a large scale impact. Cities are effectively labor markets, and larger cities are more productive than smaller cities (Bertaud 2018). If the goal is economic growth, larger city projects are almost certainly better. Our optimistic assumption of 500,000 people is a scenario in which new city developments become increasingly scalable, although several projects of this magnitude do currently exist, including Forest City, Malaysia (700,000 residents) and Enyimba Economic City, Nigeria (1.5 million residents).²⁵

The costs of living in a charter city could vary widely depending on the project. For example, in Nkwashi, prospective residents must

purchase a plot of land and then have a house built on the property, while other projects may have constructed housing units available, which lowers the cost.²⁴ This cost constraint effectively means that the early generation of charter cities will, at least initially, be mostly accessible to the middle classes and above. The African Development Bank considers those earning between \$1,460 to \$3,650 per year to be lower middle class and those earning \$3,650 to \$7,300 per year upper middle-class (van Blerk 2018). Given this range of middle-class income levels, a starting income level of \$5,000 for a charter city seems like a reasonable estimate. As new city developments become increasingly common and replicability improves, the cost of new cities will likely fall, increasing accessibility to those with lower incomes

A 1.5 percentage point boost to economic growth is in-line with estimates of improvements to business regulation, and to the past performance of SEZs. This estimate is somewhat conservative, relative to the available evidence. Djankov, McLiesh, and Ramalho (2006) estimate that improving from the worst quartile to the best quartile of the Doing Business index implies a 2.3 percentage point increase in annual growth. This estimate is on the country level, so the benefits in a single city may be higher. China introduced four new SEZs in 1980, which grew on average at 58 percent (Shenzhen), 32 percent (Zhubai), nine percent (Shantou), and 13 percent

²² Thebe Investment Management: <http://thebe-im.com/our-investments/>

²³ Rendevour: <https://www.rendevour.com/projects/tatu-city/>

²⁴ Thebe Investment Management: <http://nkwashi.com/live/>

²⁵ Forest City, Malaysia is being developed by Country Garden Pacificview: <http://www.forestcitycountrygarden.com.my/>
Enyimba Economic City is being developed by EEC Group: <https://eecgroup.com/>

(Xiamen) per year, while China as a whole grew at 10 percent on average per year over the same four-year period. Apart from Shantou, the SEZs significantly outperformed China over this time, by at least three percentage points per year, which is above the optimistic estimate presented in this paper (Yeung, Lee, and Kee 2009).

As discussed in the section on institutions and economic growth, good institutions are crucial to economic outcomes. The highest sustained growth rate of any country has been China, which averaged approximately ten percent annual growth over 30 years. Economic growth in many of the world's remaining low-income countries has been much lower, and often more variable, than in countries that have successfully risen to middle-income status. Our optimistic assumption of a 2.5 percentage point increase in the national growth rate accounts only for a quarter of the difference between high growth and low growth countries, a conservative assumption.

The six-year delay parameter is quite conservative, as the Chinese SEZ example demonstrates. It also seems unlikely that when a charter city begins attracting investment and growing that any available housing units would go unsold.

Modeling Limitations

The model presented in this paper is relatively simple and has a number of limitations that likely have resulted in underestimation of the effectiveness of charter cities. Certain values used in the model are subjective and may not

A 35 percent marginal contribution by CCI to the success of a charter city project is also a conservative estimate. CCI is uniquely positioned to bring together government officials, developers, and other interested parties and offer the expertise to plan a charter city and implement a new legal system.

CCI's costs for a charter city project come from lobbying the host country's government to adopt the legislation necessary to implement a charter city and from providing technical assistance in setting up the new legal authority. Private developers bear the cost of physically constructing a new city, not CCI. We estimate that it would cost CCI approximately \$2.5 million per charter city project to successfully achieve these goals and begin a charter city project. As knowledge of charter cities spreads and projects become easier to scale and replicate, it will likely take less lobbying to have countries adopt charter cities legislation and to approve agreements with charter city developers. As a result, CCI's per city costs will fall over time.

We use GiveWell's value assigned to increasing consumption for one person for one year by one unit, 1.44, to weight the "value units" created by a charter city. We also adopt GiveWell's discount rate of 4.2 percent from its cost effectiveness model.

match one's preferences. For instance, those who would prefer a discount rate lower than GiveWell's standard rate of 4.2 percent may find charter cities more attractive than those with higher discount rates, given the long-term

nature of charter city projects relative to the traditional interventions supported by effective altruists like deworming and cash transfers.

Population is fixed in this model, despite the obvious likelihood that a successful charter city would grow over time and be a magnet for intra and international immigration. Estimates of the economic gains from reducing barriers to international migration and permitting individuals from low-income countries to locate where they would be far more productive are huge, as was discussed earlier in the paper. The barriers to within-country migration are generally far less strenuous than international barriers to migration, and a new city that replicates the kind of opportunity offered in top migration destination countries offers substantial welfare gains beyond the initial set of new city residents. It is also more politically viable than expecting developed countries to increase immigration flows from developing countries.

