Columbia University
Journal of Politics & Society

Columbia Sociology Professor Shamus Khan
The New Elitists

Jessica Downing, The Peter and Katherine Tomasi Essay
Pedaling and Public Health

Lily Yang, Weatherhead Institute for East Asian Studies Essay
Labor Migration and its Impact on the Next Generation

Also Inside:
Nuclear I.C.B.Ms and U.S. Security Strategy
Lobbying by Prosy and the Foreign Agents Registration Act
Corruption and Foreign Education
The Politics of the Microfinance Crisis in Andhra Pradesh, India
THE VIEW FROM SOUTH LAWN

The first half of 2013 has proven to be one of tremendous change. The gridlock in Washington appears to have reached historic heights, as budgetary disputes become a nearly monthly occurrence and ideological polarization becomes a relentless fact of political life. And the United States finds itself in an increasingly precarious position in the world system as developing economies become more autonomous and geopolitical disputes more interdependent. Now, as always, the importance of thought-provoking social science research cannot be understated.

The papers in this issue depict many of the complexities and nuances surrounding political activities, government policies, and social trends and movements. This edition of the Journal of Politics & Society begins with a guest essay written by Professor Shamus Khan of Columbia University. He identifies a new form of elitism endemic to the U.S. modern upper-class that values omnivorousness as a sign of cultural capital under the guise of individuality. Such elitism, he claims, seeks to promote a discourse of intellectual openness, even as such a discourse serves to entrench elite exclusivity.

Even as it continues to maintain its strength and influence, the United States faces many challenges. Two of the papers in this edition describe the political and military ramifications of a state adapting to change. Lauren Kobor examines the benefits and drawbacks of eliminating land-based nuclear intercontinental ballistic missiles and makes the case that their removal would not damage U.S. military interests. Noting a similar need to modernize politics, Samuel Wagreich studies the Chinese government’s growing efforts to lobby Congress through multinational corporations and notes the inadequacy of existing legislation in providing transparency in the era of globalization.

The issues of corruption and transparency are not unique to the United States. In fact, the United States may actually be
moderating influence on corruption worldwide. Leticia Ferreras analyzes macro-level trends among international students studying in Western countries and comes to the conclusion that countries with a higher percentage of students receiving higher education abroad experience less corruption, even after controlling for other variables. A lower incidence of corruption does not, however, mitigate the negative impact of politics on public policy. Pooja Yerramilli dissects the politics surrounding microfinance institutions in India and argues that politics is also the predominant factor that led to the demise of the local industry in the state of Andhra Pradesh.

Not all public policy efforts, however, are doomed to failure. In this edition's Peter and Katherine Tomassi Essay, Jessica Downing evaluates the implications of framing bike-sharing in Philadelphia as a public health initiative. She explores issues of inequality and access among the demographics utilizing the Philadelphia program and offers a statistical snapshot of the need for greater inclusion. Issues of inequality and access also plague the Chinese education system. In the inaugural Weatherhead East Asian Institute Essay, Lily Yang observes the existing educational inequity among rural areas and infers that this inequity is the determining factor in migrant workers’ decision to bring their children with them to urban areas with better educational systems.

Now in its twenty-fifth year of publication, the Journal of Politics & Society remains the country's most significant outlet for world-class undergraduate social science research. As we lay the groundwork for a new era of our publication, we are grateful for the diligence and enthusiasm of each member of the editorial board. We are tremendously inspired by the achievements of our predecessors and strive to leave our own mark on this venerable organization.

The Executive Board
New York City
May 2013
You can tell a lot about people by looking at their music collections. Some have narrow tastes, mostly owning single genres like rap or heavy metal. Others are far more eclectic, their collections filled with hip-hop and jazz, country and classical, blues and rock. We often think of such differences as a matter of individual choice and expression. But to a great degree, they are explained by social background. Poorer people are likely to have singular or “limited” tastes. The rich have the most expansive.

We see a similar pattern in other kinds of consumption. Think of the restaurants cherished by very wealthy New Yorkers. Masa, where a meal for two can cost $1,500, is on the list, but so is a cheap Sichuan spot in Queens, a Papaya Dog and a favorite place for a slice. Sociologists have a name for this. Today’s elites are not “highbrow snobs.” They are “cultural omnivores.”

Omnivorousness is part of a much broader trend in the behavior of our elite, one that embraces diversity. Barriers that were once a mainstay of elite cultural and educational institutions have been demolished. Gone are the quotas that kept Jews out of elite high schools and colleges; inclusion is now the norm. Diverse and populist programming is a mainstay of every museum. Elites seem more likely to confront snobbish exclusion than they are to embrace it.

This was not always the case.

In 1880 William Vanderbilt tried to buy one of the 18 coveted boxes at the New York Academy of Music on 14th Street by
offering $30,000 for it. Vanderbilt represented new money, and
to the old families controlling the academy his attempt to buy his
way into a place reserved for them was a crass affront to their dig-
nity. Money may be king in certain parts of New York society. But
not everything can be bought.

Or so it seemed. After his bid was rejected, Vanderbilt
joined other nouveaux riches families like the Goulds, Rockefell-
ers and Whitneys and founded the Metropolitan Opera House
Company. With 122 private boxes, there was plenty of space for
the city’s expanding elite.

This new elite sought to supplant the old families from
their long-held seats, but the transformation was hardly radical.
While the old elite was ultimately forced to join the new elite at
the Metropolitan Opera after its academy collapsed in financial
ruin, they did so in a space that was still comfortable: an opera
house. Modern temples of power were built on the foundations of
the old. New elites were often conservative in their tastes — build-
ing mansions that emulated those of European aristocrats, buying
up old masters and building shrines to European art forms.

In his brilliant work on the Gilded Age, “The Monied Me-
tropolis,” the Harvard historian Sven Beckert argues that this era
helped consolidate the American bourgeoisie. Originally, the old
families of New York formed an elite caste defined by their lineage
and were not threatened by the fact that they shared many of the
same tastes as common men. Through much of the 19th century,
cultural differences between elites and the rest were not so great.
Shakespeare and opera held mass appeal. To attend an evening’s
concert at the New York Academy of Music might mean hearing
Verdi, but also some church music and perhaps vaudeville-esque
interludes by popular comedians of the day.

It was the robber barons’ joining of the elite that forced a
change. As access to elite status became less limited through fam-
ily ties and more open to men of new wealth, New Yorkers found
a new mechanism of social closure. They created an exclusive
culture distinct from that of the common American, the result
of which was something far more elitist. Through snobbery elites
became a class. They developed a shared culture and sensibility. They also shared common enemies.

The Rockefellers were not the only “new men” on the scene. Others were pouring into Lower Manhattan. Elites feared the rabble who flowed ashore on boats from Europe — eight million people between 1855 and 1890. The wealthy moved uptown. Among their mansions they built an armory in 1880, “defensible from all points against mobs.” Many sent children away to boarding schools to escape the corruptions of the city.

Elites built moats and fences not just around neighborhoods but also around cultural artifacts. The Metropolitan Opera made cultural performances more “pure,” dropping the vaudeville. High ticket prices made the popular music of Verdi less accessible; soon it was the rich and not the rest who enjoyed this music. Even great public institutions like the Metropolitan Museum of Art were only nominally so. It was far from the homes of workers, closed on the one day they had free (Sunday) and known to remove working-class patrons for, as the director of the museum put it, “offensive odors emitted from dirt on their apparel.” The sociologist Nicola Beisel has shown how the fine-art nudes that had once circulated among workers on postcard replications were banned as pornography through the Comstock laws and limited to an imposing building that only “respectable” New Yorkers would enter.

This was the birth of the modern upper-class elite; its own schools, clubs and cultural artifacts made it quite distinct from other Americans.

HOW far we’ve come! Our modern omnivores have filled in the moats and torn down the fences. With exclusion and snobbery a relic, the world is available for the most talented to take advantage of. To talk of “elite culture,” it seems, is to talk of something quaint, something anti-American and anti-democratic. Whereas the old elites used their culture to make explicit the differences between themselves and the rest, if you were to talk to members of the elite today, many would tell you that their culture is simply an expression of their open-minded, creative, ready-to-pounce-on-
any-opportunity ethic. Others would object to the idea that they were part of an elite in the first place.

But if you look at the omnivore from another point of view, a far different picture emerges.

Unlike the shared class character of Gilded Age elites, omnivores seem highly distinct and their tastes appear to be a matter of personal expression. Instead of liking things like opera because that’s what people of your class are supposed to like, the omnivore likes what he likes because it is an expression of a distinct self. Perhaps liking a range of things explains why elites are elite, and not the other way around.

By contrast, those who have exclusive tastes today — middle-class and poorer Americans — are subject to disdain. If the world is open and you don’t take advantage of it, then you’re simply limited and closed-minded. Perhaps it’s these attributes that explain your incapacity to succeed.

And so if elites have a culture today, it is a culture of individual self-cultivation. Their rhetoric emphasizes such individualism and the talents required to “make it.” Yet there is something pernicious about this self-presentation. The narrative of openness and talent obscures the bitter truth of the American experience. Talents are costly to develop, and we refuse to socialize these costs. To be an outstanding student requires not just smarts and dedication but a well-supported school, a safe, comfortable home and leisure time to cultivate the self. These are not widely available. When some students struggle, they can later tell the story of their triumph over adversity, often without mentioning the helping hand of a tutor. Other students simply fail without such expensive aids.

These are more than liberal platitudes. Look at who makes up the most “talented” members of society: the children of the already advantaged. Today America has less intergenerational economic mobility than almost any country in the industrialized world; one of the best predictors of being a member of the elite today is whether your parents were in the elite. The elite story about the triumph of the omnivorous individual with diverse talents is
a myth. In suggesting that it is their work and not their wealth, that it is their talents and not their lineage, elites effectively blame inequality on those whom our democratic promise has failed.

Elites today must recognize that they are very much like the Gilded Age elites of old. Paradoxically the very openness and capaciousness that they so warmly embrace — their omnivorous-ness — helps define them as culturally different from the rest. And they deploy that cultural difference to suggest that the inequality and immobility in our society is deserved rather than inherited. But if they can recognize the class basis of their success, then perhaps they will also recognize their class responsibility. They owe a debt to others for their fortunes, and seeing this may also help elites realize that the poor are ruled by a similar dynamic: their present position is most often bound to a history not of their own choosing or responsibility.

It is past time for elites to give up the cultural project of showing how different they are from others. They should commit themselves instead to recognizing that there is a commonweal that we all have a responsibility to improve.
INTRODUCTION

Transportation infrastructure, policies, and programs are intimately related to public health. They can provide mobility and access to resources and services such as health clinics, grocery stores, and parks. They can provide or deny opportunities for individuals to work physical activity into their daily lives. They can actively promote or passively discourage the development and use of cleaner, more energy efficient technologies. In the United States, the automobile has long been the transportation mode of choice, and this has had considerable implications for public health. Asthma rates have increased across the country, as have incidences of obesity and obesity-related chronic illnesses.

As the public grows increasingly aware of these concerns, and of the environmental impacts of automotive pollution, planners and policymakers have devoted greater attention to alternative forms of transportation. Bike-share programs, prominent in Europe but still emerging in the United States, offer one such alternative, a form of non-motorized public transportation for individual use in cities. Through these programs, individuals are able to access a network of bicycles, generally docked at stations throughout
the city, usually after paying some sort of membership fee. A member can then acquire a bicycle from one location and ride it to another, where he or she can leave it for the next user to pick up, and ride to his or her destination of choice. Bike-share programs thus provide infrastructure that encourages a shift away from exhaust-producing vehicles and towards active transportation\textsuperscript{3}—that is, walking or bicycling—as a basic way of getting around.

As bike-sharing spreads to a variety of cities across the U.S. and Europe, many of the stated goals of such programs have remained relatively consistent irrespective of location. These include considerations at the global, national, and city level. Scholars taking a national or global perspective often focus on the potential for such programs to reduce carbon emissions and improve environmental sustainability within the United States, thus reducing the country’s contribution to global climate change.\textsuperscript{4,5} More localized arguments for bike-share programs emphasize the programs’ capability to not only reduce vehicle emissions,\textsuperscript{6} but also reduce traffic congestion and transportation costs,\textsuperscript{7,8} promote the use of public transit by offering a solution to the first/last mile problem,\textsuperscript{9} and enhance the general livability of cities.\textsuperscript{10,11} In addition, some proponents have pointed to individual benefits, including increased access to mobility\textsuperscript{12} and physical activity.\textsuperscript{13}

Philadelphia is one U.S. city in which the idea of bike-sharing has gained considerable ground. In 2010, just two years after the advent of the country’s first city-run bike-share program emerged in Washington, D.C.,\textsuperscript{14} the City of Philadelphia released a report that announced the implementation of a bike-share program in Philadelphia to be feasible and provided a proposal outlining what exactly such a program would entail. As has been the case with other such proposals in the United States, the program’s advocates have cited the improvement of public health as an important
incentive for the program’s implementation.\textsuperscript{15,16,17} However, the proposal fails to offer a comprehensive understanding of how the program is expected to improve public health, and whose health it is expected to improve—that is, it does not discuss the distribution of the costs and benefits of the program with respect to health.

This thesis represents an attempt to fill this gap. In this paper, I will investigate whether the bike share program proposed for Philadelphia, which is still in the early stages of conceptualization and planning, should be expected to positively impact public health in the city, and highlight some aspects of the program expected to influence its effectiveness as a public health program. I will begin by providing an overview of the program proposed for Philadelphia. I will then review some of the existing literature investigating the relative costs and benefits of active transportation with respect to public health. This literature review will be used to determine whether a program designed to promote active transportation can be expected to positively affect public health. Following this, I will conduct a series of statistical analyses to determine which geographical areas and sociodemographic groups suffer most from the health conditions most often associated with physical inactivity, and whether they might be likely users of a bike-share program. I will conclude by highlighting the implications of this thesis for the development of the Philadelphia program.

Bike-sharing in Philadelphia

I have chosen Philadelphia as the geographical focus of this project for two reasons. The first concerns the state of public health in Philadelphia, which is surprisingly poor compared to that of other large cities in the United States and other counties in Pennsylvania, especially with respect to physical inactivity.\textsuperscript{18} This thesis reflects a belief that public health needs to become a greater priority in Philadelphia,
and that every project undertaken by the city with the potential to impact public health should thus be evaluated from that perspective. Furthermore, the proposed bike-share program for Philadelphia is still in the early phases of development, indicating that there is an opportunity to raise awareness among policymakers and planners involved in the process as to the program’s potential effects on health. Thus, the potential impact of a study such as this on a bike-share program in Philadelphia, coupled with my own proximity to and familiarity with the city, makes Philadelphia an ideal city on which to focus my analysis.

Urban planners and researchers expect that a bike-share program would be enthusiastically received in Philadelphia, especially given the current support of the public and institutional sectors and the city’s high population and employment densities. Research focusing on active transportation across the United States suggests that Philadelphia may be an especially good city for bike-sharing. One study found that within the United States, active transportation is more common in “older cities with mixed land use (having residential, commercial, and civic buildings interspersed), sidewalks, and well-developed transit systems,” such as Philadelphia. The Philadelphia Bikeshare Concept Study, conducted by JzT1 and Bonnette Consulting in collaboration with the Delaware Valley Regional Planning Commission (DVRPC) for the City of Philadelphia in 2010, offers additional evidence for this assertion, claiming that the differences in mode share—the breakdown of the types of transportation used for daily trips—between comparatively older large cities in the United States, including Philadelphia, and European cities in which bike-sharing has already proven successful, are much smaller than are national differences.

The authors suggest that a program in Philadelphia should begin with the deployment of approximately 1,750
bikes in the most densely populated and multi-use developed core of the city, identified as the “core market area,” which would contain twenty stations per square mile, each with around fifteen bikes. Because students are expected to be frequent users of the program, it is important that this area encompasses not only the majority of Center City, but also the campuses of the University of Pennsylvania, Drexel University, and Temple University. The core and expanded market areas are estimated to cover approximately 6.5 percent and 21 percent of Philadelphia’s population, respectively. The authors of the study anticipate that after the implementation of a program in this region, bike-sharing could be expanded along the northern, southern and western borders to include more residential neighborhoods, where it is recommended that “bikes be strategically distributed according to a general accessibility-based standard, specifically that all residents should be within a ten minute walk (around 1250 feet) of a bikeshare station.” Figure 1, available in the online edition of this publication, provides a map of the program’s proposed core and extended market areas. Based on an estimated capital cost for the system of between $1,000 and $3,000 per bicycle, the cost of the initial implementation of this program is projected to fall between $1.75 million and $5.25 million. Ultimately, however, the program’s implementation and success will depend on the acquisition of sufficient funding for the construction and maintenance of program facilities, the improvement of biking infrastructure in the city, and the implementation of marketing and education campaigns. Safety should also be a key consideration for both infrastructure improvements and education campaigns, as a lack of adequate attention to safety issues “could result in initial skepticism about the applicability of the concept, and/or denouncing of the program as a public liability.” Although this analysis does not directly address either the
safety features of the program or the process of educating its potential users, it is essential that planners dedicate time and resources towards the elucidation of key methods for optimizing the program’s safety. To do so, they might consider looking to techniques employed by other city-wide programs, such as Capital Bikeshare in Washington D.C.

Any city hoping to implement a bike-share program, especially in North America, must address the issue of liability, which can create a severe barrier to program implementation. This is because, unlike citizens in many countries that have implemented bike-share programs, those in the United States cannot currently rely on comprehensive national insurance coverage. Capital Bikeshare in Washington D.C. has opted to employ a web-based liability waiver, which requires individuals to assume responsibility for the risks involved in riding before they are permitted to access a bicycle. In addition, as recommended by DeMaio, the program has set a minimum age requirement; all users must be at least sixteen years old to register for a membership. The Philadelphia Bikeshare Concept Study also mentions this as a possible liability scheme, but warns that “the City could still be held liable in various situations.” Although the authors recommend that lawyers and insurance providers be consulted on the matter, they do offer a few liability alternatives, including the acquisition of insurance coverage through a transit operator, a non-profit-organization, or the vendor or operator hired to manage the program, though they warn that none of these alternatives would be guaranteed to protect the city from all liability.

Effective marketing strategies and the development of education and infrastructure to promote safety will also be essential to the success of the program. In order to maximize the potential public health benefits of the program, it is especially important that it is marketed in such a way as to encourage the participation of a wide variety of users, rather
than only those who already ride a bike, this can be done in a variety of ways and should influence decisions regarding the utilitarian and aesthetic design of the bikes, the placement of stations, and the cost and payment structures.

Educational campaigns should focus on teaching the public about the effects of bike-sharing on congestion, pollution, and social equity, and on promoting safe use of the program. Educators can promote safety through both workshops and the strategic design and placement of advertisements and signage at the bike-share stations. They should provide information regarding both lawful use of the bike-share system and methods for coordinating multiple modes of transportation on a given street. Safety should also be addressed through changes in infrastructure. According to Bassett et al, the discrepancy between rates of active transportation in Europe and the United States can in part be attributed to the presence of safe and convenient walking and biking infrastructure in Europe, such as traffic calming measures in residential areas and highly visible signage and roadway markings.

ACTIVE TRANSPORTATION AND PUBLIC HEALTH

Arguments in favor of bike-share programs generally assume a connection between active transportation and health, and often frame this connection as a core motivation for the implementation of these programs. Proponents of bike-share programs have good reason to call upon such arguments, which have received support from many public health researchers: Pucher and Buehler have even claimed that “there is a consensus on the need to increase daily walking and cycling levels to promote public health.” Despite these seemingly straightforward imperatives, an in-depth consideration of bike-sharing and health must include a discussion of the relative costs and benefits associated with cycling as active transportation and of the overall effects that
those costs and benefits produce. In the following section, I will review the literature discussing the health benefits and costs of cycling for active transportation, as well as their combined effect. I will then briefly consider the implications of these effects for the proposed bike-share program in Philadelphia. I should, however, emphasize that the health effects discussed here are exclusively preventative, rather than curative, except with respect to clinical depression.\textsuperscript{43} Active transportation may protect individuals from developing health conditions such as obesity, high blood pressure, and diabetes, but it is unlikely that it alone could serve as effective therapy for individuals already suffering from such conditions. Moreover, it is likely that these conditions would serve as additional barriers preventing the individuals they affect from becoming physically active.

The benefits of physical activity in general for mental and physical health have been well established,\textsuperscript{44,45,46,47,48} and studies have now shown that for previously sedentary adults, engaging in active transportation on a daily basis can be as effective for lowering blood pressure and improving cardiovascular health as more structured physical activity.\textsuperscript{49} Although active transportation includes both biking and walking, there is evidence that cycling is more likely to provide the cardiovascular intensity necessary to have a significant effect on cardiovascular health and may thus have greater overall health benefits.\textsuperscript{50} Furthermore, many studies connecting active transportation to health have focused on the potential for the types of physical activity associated with active commuting to protect against the development of certain chronic diseases. The particular health benefits most often associated with increases in active transportation include reduced risks for the development of obesity, diabetes, cardiovascular disease, and mental health conditions.
Pucher et al investigated the protective effects of active transportation with respect to obesity and diabetes, and followed Bassett et al in suggesting that the disparity in obesity rates between the United States and Europe may in part be explained by the relatively high rates of both active transportation in Europe and automobile use in the United States.\textsuperscript{51,52} In addition, Pucher et al found that within the United States, citizens’ likelihood of using active transportation in their commute could account for over half of state-level variation in diabetes prevalence and physical activity.\textsuperscript{53} The results of this study should be viewed cautiously, because the researchers did not control for potential confounding variables such as differences in socioeconomic or educational status, or access to health and healthy food services among individuals who do and do not bike as a form of transportation. However, other studies with tighter controls, such as that by Gordon-Larson et al, have also reported an association between active transportation and a reduction in obesity in men.\textsuperscript{54}

The cardiovascular benefits from active transportation include reductions to cardiovascular mortality and to the risk of developing coronary heart disease, stroke, and hypertension.\textsuperscript{55} In 2009, a study conducted among young adults in the United States—which controlled for sociodemographic factors such as age, race, income, and education, as well as health behaviors such as smoking and alcohol consumption—demonstrated a positive relationship between active transportation and overall fitness in men and women.\textsuperscript{56} They also reported reductions in specific risk factors for cardiovascular disease, such as body mass, obesity, blood pressure, and triglyceride and insulin levels, among men.\textsuperscript{57}

Though these findings may suggest that active transportation yields greater benefits for men than for women, Hamer and Chida’s meta-analysis of eight studies
examining the association between active transportation and cardiovascular health suggests otherwise. These researchers found that active transportation, independent of other forms of activity, reduced cardiovascular risk by 11 percent overall, and provided women with additional protection. Overall, these results suggest that active transportation can act to prevent cardiovascular disease and mortality in both sexes.

Although there has been comparatively little research on the relationship between active transportation and mental health, much of the existing literature points to a positive association between the two. In 2011, a study conducted in Sweden noted that when compared to active commuters, those traveling to work via automobiles or public transportation were more likely to suffer from stress, sleep disturbance, exhaustion, and negative perceptions of their own health. Furthermore, after controlling for job stress, occupational physical activity and age, Ohta et al found a correlation between engagement in active transportation for at least thirty minutes and improvements to mental health status among Japanese men. Although this study did not find a significant relationship between active transportation and mental health status in women, an Estonian study of women aged 18-45 demonstrated that “even a low amount of physical activity…is related positively with women’s mental health.” Studies focusing specifically on the connections between physical activity and clinical depression have reported positive results as well. Carmacho et al reported an association between even moderate physical activity and a reduced risk for depression among adults in Alameda County, which was evident even after controlling for sociodemographic and behavioral factors such as age, income, race, education, and physical disability. It has even been suggested that physical activity may also be an effective manner of treatment with respect to clinical depression.
The connections between respiratory health and bicycling as active transportation are complex, and will be discussed here from two different perspectives: that of the cyclists, and that of individuals living near roadways. For individuals living near roadways, a shift away from motorized forms of transportation is likely to positively affect respiratory health. The health impacts of exposure to near-roadway emissions have been well documented, and include increased risk for childhood asthma and lung cancer, as well as reduced cardiovascular health and pediatric lung function. Each of these studies has controlled for socioeconomic factors and health-related behaviors, and together suggest that exposure to vehicle emissions increases the risk of developing many chronic conditions. This indicates that active transportation, as an alternative to motorized modes of transportation, could have a positive effect with respect to respiratory health by reducing the risks from exposure to vehicle emissions. It is unlikely that a shift towards non-motorized transportation within a city, or even a part of a city, will have a substantial impact on overall exposure to air pollution, but it may decrease the exposure of those living near major roadways to vehicle emissions as a result of reduced automobile traffic.