Spillover effects of a charter city are another key factor not estimated in the model. In the case of charter cities, there are both first and second order spillover effects to consider. The former is the boost to growth that can be expected in the area near a charter city. There is evidence to suggest that a city has a positive growth effect on surrounding areas (Cuberes, Desmet, and Rapport 2018). Looking at China, Madariaga and Poncet (2007) found that cities neighboring those that received foreign direct investment saw income gains as well, so it seems quite reasonable that the areas surrounding a charter city would perform well. A substantial empirical literature has identi-

fied the importance of the knowledge spillovers and agglomeration economies generated by cities for regional economic growth (Döring and Schnellenbach 2006).

The latter, and ultimately more important, spillover to consider is the “demonstration effect” of a charter city on the host country to adopt similar reforms (Besley 2005). Charter cities offer host countries an opportunity to see how a comprehensive overhaul of the laws and administrative bodies that regulate business activity and governance institutions performs in their own backyards with minimal financial risk. China and India were willing to perform major experiments in institutional reform and the payoffs for the very poor in both countries has been massive. A successful charter city will push the host country to adopt the same reforms in order to remain competitive with the city, and with neighboring countries that are also likely to take notice of the city's performance.

It has been well documented that countries do pay attention to their rankings on indices like Doing Business, and charter cities could heighten that focus, pushing the host country and other countries to adopt similar reforms (Runde 2018). This effect would be difficult to quantify, but China's highly successful experiment with SEZs can offer some insight. After the success of the first four SEZs established in 1980, China introduced dozens of variants of SEZs across the country in the following three decades (Zeng 2012). The case of China suggests that countries that run successful policy experiments can implement lessons learned on a much larger scale than a single jurisdiction.

This model effectively treats all income as consumption and ignores savings and investment for simplicity. However, it is very likely that a charter city would increase the share of income invested on an individual level given the increased attractiveness of doing business and stronger rule of law in a charter city, boosting the growth level. By design, the reforms introduced by a charter city make entrepreneurship more attractive and attainable to a greater number of people, so a boost in savings and investment is a safe assumption to make. Given that charter cities will have mid to high income status within the countries they are located, they will act as powerful savings centers, which can and will be invested in other parts of the country, thus increasing investment level in the entire country or region.

Charter cities would also have some effect on the need for other effective organizations. Rising incomes obviously diminish the need for cash transfers. It is also clear that some relationship exists between health and a country's economic fortunes. Countries in South America with comparable rates of malaria incidence to countries in Africa see

Conclusion

For a potential focus area, effective altruists are likely to use a three-pronged framework to assess its value: importance, tractability, and neglectedness (Centre for Effective Altruism). Importance is a function of both the scale of a problem and how much better the world would be if the problem was solved. Tractability asks how solvable a problem is. Important and tractable problems that have been

lower malaria death rates than the African countries do. Venezuela had the highest malaria incidence in South America in 2015, above several sub-Saharan African nations, and yet it experienced a lower death rate than any of these countries (Roser and Ritchie 2017). Rising incomes are certainly not an overnight remedy to public health problems, but they do help. Charter cities are free to implement a new healthcare system or work within the host country system as the city and host country see fit.

Other limitations of the model are specifically related to CCI. The estimates of our marginal impact on the success of a charter city project, especially in the high-end model, are particularly conservative. Charter cities are still a largely untapped idea in the development space and as a result, CCI's involvement has been integral in current city projects and will be for the foreseeable future. However, as charter cities receive greater recognition and legitimacy as a tool for international development, the project cost on CCI's end will likely decrease. Less time and money spent bringing together stakeholders and securing the necessary project commitments decreases CCI's per project cost, raising our cost-effectiveness.

neglected represent valuable opportunities.

As this paper attempts to show, there can be no doubt of the importance of improving institutions and supporting economic growth. Billions have been able to rise out of extreme poverty within their lifetimes in the last 200 years because of the power of sustained economic growth.

Effective altruists have obviously bought in to the idea that extreme poverty is a problem that can be solved. As this paper attempts to demonstrate, poor governing institutions are simply too important to ignore as a root cause of poverty. The anti-poverty organizations currently popular within the effective altruist community perform fantastic work that has improved the lives of millions. However, the modeling and literature presented in this paper shows that the value of sustained economic growth, spurred by substantial improvements in institutional quality, is an unrivaled poverty reduction tool. The legal framework of a charter city is specifically planned to jumpstart this growth and sustain it for the long run. Successful SEZs like Shenzhen demonstrate that the charter city model of institutional reform can work in practice.

There is no shortage of talent and resources being directed towards solving global poverty and promoting economic growth. However, charter cities invoke a more specific subset of these areas: rapid urbanization in the developing world. Although much has been written

about this trend, it remains unclear how much is really being done on the ground to address it. The abundance of new city projects in Africa, the Middle East, Asia, and elsewhere is a signal that these projects are and will continue to be a part of the mix of solutions to the challenges of urbanization.

Charter cities offer a highly-cost effective way to promote economic growth and alleviate global poverty. A charter city is a longer term and larger scale effort than most anti-poverty efforts endorsed by effective altruists, but the improvements in wealth, health, education, and other development measures that can come from economic growth jumpstarted by a charter city are simply too immense to ignore. Charter cities are at least comparable in terms of effectiveness to GiveWell's top charities and have the potential to be several times more effective than these organizations after just ten years. The effective altruist community has already begun to express interest in charter cities (Wiblin and Harris 2019; Hassenfeld 2019). Now is the time for effective altruist organizations to formalize that interest and adopt charter cities as a priority cause.

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