Although a shift from motorized transportation to cycling has potential benefits for respiratory health at the population level, the act of cycling may itself be a risk factor for exposure to vehicle emissions on an individual level. Especially in the United States, where bike lanes are more often incorporated as part of the road than separated from motor vehicle traffic, cyclists are likely to breathe in exhaust from nearby vehicles, especially carbon monoxide and smog. This has been illustrated by a study conducted by Zuurbier et al in the Netherlands, which found that individuals using all modes of transportation were exposed to concentrations of a variety of vehicle-related pollutants
significant higher than “urban background concentrations.” The authors found that cyclists were exposed to lower concentrations of particulate matter and soot than were bus riders and motor vehicle occupants, but they also reported that because they were engaging in physical activity, cyclists experienced an increased ventilation rate per minute, and as a result inhaled greater doses of all pollutants measured.

The health effects of this increased inhalation of pollutants remains relatively uncertain. The effects of long-term exposure to vehicle emissions have been well elucidated, but cyclists’ exposure varies from that of individuals living in proximity to major roadways in that it is limited to the time in which they are cycling and “is characterized by large short-term variability of concentrations, probably related to emissions from individual vehicles.” A study conducted by Strak et al specifically examining the effects of cyclists’ exposure to particle emissions suggested that such exposure might affect respiratory health, though the study did not report any statistically significant results.

The risk of injuries, primarily from collisions with motor vehicles, constitutes another major concern with respect to the health impacts of cycling. As Beck et al have noted, bicyclists and pedestrians face a greater risk of fatal injuries on any given trip than motor vehicle occupants. As a result of these findings, the authors suggest that a shift from the use of motorized vehicles to active transportation “could result in an overall increase in the numbers of people killed in traffic.” It is here that studies focusing on the risks faced by individual bicyclists and those examining the fatalities of the population of cyclists lead to diverging conclusions. In an examination of the risk of collision faced by individual cyclists, Jacobsen found that increasing the number of cyclists on the road results in a decrease in the
risk of collision for any given cyclist. He explains these findings by linking the increase in visibility of cyclists to an enhancement in drivers’ awareness of cyclists and modifications in their behavior to accommodate those cyclists. However, Beck et al point out that despite the decrease in individual risk, the total number of fatalities may increase simply due to the increased use of a higher-risk mode of transportation.

Although there have been studies dedicated to comparing the relative risks and benefits of cycling in various European cities, research on this subject is very limited in the United States. Research conducted in Barcelona and Utrecht suggests that the health benefits of cycling outweigh the risks. However, cyclists’ risk of fatal collisions is higher in the United States than in either Utrecht or Barcelona. While Beck et al report that cyclists in the United States are 2.3 times more likely than motor vehicle occupants to become fatally injured on any given trip, Rojas-Rueda et al found bicyclists in Barcelona to be only 1.0007 more at risk than motor vehicle occupants. In addition, de Hartog et al declared the Netherlands to be “one of the safest countries in terms of fatal traffic accidents.” This discrepancy presents a barrier to directly applying these results to the United States.

Despite the geographical variation in the risk values associated with cycling, the general formulas used to assess the overall relationship between risks and benefits are valid in any geographical setting. The risks and benefits in the United States can thus be assessed by applying the relative risks of fatal accidents for cyclists in the United States to the overall formula presented by de Hartog et al in their cost-benefit analysis for the Netherlands, calculated through a review of the literature on physical activity, air pollution, and traffic accidents. In 2003, Pucher and Dijkstra reported that in the United States, cyclists faced risks 3.6 times higher per
100 million kilometers than in the Netherlands.\textsuperscript{86} de Hartog et al predicted that among the 500,000 individuals expected to shift from automobile to bicycle use in the Netherlands, the total gain in life years from physical activity would be 337,896 years, and that the losses due to exposure to air pollution and collisions would be 28,135 and 9,639 years respectively.\textsuperscript{87} By multiplying the years lost by 3.6, I estimate that the expected benefit-to-cost ratio of such a shift in the United States would be approximately 5.4, indicating that programs designed to promote bicycling could function as public health initiatives in the US.

Insofar as they promote active transportation, the evidence presented here suggests that bike-share programs will positively contribute to public health. Rojas-Rueda came to a similar conclusion in their 2011 analysis of the health impact of the Bicing program in Barcelona. They conclude that from a health perspective, “low cost public bicycle sharing systems aimed at encouraging commuters to cycle are worth implementing in other cities.”\textsuperscript{88} The demand for a bike-share program in Philadelphia cited by Krykewycz et al suggests that the implementation of such a program could increase active transportation in the city.\textsuperscript{89} There is thus good reason to expect that such a program could provide public health benefits in Philadelphia.

THE PHILADELPHIA BIKE-SHARE PROGRAM AND POPULATION HEALTH

Through the promotion of active transportation, bike-share programs clearly have the potential to provide valuable protection against the development of certain chronic diseases and to reduce all-cause mortality. This suggests that a bike-share program in Philadelphia can be expected to have positive impacts on public health. However, because health conditions are rarely, if ever, distributed
equally across a population, the effectiveness of the bike-share program with respect to public health will be determined in part by its ability to reach those who are most likely to suffer from the health conditions against which it can provide protection.

Just as health conditions are not generally equally distributed across a population, it is unlikely that the membership base of a bike-share program will be equally representative of all sociodemographic groups in the area. According to the Philadelphia Bikeshare Concept Study, professionals, students, tourists, and residents\(^9^0\) are the primary users of the programs in Lyon, Barcelona and Paris.\(^9^1\) The authors predict that students and tourists will be important users of the Philadelphia program, given the many tourist attractions and universities within the city.\(^9^2\)

Practical considerations offer some explanation for this uneven distribution of sociodemographic groups among bike-share users. Although Bae and Mayeres attribute the disparity to a concern with environmental sustainability that “appears to increase with income,”\(^9^3\) it is also likely that individuals with lower incomes are more likely to work very early or late shifts, or to work farther away from home, and thus may find bicycling a less viable transportation option. Despite this, there are a number of arguments suggesting that, given the proper infrastructure, active transportation may be an especially appealing option for these groups. For example, research has shown that in the United States, “low-income households are much less likely than any other income group to own an automobile”\(^9^4\) and to spend a greater proportion of their income on transportation than any other income bracket.\(^9^5\) A bike-share program may provide a more cost-effective means of transportation. Given these considerations, alongside the evidence that transportation decisions are heavily influenced by available resources and infrastructure, it seems likely that a bike-share
program could become a viable transportation option among less economically advantaged sociodemographic groups.

In the following sections, I will conduct a series of analyses in an attempt to identify the geographical areas and sociodemographic groups within Philadelphia County that, from a public health perspective, would likely benefit most from participation in a program designed to promote active transportation. I will also investigate the likelihood that members of these sociodemographic groups would become users of such a program. I have differentiated geographic from sociodemographic groups by using the term ‘health target communities’ in my geographic analysis, and ‘health target groups’ in my analysis of sociodemographic factors. I will conclude by highlighting some of the results of this analysis that the City of Philadelphia and urban planners should take into account when developing the bike-share program.

METHODOLOGY

The analysis presented here was conducted using data provided by the 2010 Southeastern Pennsylvania Household Health Survey (HHS) and obtained through the Community Health Data Base (CHDB). The survey, conducted for the Public Health Management Corporation (PMHC) and accessed for this project through their Community Health Data Base, included 4,399 phone interviews of residents of Bucks, Chester, Delaware, Montgomery, and Philadelphia County, though some respondents did not provide information for all questions. The analysis presented here employs only the information of respondents from Philadelphia County. In addition, this analysis used only the information of respondents between eighteen and seventy-four years of age, as adults over seventy-five are unlikely to benefit considerably from a
campaign aimed at the prevention of chronic illnesses, and most children under the age of eighteen are likely to be excluded as potential users of the program because of concerns regarding liability and insurance.98

Analysis Of Geographic Health Disparities: Identifying Health Target Communities

The first stage of identifying health target groups was an analysis of the geographical distribution of health conditions. This distribution will be important in determining the role that the proposed bike-share program could play in the promotion of public health in Philadelphia. In order for the program to have the greatest effect on public health, it must be accessible to those who are most susceptible to the types of conditions that could be prevented through active transportation. These individuals are likely to reside in communities that currently exhibit high incidences of those conditions. The geographical distribution of bike-share stations will thus in part determine who has access to it. According to the Philadelphia Bikeshare Concept Study, a station is considered to be accessible to an individual if it can be reached on foot within ten minutes—that is, if it is located approximately 1250 feet (approximately 0.2 miles) from that individual’s residence.99 The effectiveness of the proposed program with respect to the promotion of population health can therefore be evaluated by considering the distribution of planned bike-share stations relative to that of health conditions.

It is important to note that the analysis conducted here examines only one component of the geographical accessibility and usability of the program. Namely, it examines the ability of the bike-share program to solve the first-mile problem. It does not investigate its accessibility as a single component of a longer, and potentially multi-modal commute—particularly common among individuals without
access to an automobile—or in relation to individuals’ places of employment within the county. Indeed, as the core market area of the bike-share program has been described as the most richly multi-use center of Philadelphia,\textsuperscript{100} it is likely that the proposed program will be accessible from a large proportion of the county’s main areas of employment. Thus while the analysis here addresses an important component of geographical accessibility, it addresses only one component, and should be considered a starting point for further investigation, rather than a planning imperative.

The distribution of bike-share stations was mapped based on the core and expanded market areas identified in the Philadelphia Bikeshare Concept Study. The core market area was identified as lying within the street borders identified by the Concept Study. The study’s authors therefore highlighted the area within which the bike stations are anticipated to be located, rather than the area that would have access to those stations. The area identified as the expanded market area is less exact, because the Concept Study did not provide precise borders.\textsuperscript{101} These street borders were labeled by comparing the rough outline of the service area provided by the Concept Study with a map of Philadelphia.\textsuperscript{102}

In order to determine the geographic accessibility of the program to those most likely to benefit from it with respect to health, I superimposed the geographical distribution of the prevalence and incidences of health conditions in Philadelphia County with a map of the service area of the proposed program using ArcGIS Software. Data on these health conditions were collected through the 2010 Southeastern Pennsylvania HHS. I conducted this analysis using the CHDB’s Online Data Analysis Tool, accessed through Swarthmore College. This tool allows the researcher to analyze projected values for the entire county, rather than only among those who participated in the survey. Although
the data were originally categorized according to zip code, the sample sizes within each zip code were often too small to allow for an accurate projection to the entire population within that zip code. For this reason, communities, as identified by PMHC, were used as the unit of analysis. Figure 2, which will accompany all subsequent figures in the online version of this publication provides a graphical breakdown of these communities.

The health conditions examined in this analysis were somewhat constrained primarily due to the use of the Online Data Analysis Tool, rather than the original HHS data. Diabetes, high blood pressure (HBP), and obesity were analyzed as primary health conditions. Although excluded from the sociodemographic analysis, the distribution of asthma was examined here as well. This is because asthmatics will benefit not so much from participating in the program as from living in communities in which others have shifted away from automobile use. Although asthmatics should not necessarily be targeted as primary users of the program, the communities in which they live should be.

The analysis presented here focused on the geographical distribution of each of these health conditions across Philadelphia’s twelve communities. Distribution is here measured in terms of the density of cases—that is, the average number of cases per square mile across each community. Data regarding the area of each zip code in Philadelphia was collected through the Pennsylvania Geospatial Data Clearinghouse, and the areas of the zip codes in each community were then aggregated. Densities were calculated by dividing the total incidents of a given condition in a community by the total area of that community. The decision to focus on the density of health conditions was based on the importance of a bike-share station’s spatial proximity to a targeted community to ensure access. By analyzing the number of cases per square mile,
this analysis offers insight into the relative numbers of individuals experiencing a particular health condition that would have access to the program. After mapping the distribution of each health condition, I calculated the total density of health conditions for each community. Through this final calculation, I was able to determine which of the studied communities had the greatest need, with respect to health, for a bike-share program.

Active transportation only has the potential to prevent the negative health conditions associated with inactivity if the individuals most at risk for experiencing these conditions are also unlikely to engage in regular exercise. In order to investigate which communities would likely accrue the greatest health benefits from a bike-share program, I have conducted an analysis on the percentage of individuals in each community who exercise at least thirty minutes a day, three days a week, rather than the number of individuals who do so per square mile. Admittedly, individuals likely to develop the health conditions investigated here are probably less likely to engage in regular exercise than others living in their communities. However, by combining an analysis of the percentage of individuals in each area who do exercise with the density of individuals in that area it becomes possible to develop a rough estimate of the density of individuals in each community who could lower their risk of developing one of the health conditions of interest by engaging in active transportation.

Analysis of Sociodemographic Health Disparities: Identifying Health Target Communities

If a bike share program is to reach the populations most likely to benefit from its use, marketers and planners must create targeted campaigns designed to reach those who are most likely to suffer from the chronic health conditions that may be alleviated through active transportation, and
especially those among this population who are less likely to join such a program without active encouragement. To do so, however, marketers and planners must first achieve a comprehensive understanding of some of the sociodemographic characteristics of this population. In order to investigate which sociodemographic groups could benefit most from a bike-share program in Philadelphia, I have conducted statistical analysis on disparities in both health status and health behavior—in this case, engagement in physical activity—in the city. In addition, I have looked to rates of access and use of various forms of transportation in order to assess whether a bike-share program would be an effective way of addressing these health disparities, and what challenges such a program may face in recruiting those users whose health would greatly benefit from their participation.

Literature from the fields of epidemiology and health economics regarding health disparities and the social determinants of health heavily influenced the selection of sociodemographic variables used in this analysis—namely, sex, race, education, and poverty status.103,104,105,106 “Poverty status” here is classified as either above or below 100 percent, 150 percent, and 200 percent of the Federal Poverty Level (FPL), which in 2010 was marked by an annual income below $10,830 for an individual or $22,050 for a family of four.107 Age is also used as a sociodemographic variable in this analysis, both as a control and a cutoff point after which programs aimed at prevention may be less effective. It stands to reason that the likelihood of developing a chronic condition would increase with age, thus including age as a factor in statistical analysis ensures that any observed increase in risk to a demographic is not simply due to a relatively large proportion of older individuals within the sample of that group. In addition, by establishing the age range at which chronic conditions become significantly more prevalent, the age variable can offer an indication as to
the age range at which prevention programs might be most effectively targeted.

This analysis contains several specifications and limitations that require clarification. The 2010 HHS set the specific parameters that identify respondents as experiencing a particular health condition. All cases of asthma, diabetes, high blood pressure, and mental illnesses reported in the 2010 HHS have been diagnosed by a health professional at some time in the respondent’s life. Although this is certainly the most accurate way to measure incidences of illness, it may lead to underreporting among individuals with little access to health care resources, especially with respect to mental health conditions. Measurements of obesity are based on respondents’ BMI, using a scale recommended by the CDC, whereby individuals with a BMI below 18.5 were classified as underweight, those with a BMI between 18.5 and 24.9 are considered to be at a healthy weight, those with a BMI between 25 and 29.9 are considered overweight, and those with a BMI above 30 are considered obese. Stress was measured on a self-reported scale ranging from 1 to 10.

Small sample sizes in the original survey imposed some limitations on this analysis, resulting in the exclusion of a number of cases. Though they were included in the 2010 HHS, incidences of diabetes and high blood pressure occurring exclusively during pregnancy were eliminated from analysis due to limitations in sample size. Individuals self-identifying as Asian, bi- or multiracial, Native American, or a racial group not included in the survey have been excluded from the analysis due to small sample size as well. It should also be noted that because survey respondents were selected through their phone numbers, it is likely that students attending colleges or universities in Philadelphia, many of whom may have phone numbers from other areas, are considerably underrepresented in the data presented here.
I used this data to determine the relative impacts of each of the selected sociodemographic factors on specific health conditions through the use of binary and ordinal logistic regressions, for which I used PASW Statistics 18 software. Through these tests, I determined the relative probabilities that members of a specific group will experience a given health condition. Table 1, found at the end of this section, provides a list of all independent and dependent variables examined in this analysis. The standard group for each sociodemographic characteristic, against which all other groups within that variable were compared, either represents the majority of respondents or illustrates the effect of increases in a relatively continuous variable, such as age or years of education. By comparing various groups to a standard, this method allowed for the identification of the sociodemographic groups of individuals most likely to suffer a particular health condition.

In order to determine whether the previously identified health target groups may benefit from engaging in active transportation, I have investigated the impacts of the same sociodemographic factors on the probability of engaging in at least thirty minutes of physical activity per day using an ordinal logistic regression. Statistical analysis focuses on the frequency with which members of each sociodemographic group are most likely to exercise for at least half an hour per day, which could be less than once per week, one to two days per week, three days per week, more than three days per week, or none.

An analysis of current methods of commuting offers an indirect means to examine the potential for a bike-share program to increase active transportation by inspiring a modal shift, and thus to contribute to the public health of Philadelphia County. The 2010 HHS classified respondents according to the mode of transportation that they utilized in their commute to work the previous week. Due to small
sample sizes, taxi, motorcycle, ferry, and “other” have been excluded from this analysis, leaving only automobile, public transit, bicycle, “work at home”, and “did not work.” A separate binary regression compared each mode to an aggregation of all other modes, and therefore determined which sociodemographic groups were more likely to use that mode than any other. This analysis was conducted with the expectation that walkers and transit riders are more likely to become bike-share users than automobile drivers and passengers, and those who work from home or do not work.

Table 1. Independent and dependent variables used in the analysis of sociodemographic health disparities in Philadelphia.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Health Conditions</td>
</tr>
<tr>
<td>Reference: Male</td>
<td>Risk of Diabetes</td>
</tr>
<tr>
<td>Comparative: Female</td>
<td>Risk of HBP</td>
</tr>
<tr>
<td>Age</td>
<td>Risk of Mental Illness</td>
</tr>
<tr>
<td>Reference: 18-39</td>
<td>Risk of Obesity</td>
</tr>
<tr>
<td>Comparative: 40-49</td>
<td>Risk of High Stress</td>
</tr>
<tr>
<td></td>
<td>50-59</td>
</tr>
<tr>
<td></td>
<td>60-74</td>
</tr>
<tr>
<td>Education</td>
<td>Health Behaviors</td>
</tr>
<tr>
<td>Reference: Post-College</td>
<td>Probability of Frequent Exercise</td>
</tr>
<tr>
<td>Comparative: &lt; High School Graduate High School Graduate Some College College Graduate</td>
<td>Probability of Use of Public Rec Facilities Primary Mode of Transportation</td>
</tr>
<tr>
<td>Race</td>
<td>White</td>
</tr>
<tr>
<td>Comparative: Black</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>Latino</td>
</tr>
<tr>
<td>Poverty Status</td>
<td>Above 100%, 150%, 200% FPL</td>
</tr>
<tr>
<td>Reference:</td>
<td></td>
</tr>
<tr>
<td>Comparative: Below</td>
<td>100%, 150%, 200% FPL</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RESULTS

Analysis of Geographic Health Disparities: Identifying Health Target Communities

Out of the twelve communities examined, the highest aggregated densities of the health conditions examined were found, in order from highest to lowest, in Olney/Oak Lane, Upper North Philadelphia, West Philadelphia, Lower North Philadelphia, and Center City (Figure 3). The same communities had the highest densities of cases of obesity, though densities were higher in Lower North Philadelphia, Center City and Lower Northeast Philadelphia than in West Philadelphia, even though West Philadelphia had a higher aggregate density of health conditions overall (Figure 4). The analysis of asthma cases revealed a similar pattern to that of obesity, though the relative densities of asthma in Center City were higher than all communities aside from Upper North Philadelphia, which had the highest densities of all communities examined (Figure 5). The relative densities of all communities were the same for high blood pressure (Figure 6) and diabetes cases (Figure 7), with the highest in Olney/Oak Lane, followed by Upper North Philadelphia, West Philadelphia, Lower North Philadelphia, Lower Northeast Philadelphia, and Southwest Philadelphia.

The geographical analysis of physical activity rates revealed some overlap of communities with low physical activity and high rates of health conditions (Figure 8). Bridesburg/Kensington/Richmond, Upper North Philadelphia, Lower Northeast Philadelphia, Germantown/Chestnut Hill, Olney/Oak Lane and West Philadelphia had the lowest rates of regular physical activity. Of these communities, Olney/Oak Lane, Upper North Philadelphia, West Philadelphia, and Lower Northeast Philadelphia had relatively high rates of health conditions as well (Figure 3). Roxborough/Manayunk had both the highest rates of physical activity and the lowest density of health
conditions. The relatively low population density of Roxborough/Manayunk may in part explain the low density of health conditions in that area. Although Center City and Lower North Philadelphia had somewhat high rates of health conditions compared to other communities, they also had the second and third highest rates of regular physical activity, respectively.

Analysis of Sociodemographic Health Disparities: Identifying Health Target Communities

Through statistical analysis, I identified a number of demographic groups at relatively high risk for developing health conditions that could be prevented at least in part through engagement in active transportation (Table 2). These groups, each characterized by a specific demographic variable, can be considered ‘health target groups’ for a project such as the proposed bike-share program. The analysis demonstrated that sex, education, race, poverty status, and age all played significant roles in determining risk for many of the health conditions examined.

The analysis of the impact of age revealed that individuals above the age of forty faced significantly higher rates of diabetes and high blood pressure than their counterparts between the ages of eighteen and thirty-nine. In addition, they were significantly more likely to have diagnosed mental health conditions and to be obese. The only exception in this case was among individuals aged sixty to seventy-four, who were not at an increased risk of having a diagnosed mental health condition and who were notably less likely to suffer from stress than those between eighteen and thirty-nine. It should be considered that this may be unique to the cohort, that is, individuals who were born between 1935 and 1950, rather than individuals between the ages of sixty and seventy-four. Overall, this analysis of age suggests that any program intended to contribute to the prevention of diabetes, high blood pressure, and mental
health conditions would be most effective if targeted at individuals under the age of forty.

Table 2. Odds ratios and 95% confidence intervals demonstrating the relative risks of developing diabetes (n = 3604), high blood pressure (n = 3599), mental health conditions (n = 3609), becoming overweight or obese (n = 3540), or suffering from stress (n = 3571) faced by various sociodemographic groups in Philadelphia, based on the 2010 Southeastern Pennsylvania Household Health Survey. Statistically significant results (p < .05) are marked with an asterisk.

<table>
<thead>
<tr>
<th></th>
<th>Diabetes</th>
<th>High BP</th>
<th>Mental Health</th>
<th>Obesity</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-.229*</td>
<td>-.153</td>
<td>.367*</td>
<td>-.102</td>
<td>.410*</td>
</tr>
<tr>
<td></td>
<td>(-.506,</td>
<td>(-.317,</td>
<td>(.162,</td>
<td>(-.234,</td>
<td>(.286,</td>
</tr>
<tr>
<td></td>
<td>.093)</td>
<td>.011)</td>
<td>.572)</td>
<td>(.030)</td>
<td>.535)</td>
</tr>
</tbody>
</table>

| **Age**|        |         |               |         |        |
| 40-49  | 1.300*  | 1.295*  | .364*         | .439*   | .143   |
|        | (.856,  | (1.035, | (.104,        | (.256,  | (-.026,|
|        | 1.745)  | 1.556)  | .624)         | (.662)  | (1.313) |
| 50-59  | 2.047*  | 2.052*  | .256*         | .476*   | -.062  |
|        | (1.639, | (1.809, | (.013-        | (.309,  | (-.218,|
|        | 2.445)  | 2.295)  | .498)         | (.643)  | (1.304)|
| 60-74  | 2.575*  | 2.777*  | -.333         | .380*   | -.844* |
|        | (2.165, | (2.517, | (.616, -      | (.200,  | (-1.014,|
|        | 2.986)  | 3.037)  | .050)         | (.560)  | (1.674)|

| **Education**|        |         |               |         |        |
| < High School | .618*  | .500*  | .362          | -.058   | .119   |
|              | (.178, | (.149, | (-.026,       | (-.339, | (-.149,|
|              | 1.057) | .850)  | (.750)        | (.223)  | (1.388)|
| High School Graduate | .211 | .345* | .235          | .238*   | -.100  |
|              | (-.159, | (.077, | (-.254,       | (.030,  | (-.291,|
|              | .581)  | .613)  | .083)         | (.445)  | (1.090)|
| Some College | .258   | .389*  | -.026         | .340*   | .176   |
|              | (-.130, | (.105, | (-.359,       | (.119,  | (-.025,|
|              | .645)  | .672)  | .306)         | (.560)  | (1.377)|
| College Graduate | -.235 | .209   | -.190         | -.024   | -.033  |
|              | (-.671, | (-.086, | (-.538,       | (-.248, | (-.235,|
|              | .201)  | .505)  | .157)         | (.210)  | (1.69) |
The analysis of the impact of sex on risk demonstrated that men and women face similar risks overall, though for different health conditions. Men were at greater risk of developing diabetes than women, but women were more likely to develop mental health conditions and to suffer from stress. Because both sexes face similar overall risk, it is unlikely that sex should be used to identify health target groups. Rather, this analysis suggests that marketing campaigns should emphasize different health benefits for men and women in order to encourage their participation.

Education was important in determining risk for the somatic illnesses included in this analysis. Respondents who had not completed high school were more likely to develop diabetes than those with higher levels of education, and

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>.739*</td>
<td>.813*</td>
<td>-.644*</td>
<td>.590*</td>
<td>-.456*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.521, .958)</td>
<td>(.647, .979)</td>
<td>(-.846, -.441)</td>
<td>(.455, .725)</td>
<td>(-.583, .329)</td>
<td></td>
</tr>
<tr>
<td>Latino</td>
<td>.567*</td>
<td>.231</td>
<td>-.299</td>
<td>.551*</td>
<td>-.239*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.182, .951)</td>
<td>(-.069, .531)</td>
<td>(-.611, .014)</td>
<td>(.324, .778)</td>
<td>(-.457, .022)</td>
<td></td>
</tr>
<tr>
<td>Poverty Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPL 100%</td>
<td>.023</td>
<td>.276</td>
<td>.172</td>
<td>.001</td>
<td>.235*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-.303, .349)</td>
<td>(-.008, .560)</td>
<td>(-.119, .464)</td>
<td>(-.235, .237)</td>
<td>(.005, .466)</td>
<td></td>
</tr>
<tr>
<td>Above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPL 150%</td>
<td>.305</td>
<td>-.059</td>
<td>.429*</td>
<td>-.048</td>
<td>.230</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-.806, .695)</td>
<td>(-.379, .260)</td>
<td>(.070, .789)</td>
<td>(-.314, .218)</td>
<td>(-.024, .485)</td>
<td></td>
</tr>
<tr>
<td>Above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPL 200%</td>
<td>.104</td>
<td>.410*</td>
<td>.475*</td>
<td>.298*</td>
<td>.138</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-.235, .443)</td>
<td>(.147, .673)</td>
<td>(.157, .794)</td>
<td>(.081, .514)</td>
<td>(-.067, .343)</td>
<td></td>
</tr>
</tbody>
</table>
those who had not received a college degree, regardless of specific educational attainment, were at increased risk of high blood pressure. Those who had graduated from high school, but not from college, were at an increased risk of obesity when compared to individuals who did not complete high school or who did complete college. These results suggest that all individuals who did not graduate from college should be considered as a health target group for bike-sharing. Marketers might thus consider initiating campaigns in the areas surrounding high schools, or with high concentrations of job opportunities for individuals without a college degree. Planners might consider constructing bike-share stations in areas with these types of employment opportunities as well.

The analysis of race highlighted that ethnic minorities in Philadelphia, and especially African Americans, are at increased risk for all of the somatic diseases examined, and should therefore be considered health target groups. Although respondents identifying as white were significantly more likely to suffer from stress than those identifying as either black or Latino, and black respondents were less likely to develop mental health conditions than white respondents, black and Latino respondents faced increased risks with respect to the majority of the conditions analyzed. Black respondents were more likely than whites to suffer from diabetes, high blood pressure, and obesity, while Latino respondents also experienced higher incidences of diabetes and obesity.

Poverty status was determined to be influential not only in the risk associated with some of the examined somatic illnesses, but with respect to mental illness as well. Individuals living below 100 percent of the Federal Poverty Level were more likely to become stressed than those living above it— even more likely than were those living below 150 percent and 200 percent of the FPL. Those living below 150
percent and 200 percent of the FPL were at increased risk of having a diagnosed mental health condition compared to those with higher incomes. In addition, those living below 200 percent of the FPL were also more likely to have high blood pressure and to be obese than those with incomes above this level. This analysis suggests that all those living below 200 percent of the FPL should be targeted for this program.

Sex, age, education, and race all played a significant role in determining an individual’s likelihood of frequently exercising for at least thirty minutes per day (Table 3). Females, individuals between sixty and seventy-four years of age, individuals who did not complete high school, and Latinos were significantly less likely than other sociodemographic groups to regularly engage in physical activity for at least thirty minutes per day.

*Table 3. Odds ratios and 95 percent confidence intervals illustrating the relative probabilities that individuals (n = 3600) of various sociodemographic groups frequently engage in exercise, based on the 2010 Southeastern Pennsylvania Household Health Survey. Each odds ratio demonstrates the probability that individuals of that characteristic will move from a given level of use to that above it. Statistically significant results (p < .05) are marked with an asterisk.*

<table>
<thead>
<tr>
<th></th>
<th>Frequency of Exercise &gt;30 min/day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Ref.</td>
</tr>
<tr>
<td>Female</td>
<td>-.159* (-.289, -.029)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>18-39</td>
<td>Ref.</td>
</tr>
<tr>
<td>40-49</td>
<td>-.049 (-.224, .126)</td>
</tr>
<tr>
<td>50-59</td>
<td>-.116 (-.276, .044)</td>
</tr>
<tr>
<td>60-74</td>
<td>-.234* (-.407, -.060)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-------</td>
</tr>
<tr>
<td>&lt; High School</td>
<td>Ref.</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>.452* (.229, .675)</td>
</tr>
<tr>
<td>Some College</td>
<td>.389* (1.46, .631)</td>
</tr>
<tr>
<td>College Graduate</td>
<td>.498* (2.42, .753)</td>
</tr>
<tr>
<td>Post-College</td>
<td>.583* (3.06, .860)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White (Non-Latino)</td>
<td>Ref.</td>
</tr>
<tr>
<td>Black (Non-Latino)</td>
<td>-.115 (-.245, .016)</td>
</tr>
<tr>
<td>Latino</td>
<td>-.273* (-.497, .050)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Poverty Level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 100% FPL</td>
<td>.043  (1.192, .277)</td>
</tr>
<tr>
<td>Above 100% FPL</td>
<td>Ref.</td>
</tr>
<tr>
<td>Below 150% FPL</td>
<td>-.002 (1.259, .255)</td>
</tr>
<tr>
<td>Above 150% FPL</td>
<td>Ref.</td>
</tr>
<tr>
<td>Below 200% FPL</td>
<td>-.077 (1.283, .129)</td>
</tr>
<tr>
<td>Above 200% FPL</td>
<td>Ref.</td>
</tr>
</tbody>
</table>

The results of the analysis of modes of transportation used for commuting to work should be regarded with caution due to limitations in sample size. After applying the exclusion criteria discussed in the Methodology section, only 1,871 respondents were included in analysis. This sample size is considerably smaller than those used in all previous analyses, which ranged from 3,540 to 3,618, and is likely due to a lack of reporting in the initial survey. Nevertheless, sex, age, education, race, and poverty status were all found to have significant influences on modal choice (Table 4).

Females, blacks, and individuals living below 200 percent FPL were less likely to travel to work via automobile than men, whites, and individuals living above 200 percent
FPL, respectively. They were also more likely to be transit riders. On the other hand, individuals with some college education or a college degree were more likely to drive than individuals who did not graduate from high school, and all individuals who continued their education past high school were significantly less likely to ride public transit than those who had not completed high school. With respect to biking, females were less likely to bike to work than males, individuals above the age of forty were less likely to bike than individuals below the age of thirty-nine, individuals who had graduated from high school but not from college were less likely to bike than individuals who had not graduated from high school, and blacks were less likely to bike than whites. In addition, blacks were less likely to walk to work than those identifying as white, whereas those living below 200 percent FPL were more likely to walk.

Table 4. Odds ratios and 95 percent confidence intervals revealing the relative probabilities that individuals (n = 1871) from specified sociodemographic groups commuted to work via automobile, public transit, bike, walking, or either worked at home or did not work, in the week prior to their interview for the 2010 Southeastern Pennsylvania Household Health Survey. Statistically significant results (p<.05) are marked with an asterisk.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Graduate</td>
<td>.380</td>
<td>.413</td>
<td>1.972*</td>
<td>.084</td>
<td>N/A</td>
<td>.548</td>
<td></td>
</tr>
<tr>
<td>Some College</td>
<td>.804*</td>
<td>-1.748*</td>
<td>3.029*</td>
<td>-1.122</td>
<td>N/A</td>
<td>-0.398</td>
<td></td>
</tr>
<tr>
<td>College Graduate</td>
<td>.620*</td>
<td>-1.008*</td>
<td>1.207*</td>
<td>-2.234</td>
<td>1.086</td>
<td>.277</td>
<td></td>
</tr>
<tr>
<td>Post- College</td>
<td>.489</td>
<td>-1.967*</td>
<td>1.440*</td>
<td>1.637</td>
<td>N/A</td>
<td>.730</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-.207*</td>
<td>.820*</td>
<td>-1.207*</td>
<td>-1.696*</td>
<td>-.438</td>
<td>.222</td>
<td></td>
</tr>
<tr>
<td>Latino</td>
<td>.087</td>
<td>.240</td>
<td>-2.287</td>
<td>.331</td>
<td>-.488</td>
<td>-1.204</td>
<td></td>
</tr>
<tr>
<td>Below</td>
<td>-.201</td>
<td>.029</td>
<td>-.369</td>
<td>.518</td>
<td>.998</td>
<td>-1.018</td>
<td></td>
</tr>
<tr>
<td>Below 150% FPL</td>
<td>.070</td>
<td>-.107</td>
<td>-.346</td>
<td>-.065</td>
<td>-.085</td>
<td>.561</td>
<td></td>
</tr>
</tbody>
</table>
CONCLUSIONS AND POLICY IMPLICATIONS

My earlier literature review suggests that a bike-share program implemented in Philadelphia could indeed be considered a public health initiative. However, my analysis of the sociodemographic and geographic distributions of health needs and behaviors implies that the program’s planners must take additional steps to ensure that those who are most likely to develop the health conditions against which biking can offer protection have access to the program. In this final section, I will offer a short discussion of some of the gaps between the public health needs of Philadelphia and the solutions offered by the proposed bike-share program. I do so with the objective of providing a foundation for future discussions regarding the evolution of the program to best serve public health.

The proposed core market area is centered around Center City, which has been identified as the area most likely to support a bike share program based on the community’s density of potential users (individuals aged 17-64), employment opportunities, tourist attractions, and recreational areas. It also includes parts of Lower North Philadelphia and West Philadelphia. There is thus some overlap between the communities included in the proposed core market area and those with high densities of health conditions. From a public health perspective, West Philadelphia is an especially important target for the program. Out of the three communities previously mentioned, it is the only one with both a high density of health conditions and low rates of regular exercise.

In addition, in order to increase the impact of the program on public health, certain sociodemographic groups should be targeted as potential users through marketing and education campaigns, as well as infrastructure development. My analysis of the sociodemographic factors influencing individuals’ risk for developing certain chronic health
conditions identified women, individuals without a college degree, blacks and Latinos, and all individuals living below 200 percent FPL as health target groups. The analysis of health behaviors suggests that women, individuals who did not graduate from high school, and Latinos are also less likely to regularly engage in physical activity, indicating that they may accrue additional benefit from participating in a bike-share program. However, this additional assertion is somewhat complicated by my analysis of the modes of transportation most often used in the commute to work or school. This analysis indicated that two of these three groups, women and individuals without a high school degree, are also more likely to take public transit than men and individuals who have completed high school. Past research has shown that transit riders are more likely than users of most other modes of transportation to achieve the recommended level of physical activity simply in their walk to and from the transit station. It is thus possible that these results regarding physical activity are as much influenced by the framing and perception of the survey question as by actual behaviors.

As discussed previously, a bike-share program may provide low-income households with a more economically viable means of transportation as well as an opportunity for active transportation. Furthermore, recent research has suggested that a bike-share program may break down one of the main barriers preventing these individuals from biking. According to the 2005 National Survey of Bicyclist and Pedestrian Attitudes and Behavior, only 29 percent of individuals living below 150 percent FPL have regular access to a working bicycle. In order to specifically target individuals with low incomes, developers could consider implementing a more accommodating pricing scheme, whereby individuals with lower incomes would receive some kind of discounted membership rate, or could choose to pay
the fee in smaller installments, so as to avoid the barrier of a larger upfront cost.\textsuperscript{114}

The results of the statistical analysis on age also have implications for the design of the bike-share program. This analysis suggested that in order to be most effective as a prevention strategy, the bike-share program should primarily target individuals under the age of forty. Although the Philadelphia Bikeshare Concept Study predicts that a key constituent of this age group—namely, students—would be a prominent target group for the program, it also suggests that young professionals may be an important user group as well.\textsuperscript{115} Beyond simply affecting the placement of bike-share stations, this may require conversations with employers regarding the possibility of providing employees with a locker room in which to shower or change after biking to work.\textsuperscript{116}

In summary, a bike-share program in Philadelphia would provide a valuable opportunity for the city to address key health conditions through the promotion of active transportation. However, in order to maximize the effects of the program with respect to public health, it will be necessary for planners to take into consideration the inequitable distribution of health conditions across Philadelphia, both spatially and sociodemographically, as well as the potential barriers that may prevent individuals who would greatly benefit from involvement in the program from becoming members. By taking active steps to provide members of health target groups with convenient access to the bike-share program, planners will be able to both improve the overall health of the city in future years by working to prevent the development of chronic illnesses and reduce the health disparities that have caused these groups to stand apart from the rest of the city’s population.
ACKNOWLEDGMENTS

I would like first and foremost to thank the American Public Health Association for providing me with the opportunity to learn about the connections between public health, transportation and equity through their internship program. In particular, I would like to thank Eloisa Raynault, both for guiding and teaching me during my internship and for providing advice and input in the development of this project. I am also grateful to Professors Ellen Magenheim and John Caskey for taking the time to advise me on this thesis, and to Amanda Eng for providing edits and a critical eye. I would also like to thank Tasha Lewis for discussing with me many of the concepts that I worked to develop and deploy in this thesis I hope to articulate with me. I am indebted to Doug Willen of the Beardsley Media Center at Swarthmore College, for training me in ArcGIS, to Professor Steven Wang, for offering advice on statistical analysis, and to Pamela Harris for helping me to gain access to PASW 18 Software. Furthermore, I would like to thank my team of editors from JPS – Chris Meyer, Kunal Mehta, Michael Ying, and Ethan Raker – without whom this thesis would never have made it to the form that you see today.
Endnotes

3 Although many articles choose to focus on active commuting—that is, walking or biking specifically to and from school or work—I will primarily use the term “active transportation,” which includes a greater variety of destinations.
4 Susan A. Shaheen, Stacey Guzman, and Hua Zhang, “Bikesharing in Europe, the Americas, and Asia,” Transportation Research Record: Journal of the Transportation Research Board 2143 (2010):160.
7 Shaheen et al, “Bikesharing in Europe, the Americas, and Asia,” 160.
11 The gap between an individual’s residence and the nearest public transit station, and then again from the transit station to that individual’s destination
12 Shaheen et al, “Bikesharing in Europe, the Americas, and Asia,” 160.
16 Gradinger, “The Evolution of Bike Sharing Systems,”
17 New York City Department of City Planning, Bike-Share Opportunities in New York City, 2009, 2009, 17.
21 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study 14.
22 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study, 2.
24 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 45.
26 Percentages calculated using data from the 2000 U.S. Census.
27 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 72.
28 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 63.
29 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 81.
30 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 70.
31 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 68.
34 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 69.
35 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 68.
36 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 70.
37 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, ibid.
38 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, *Philadelphia Bikeshare Concept Study*, 81.


47 Fox, “The influence of physical activity on mental well-being.”


61 Ohta et al., “Effect of the physical activities in leisure time and commuting to work on mental health,” 48.


64 Fox, “The influence of physical activity on mental well-being,” 412.


69 Shephard, “Is Active Commuting the Answer to Population Health?”
753.
70 Moniek Zuurbier et al., “Commuters’ exposure to particulate matter air pollution is affected by mode of transport, fuel type, and route,” *Environmental Health Perspectives* 118 (2010): 786.
71 Zuurbier et al., “Commuters’ exposure to particulate matter air pollution is affected by mode of transport, fuel type, and route,” ibid.
79 Rojas-Rueda et al., “The health risks and benefits of cycling in urban environments compared with car use: health impact assessment study,” d4521
80 Jeroen Johan de Hartog et al., “Do the health benefits of cycling outweigh the risks?,” *Environmental Health Perspectives* 118(2010): 1109-1116.
82 Rojas-Rueda et al., “The health risks and benefits of cycling in urban environments compared with car use: health impact assessment study,” 3.
83 de Hartog et al., “Do the health benefits of cycling outweigh the risks?,”
1114.
84 It should be noted that risks such as these are not static, but can rather be alleviated through infrastructure and policy changes. For example, the city of Philadelphia is currently investing in the construction of new bike lanes, which are expected to improve cyclists’ safety (Philadelphia City Planning Commission, “Philadelphia Pedestrian and Bicycle Plan” 2010).
85 de Hartog et al., “Do the health benefits of cycling outweigh the risks?,”
1109.
87 de Hartog et al., “Do the health benefits of cycling outweigh the risks?,”
1114.

90 While the term “residents” is relatively vague, and could be taken to refer to a wide variety of individuals from various sociodemographic groups, the classification of “residents” as “day users” who primarily take out bikes for leisure purposes suggests that the term may refer to residents of a specific socio-economic class.

91 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study, 36.

92 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study, 37.


95 Bae and Mayeres, “Transportation and Equity,” 176.

96 “Public Health Management Corporation’s Community Health Data Base (2010) Southwestern Pennsylvania Household Health Survey”


98 As mentioned previously, many bike-share programs relying on a liability waiver for insurance purposes—including most of the existing programs in the United States—exclude users under sixteen, as opposed to eighteen, years of age (DeMaio 2003:10). The cutoff age of eighteen has been used in this case due to the organization of data in the 2010 Household Health Survey.

99 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study, 72.


101 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study, 40.

102 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study, 96.


108 With respect to both obesity and stress, which were measured in intervals and therefore analyzed using ordinal logistic regression, the statistical test actually provides an indication of the probability of moving up one level: that is, from a healthy weight to obese, or from a stress level of 6 to 7.
110 All geographical analyses are available in the online version of this publication, labeled as Figures 3-8.
114 Given the reliance of third-generation bike-share programs on credit cards for user tracking and accountability, it is possible that credit card ownership might present another barrier to participation in the program. Unfortunately, I was unable to find any clear and current data illustrating the disparities of credit card ownership across income groups.
115 JzT1, Bonnette Consulting, and Delaware Valley Regional Planning Commission, Philadelphia Bikeshare Concept Study, 37.
LABOR MIGRATION AND ITS IMPACT ON THE NEXT GENERATION

Lily Yang

I. INTRODUCTION

1.1 Overview

In 2011, the total number of rural-to-urban migrant workers in China reached 252.78 million, a number that has been described as the largest peacetime flow of labor out of agriculture experienced in recent decades. In China’s current economic and social context, the term “migrant workers” refers to the rural population that resides and engages in non-agricultural occupations in urban cities without permanent residency. This sizeable population has played an indispensable role in the industrialization of modern China. It has also inadvertently restructured the country in many ways that were not been anticipated. In addition to the immediate effects of the population movement, such as the impact of the outflow of farming labor on crop yield and overpopulation in urban cities, an inevitable and long-term social implication is the effect on the welfare of the next generation. The most recent estimates indicate that 37 million children are affected by the movement, which carries societal and economic implications for the future of China. As one or both parents move to

Lily Yang graduated from New York University. She would like to dedicate this piece to Gabriel Zhang for his love and inspiration.
cities in search of better-paying jobs, the child is either brought to the destination with them or is left behind in his or her hometown, generally under the care of other family members. “Migrant children” and “left-behind children” are terms coined to distinguish the two groups of children. Surveys show 56 percent of children of migrating parents are left behind and 44 percent migrate with their parents.³

Multiple factors influence parents’ decisions of whether or not to bring their children. Heckman and colleagues formalized that human capacities are not invariant innate traits; instead, they are causally influenced by parental investment and early social experience.⁴ Early childhood investments yield on average 10 percent annual return; these investments are important because the human capital accumulated in the early years serve as an input in the production function for the formation of both cognitive and non-cognitive skills later in life. Investments in children vary by family type and beliefs. Some parents value certainty and smoothness in their children’s development. The act of migration disrupts the continuity of their education and daily life. In addition, the absence of urban residency, hukou⁵, potentially limits their access to urban resources to an unpredictable extent. Given the uncertainties of city life, migrating parents would consequently choose to leave their children behind. On the other hand, parents who place greater emphasis on emotional investment during formative years are more likely to choose to bring their children with them. Both types of parents choose to pursue the method of investing in their children that they value more, and face an inevitable trade-off. A third possibility, although not reflected in the data in use, is that parents of older children

---

¹ The system of ‘class system’ residency permits where household registration is required by law in China; it classifies citizens into either urban or rural categories of different status, benefits and voting rights to which residents are entitled.
might bring children to cities so that their children can work to contribute to the family asset accumulation.

Among the pioneer studies using the first wave of the Rural to Urban Migration in China and Indonesia (RUMiCI) data, Kong and Meng examined the educational and health outcome of the children of migrants.\(^5\) By comparing both left-behind and migrated children with their non-migrating rural and urban counterparts, they came to some interesting findings. Using parental assessments as a measurement of children’s health outcome and school performance, Kong and Meng found evidence that non-migrating rural children have a higher probability than left-behind children of strong school performance compared to their counterparts, as do urban children compared to migrated children. Similarly, as measured by children’s physical height, rural children are healthier than left-behind children, and urban children are healthier than migrated ones.

In addition, Kong and Meng also estimated a probit model to identify the factors that differentiated children who are left behind from those who move to the cities using a combination of the Urban Migrant Survey and the Rural Household Survey. Factors such as a child’s age, gender, number of siblings, health, parental age and education, migration status, and income turned out to be significantly associated with the decision. Kong and Meng’s study is unquestionably groundbreaking in terms of the wealth of information it contains. Yet there exist several gaps that await future research. First, children’s educational outcome measurements rely almost solely on parental assessment, which, due to its inevitably subjective nature, makes it hard to disentangle the attitudes and assessments from reality. Secondly, the paper fails to acknowledge the possibility that educational opportunities available to the groups of children in question might be different and therefore may affect their school performance. Instead of being a measurement of
outcome of migration, educational opportunity itself might be influencing parents’ decision as to whether or not to bring their children to the cities. Finally, the conditional correlations do not suggest a causal relationship.

1.2 The Problem

A fair amount of research has been conducted examining the outcomes for both children who have migrated and children who have been left behind. However, little attention has been dedicated to explaining the factors that contributed to migrant parents’ decision of whether to bring or leave their children in the first place. Using the first wave (2008) of panel data from the surveys conducted in China as part of the Rural-to-Urban Migration in China and Indonesia Project, or the RUMiCI Project, the author of this paper looks at factors correlated with migrant workers’ decision to bring their children with an emphasis on the educational policies in destination cities. It is a common belief among rural villagers that education is the only way out of their underdeveloped hometown. Although migrating into cities does not entitle citizenship, the admission to an urban university through a national standardized college entrance exam would translate into much higher chances of hukou authorization and permanent residency. In order for their children to receive the best education opportunity they can possibly provide, I hypothesize that migrant workers’ decision on bringing their children is largely influenced by the accessibility of education in destination cities.

Understanding the decision process by which migrating workers choose which children to bring is not only interesting in its own right, but also valuable for further interpretation of results from previous studies. For example, Kong and Meng’s study draws conditional correlations upon which no causal relationship can be asserted. Such causality can be drawn if one factor, such as the availability of
education opportunity, is assumed to be dominating parents’ decision. In this case, the differences in children’s health outcomes and school performance among the different groups could potentially prove to be a result of causal effect.

2. BACKGROUND

2.1 The Migration and its Economic and Societal Context

China’s market-orientated economic reform in 1978 has brought about unprecedented growth to the country, and also resulted in widening urban-rural inequality. An urban-to-rural income ratio of 3.33:1 was recorded, and this earning gap has provided tremendous incentive for rural residents to migrate to urban areas in search of better paying jobs.8

2.2 Direction of the Flow

In general, China’s internal migration flows out of central and northwest China into the southeast. From a provincial perspective, there appears to be a consistent pattern of the direction of labor flow. For example, most Henaneseii laborers flood to Beijing, and relatively few go to other metropolitan areas such as Shanghai or Guangzhou. In Guangzhou, most migrants come from Sichuan, Hunan, and Hubei. Migrants from Anhui, Subei, and Jiangxi tend to cluster in Shanghai (National Bureau of Statistics, 2011; Yuan, 2007).9 This observed pattern of labor flow preserves the random nature of selection of destination city in terms of educational policies, which adds to the validity of my later analysis of parental decisions to bring children with regard to educational policy variations across cities.

ii Henan province is located in the central part of China.
2.3 The Problem

In order to appreciate the underprivileged positions of migrant workers and their children in cities, it is important to understand the *hukou* system and its impact on those who do not possess *hukou* status. As *hukou* holders, urban residents have access to education, medical care, immunization, and other social benefits. The Chinese government uses this system as a way to maintain control to prevent dramatic increases in urban population and its undesirable consequences. Migration literature from many other parts of the world demonstrates that rural children’s educational opportunities are enhanced by their family settling down in urban areas where the education system is more extensively developed. Yet existing research has also consistently shown that China is an exception to this trend. The *hukou* system serves to deter migrants from permanently dwelling in cities because children of migrant workers are often faced with limited school accessibility.

2.3.1 Discrimination in the Education System

The Compulsory Education Law (“The Law” for short) of China (revised 29 June 2006) requires that all children receive free nine-year basic education regardless of gender, race, religious belief and material wealth. However, since the governments’ allocation of funding for education is based on locally registered children, government allocations do not account for migrant students, who became an isolated group that is given little educational attention.

In recent years, the growing number of migrant children in popular destination cities has called for immediate attention from the central government. Despite numerous attempts to increase educational capacity, the supply of educational opportunities has not kept pace with the accelerating demand. Some cities are given no choice but to
set up artificial criteria that are exceedingly difficult to meet as a way to deny migrant children school access. As a result, it can be prohibitively expensive for migrant students to attend school. According to a survey carried out in the mid-2000s, the average education expenditure among migrant families accounted for 20 percent of their household income.\(^{12}\) In extreme cases, in cities that are problematically overpopulated with migrant workers such as Shenzhen, migrant children have to pay on average three times as much as locally registered students to attend public elementary schools.\(^{13}\) Interviews of migrant workers, recorded and broadcasted by China National Radio (2005), show that migrant workers often have to take their already-enrolled children out of school because of exorbitant costs. In response to the increasingly worrisome education problem, several laws\(^{iii}\) have been passed in an attempt to alleviate the situation. Fortunately, in some migration destination cities, the newly implemented laws have had significant impacts. For example, third-tier\(^{iv}\) migration destinations such as Bengbu and Luoyang have successfully invested funding to accommodate migrant children’s educational needs.\(^{14}\) Another successful example is Hefei, whose government designated twenty-nine schools for newly migrated students and injected another 20 million yuan to improve school hardware.\(^{15}\)

In cities with a high concentration of migrants, however, these laws have placed tremendous pressure on local governments. In Guangzhou, home to 430,000 migrant children, approximately two-thirds of migrant children were

---

\(^{iii}\) For example, in order to avoid the danger of the malpractice of arbitrary fee collection, the central government established a “one-fee system”, under which policy schools are only permitted to collect registration and other miscellaneous fees under one name and once per semester (Office of the State Council, 2003).

\(^{iv}\) Chinese cities fall in tier groups, often pointing to population, development of services and infrastructure, and the cosmopolitan nature of the city.
enrolled in private schools. A report in Guangzhou Daily in 2007 revealed that despite Guangzhou’s ongoing attempts to subsidize education, by 2004 only eight out of 109 private schools had received the reimbursement. The Zhengzhou government abolished supporting fees in order to recruit more migrant students in 2006. As a result, the average class size shot up to seventy-two students, and some schools had classes with over 100 students. It was estimated that seventy-four more elementary and middle schools were needed to accommodate all migrant children.16

2.4 Conclusion

Under the institutional background described in this section, along with the emphasis migrant workers place on educating their children, I hypothesize a significant correlation of the educational policy and school accessibility with migrant parents’ decision on bringing their school-aged children. To shed light on this subject, I examined fifteen destination cities, and categorized them according to different education-related criteria to compare each group with similar educational characteristics. I predicted a decision pattern consistent with the educational policies and school accessibility in their new cities—parents are more likely to migrate with their children when their destination city has more generous educational policies. The variations in the educational policies across cities of interest allow comparison, which leads us to conclude a relationship between the decision-making process of migrating parents and the corresponding educational opportunities.

---

16 This is to be differentiated from what private schools are in the United States. In migrant-concentrated cities, private schools are usually opened and run by under-qualified individuals. Those schools are often in poor conditions, and lack appropriate educational facilities and professionally designed classes.
17 See section 3 for detail
3. DATA

3.1 Data Source
The empirical analysis of this paper utilizes the Rural to Urban Migration in China and Indonesia (RUMiCI) dataset. This paper relies on the first wave of data collection, carried out in 2008, as a part of the five-year longitudinal project. Due to the nature of this paper, we will restrict our analysis and discussion to the Urban Migrant section of the dataset, whose summary statistics will be presented in the following section. Access to the China portion of the data was generously granted by the Institute for the Study of Labor (IZA).

3.2 Data Characteristics and Summary Statistics

The survey covers fifteen popular immigration destination cities. The data contained three independent groups: rural households, urban households, and rural-to-urban migrant households. Section D of the Migrant Survey, "Children’s Education," documents children’s background and educational information, as provided by parents or guardians. Section D contains migrant workers’ children under sixteen years of age and children who are over sixteen years of age but remain in school; individuals aged above eighteen years were eliminated due to the nature of this research. In addition to the data in Section D, children who live in the households in destination cities and children who are left behind in rural hometown are also recorded. Due to this precise overlap with the sample of interest, these data were reorganized to display all the individual children of migrating parents in one overall sample set. Information in Section A of the same survey, Household Roster and Personal Characteristics, along with figures in Section B

---

vii Guangzhou, Dongguan, Shenzhen, Zhengzhou, Luoyang, Heifei, Bengbu, Chongqing, Shanghai, Nanjing, Wuxi, Hangzhou, Ningbo, Wuhan and Chengdu.
(parental education), Section C (parental income) and Section I (living areas), were sorted and compiled to complement Section D to form the final data set on which this paper relies.

Table 3.1 presents some summary statistics for the total sample of 2,609 children, including two groups: (1) left-behind children (those living in their rural hometown) and (2) migrated children (those who accompanied parental migration). According to the survey, 38.8 percent of all children migrated, while the remaining 61.2 percent remained in their hometown. The migrant children were slightly younger than those left-behind (see Appendix for t-test results). Children were further broken down into five age categories corresponding to educational groups (i.e., preschool, elementary school and so forth). In both groups, roughly 65 percent of children were pre-school or elementary school aged children (aged below twelve years).

The mean age of left-behind children was greater than that of the migrated ones with statistical significance (see Appendix for a t-test result). For both groups, the gender breakdown is approximately fifty-five to forty-five between male and female children, with slightly more girls located in cities and more boys living in their rural hometown. Table 3.1 also indicates a relationship between children’s well-being and migration status. Nearly 92 percent of migrated children were in good or very good health condition; their counterparts were generally less healthy. It should be noted that no causality could be drawn from these figures—living in the cities did not necessarily cause children to be healthier. It could reasonably be a self-selection process that migrating parents selectively bring healthy children to avoid medical bills in cities without insurance. Additionally, the mean

---

The raw Section D had 2,821 sample points; sixteen were eliminated due to severe lack of information; due to the nature of this study, children above 18 years of age were omitted.
numbers of siblings appear identical in the two groups. A t-test supports this argument (see Appendix).

### Table 3.1  Summary: Share, Age, Gender, Health Condition, and Number of Siblings of Left-behind and Migrated Children

<table>
<thead>
<tr>
<th></th>
<th>Urban Migrant Survey (N = 2,609)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Left-behind</td>
</tr>
<tr>
<td>No. of observations (%)</td>
<td>1,597</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>9.1</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.2</td>
</tr>
<tr>
<td>Aged 1-5 (%)</td>
<td>30.2</td>
</tr>
<tr>
<td>Aged 6-11 (%)</td>
<td>32.0</td>
</tr>
<tr>
<td>Aged 12-14 (%)</td>
<td>17.5</td>
</tr>
<tr>
<td>Aged 15-18 (%)</td>
<td>20.2</td>
</tr>
<tr>
<td>Gender (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>55.6</td>
</tr>
<tr>
<td>Female</td>
<td>44.4</td>
</tr>
<tr>
<td>Health Condition (%)</td>
<td></td>
</tr>
<tr>
<td>Good or Very Good</td>
<td>88.2</td>
</tr>
<tr>
<td>Average and below</td>
<td>11.8</td>
</tr>
<tr>
<td>No. of siblings</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.5</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Migrant parents’ information is summarized and exhibited in Table 3.2. T-tests are presented in the Appendix. While there appears to be no significant differences in parental ages and years of education between the two groups, a workload difference is observable (seventy-one hours and sixty-six hours). Since most low-skilled labor work pays an hourly wage, fewer working hours translates into less income, which makes parents less likely to bring children. An alternative hypothesis assumes that busy parents will have less time to care for their children and therefore choose to leave them behind. While it is tempting to conclude that parents bring their children in order to spend more time with them is false seeing that parents who are observed bringing the children turn out to work longer hours, extra caution ought to be exerted. These data reflect only the fact that the group of workers who do bring children work longer hours, and thus have fewer hours to spend with children, compared to the group that do not bring children. A comparison that accurately reflects the hours spent ought to be made between the workers who do bring their children and their hypothetical selves had they not brought them. Therefore, we cannot reject the hypothesis that wanting to spend time with children is one of the motives to bring them along.

Parents of migrant children make on average 670 yuan more than the other group, confirming the previous speculation that migrant children’s parents tend to have greater financial capacity. Moreover, consistent with my intuition, when both parents are migrant workers, the child has a much higher chance of relocating with their parents. In the data, this is reflected in the fact that of all migrated children, 93.7 percent have both of their parents in the destination city, whereas in the other group, only 48.1 percent have both parents as migrants. Finally, migrated children and their parents’ living condition is recorded to be
significantly better than the parents’ who left their children, further reinforcing the hypothesis that financial capacities, as well as hardware resources, may be critical concerns.

Table 3.2 Parent and Household Characteristic: Mean Statistics

<table>
<thead>
<tr>
<th></th>
<th>Urban Migrant Survey (N = 2,609)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Left-behind</td>
</tr>
<tr>
<td>Parents’ age (years)</td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>33.7</td>
</tr>
<tr>
<td>Father</td>
<td>35.3</td>
</tr>
<tr>
<td>Parents’ education (years)</td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>7.9</td>
</tr>
<tr>
<td>Father</td>
<td>8.8</td>
</tr>
<tr>
<td>Parents’ Workload (hours/week)</td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>65.9</td>
</tr>
<tr>
<td>Father</td>
<td>65.5</td>
</tr>
<tr>
<td>Household Income (yuan/month)</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2321.6</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>1874.8</td>
</tr>
<tr>
<td>Both Parents Migrated (%)</td>
<td>48.1</td>
</tr>
<tr>
<td>Living area (m2)</td>
<td>25.5</td>
</tr>
</tbody>
</table>

Lastly, Table 3.3 paints a more complete landscape of the fifteen cities of interest and the breakdown of the two groups of children. Table 3.3 also depicts city tier ranking.\textsuperscript{ix} It is worth noting that profound variations in the share of the two children groups can be found across the cities; these variations lay the groundwork for the subsequent hypothesis that different cities’ educational policies have strong influences on the decision to bring children or to leave them behind.

In conclusion, this section provides a first glance at the data of interest. I presented some of the most intriguing figures that lay the foundation on which the model (presented in the following section) and the hypotheses are built, which ultimately leads to the final results and predictions.

\textsuperscript{ix} City Tier ranking is obtained from \textit{China Statistical Year Book 2011}. City tier is a way to categorize Chinese cities into groups pointing to population, political and economic power, development of services and infrastructure, and the cosmopolitan nature of the city, with the number one ranking being the most developed.
Table 3.3 City: Number and Share of Left-behind and Migrated Children

<table>
<thead>
<tr>
<th>City</th>
<th>Tier</th>
<th>Total (N = 2,609)</th>
<th>Left-behind (no.)</th>
<th>Left-behind (%)</th>
<th>Migrated (no.)</th>
<th>Migrated (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guangzhou</td>
<td>1</td>
<td>187</td>
<td>140</td>
<td>74.9</td>
<td>47</td>
<td>25.1</td>
</tr>
<tr>
<td>Dongguan</td>
<td>2</td>
<td>165</td>
<td>129</td>
<td>78.2</td>
<td>36</td>
<td>21.8</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>1</td>
<td>102</td>
<td>86</td>
<td>84.3</td>
<td>16</td>
<td>15.7</td>
</tr>
<tr>
<td>Zhengzhou</td>
<td>2</td>
<td>233</td>
<td>109</td>
<td>46.8</td>
<td>124</td>
<td>53.2</td>
</tr>
<tr>
<td>Luoyang</td>
<td>3</td>
<td>109</td>
<td>44</td>
<td>40.4</td>
<td>65</td>
<td>59.6</td>
</tr>
<tr>
<td>Hefei</td>
<td>2&gt;3</td>
<td>242</td>
<td>103</td>
<td>42.6</td>
<td>139</td>
<td>57.4</td>
</tr>
<tr>
<td>Bengbu</td>
<td>&gt;3</td>
<td>143</td>
<td>55</td>
<td>38.5</td>
<td>88</td>
<td>61.5</td>
</tr>
<tr>
<td>Chongqing</td>
<td>1.5</td>
<td>217</td>
<td>160</td>
<td>73.7</td>
<td>57</td>
<td>26.3</td>
</tr>
<tr>
<td>Shanghai</td>
<td>1</td>
<td>258</td>
<td>169</td>
<td>65.5</td>
<td>89</td>
<td>34.5</td>
</tr>
<tr>
<td>Nanjing</td>
<td>1.5</td>
<td>159</td>
<td>117</td>
<td>73.6</td>
<td>42</td>
<td>26.4</td>
</tr>
<tr>
<td>Wuxi</td>
<td>2</td>
<td>67</td>
<td>28</td>
<td>40.6</td>
<td>41</td>
<td>59.4</td>
</tr>
<tr>
<td>Hangzhou</td>
<td>1.5</td>
<td>208</td>
<td>156</td>
<td>75.0</td>
<td>52</td>
<td>25.0</td>
</tr>
<tr>
<td>Ningbo</td>
<td>2</td>
<td>107</td>
<td>80</td>
<td>74.8</td>
<td>27</td>
<td>25.2</td>
</tr>
<tr>
<td>Wuhan</td>
<td>1.5</td>
<td>192</td>
<td>96</td>
<td>50.0</td>
<td>96</td>
<td>50.0</td>
</tr>
<tr>
<td>Chengdu</td>
<td>1.5</td>
<td>218</td>
<td>125</td>
<td>57.3</td>
<td>93</td>
<td>42.7</td>
</tr>
</tbody>
</table>

4. THE MODEL

The following section is inspired by Jasso and Rosenzweig’s study. The variations in household endowment, child and parental characteristics, as well as the destination city amenities, especially the availability of educational resources, affect the ultimate decision by migrant workers to either bring over or leave behind their children. This model assumes that migrating parents value both their own consumption and their children’s outcome in the areas of health and education, for instance. A migrant worker maximizes her utility by choosing the perfect bundle of consumption and children’s outcome under given constraints.

A migrating parent’s consumption level is confined by his or her financial endowment, plus labor earnings, minus expenses. Some parental features, such as age and years of education, serve as a human capital coefficient in their own production function at a wage-earning job. For simplicity, let us assume that each parent holds one income-generating job. Therefore, their income from this particular job is represented by a certain combination of their human capital endowment and working hours. Living cost in cities can be safely assumed to be higher than that in rural areas. Therefore, when parents choose to bring children to the cities, as opposed to leaving them behind, the total living cost increases accordingly. Higher levels of income should consequently translate into greater financial capacity to accommodate additional family members in the cities. With the income level and financial endowment held constant, supporting children in the cities comes with a reduced level of consumption level.

The compromise in consumption is not the end of the story. For those parents who place stronger emphasis on parental bonds and emotional support during formative
years, having their children around can be regarded as a means of emotional investment. This investment is reflected in a higher level of children’s overall outcome, which is represented by the second part of parents’ utility. Within this framework, migrating parents are assumed to make responsible decisions to maximize children’s outcome based on children’s characteristics.

Comparative advantage is the essence of economic and social life. The same set of traits has varying productivity in different functions, and people with different trait sets select into functions that are consistent with their comparative advantages. In China, it is widely believed that male children and female children have comparative advantages in different areas. For rural children, while boys are often more productive in farming duties, girls tend to produce better outcomes at school and other domestic chores. Parents will assign their children to functions where they can perform most productively. Hence a gender difference is expected to be reflected in the likelihood of being brought along. Following the same logic, healthier children, compared to less healthy ones, are more productive in any given function. While parents are motivated to bring less healthy children to cities where medical care is more sophisticated, they are just as compelled to bring healthy children so that they are able to effectively take advantage of the abundant opportunities that cities have to offer.

According to Heckman, there are sensitive periods for the development of cognitive and non-cognitive skills: earlier in life for cognitive capabilities, and later in life for non-cognitive capabilities.\(^{18}\) In other words, children of different ages require different means of care and investments. Therefore, age is a deterministic factor of whether or not to bring children. In addition, in order to ensure fairness among multiple children, parents should weigh the costs and benefits of all children as a part of the decision process.
Finally, educational opportunities in destination cities play an important part in the decision process. Migrating parents’ decisions to bring children is largely affected by the destination city’s educational policies, due to concern for the child’s opportunities and the belief that education is the only way to escape poverty. Indicators of the degree to which urban schools are willing to take in rural migrant students are expected to correlate with the decision.

The above-mentioned relationships and incentives should act as an interrelated whole that influences the ultimate decision. Those incentives are indexed by the following list of variables.

4.1 Child, Parental, and City Characteristics – The Variables

**Children’s Age.** Children’s age is hypothesized to have a strong, if not decisive, influence on the decision. Children of various age groups require differing levels of parental attention. Parents of newborns and toddlers would naturally desire to give additional care and affection due to greater need for parental involvement in early years. Therefore, pre-school children (0–6 years) are hypothesized to be most likely to be brought with their migrating parent(s).

As children grow older, the likelihood of moving with parents decreases systematically. As children mature, they develop sufficient abilities to care for themselves, desire less parental supervision, and grow up to be helpful assets to farming work. Furthermore, an equally reasonable rationale for older children to be left-behind lies in the fact that age is an indicator of educational group. In the preceding section, I discussed the difficult realities that hinder migrant children from attaining normal schooling in cities. In addition, parents also face a trade-off between sending older children to schools in the cities and keeping them on a farm so they
can work. Parents of pre-school children are less concerned about school enrollment. However, as children grow up, it becomes challenging to advance to higher levels of education. Almost all cities, with a few exceptions in Anhui province, require local *hukou* to take the Standardized High School Entrance Exam. This requirement shuts a majority of migrant children out of any high school. To summarize, children’s age is expected to have a negative impact on the parents’ decision to move their children—the older the children, the less likely they will be taken along. I also anticipated observing clear cohort effects across age groups that correspond to differing educational sections (i.e. elementary school group versus middle school group).

**Children’s Gender.** Female and male children tend to grow up to have different sets of qualities. While girls are more disciplined, boys are likely to become a valuable addition to family farming work. Also due to rural people’s stereotypical beliefs, female children do not “need” schooling as much as their male counterparts do. Hence boys are more likely to stay in rural areas where schooling is more readily available. Since girls will not “have much to lose”, they have a higher chance of accompanying their migrating parents even without educational opportunities. I expected a higher likelihood of migration if the child is female.

**Children’s Health.** I expected migrating children to be in good health conditions. Firstly, children with chronic diseases or unstable health conditions are usually better off in a consistent living environment. Secondly, as previously stated, non-local *hukou* often translates into the financial inability to pay for hospital treatments. Bringing children that need medical attention adds to migrants’ already-underprivileged financial burden. Therefore, a positive relationship is hypothesized—better health is correlated with higher likelihood to be brought along.
**Number of Siblings.** Despite many years of the “one-child policy,” many rural residents nonetheless have had more than one child. When rural parents of multiple children become migrants, their decisions not only affect their children individually but also as a group. To ensure fair treatment among children, migrating adults are likely to take either all of their children along or none of them. Due to the financial and emotional burden, of raising children while engaging in full-time urban work, I hypothesize that the more siblings a child has, the less likely he or she will be brought along.

**Parental Age.** Age is a good signifier of a number of other critical factors such as mental maturity, years of work, and migration experience. From this perspective alone, parental age should be correlated positively with the children’s chance of migration. On the other hand, parental and child ages are always correlated. According to the previous discussions, younger children, hence younger parents, paradoxically have a higher chance of moving. As a result, it is hard to theoretically predict the precise direction of influence parental age has on the decision. In addition, I hypothesize that whichever direction parental ages influence the decision, the mother’s age would play a stronger role than that of the father due to her care-giving nature.

**Parental Education.** It is reasonable to hypothesize that parents with varying levels of education value education to differing degrees. More educated parents might attach an intrinsic motivation to educating their children, aside from the monetary returns to additional years of formal schooling in the labor market. As a result, educational concerns might be more important for more educated parents. However, the direction of the influence is unknown a priori. Since enrolling children in urban schools comes with prohibitive difficulties, migrating parents might choose to leave them in rural hometowns where access to education is easy and
stable. On the other hand, more educated parents might value parental involvement more than schooling during formative years. In addition, cities offer unique mind-opening experiences that children could never have received had they remained on the farm. Another plausible channel through which parental education might affect the decision lies in the wage differentials. More educated parents earn higher wages, which creates more financial flexibility to bring over their children.

**Parental Income.** Given the higher cost of living in cities, supporting an additional person further burdens the family’s already-tightened pocket. Therefore, the more income a household generates, the more likely they children will join their parents. It should also be noted that parental income is expected to be positively correlated with parental education.

**Both Parents are Migrants.** It is not uncommon to observe a rural household with only the head, most often a male, working and residing away from home. In such cases, children of the family often stay home with the remaining spouse. When both parents are migrants, and hence there is a smaller likelihood of adult supervision at the rural home, I expect to observe a greater likelihood that a child is also in the city. It should be noted, however, that it is not safe to assert a causal relationship between one parent’s migration status and children’s physical location. The remaining parent might have chosen to stay home precisely because they have decided staying home was better for their children and one parent would have to stay home to care for the children. To sum up, one parent being a stay-home parent is expected to be simultaneously observed as their children being left behind, and the relationship is only correlational.

**Living Area.** Living area refers to the actual living space occupied by migrant members in a given household. To be able to include additional members into the household,
the parents would naturally like to obtain a living space with increased size. Yet it should be pointed out once again, no causality can be inferred. In either case, however, I expected to see a positive correlation between children’s migrant status and the household’s living area.

**City Tier.** City tier is the grouping of Chinese cities into tiers regarding population, development of services and infrastructure, and the cosmopolitan nature of the city, with “1” being the most developed. Although more industrialized cities often translate into more opportunities for migrant workers—and rightfully so—I hypothesized that less-industrialized cities are make more welcoming homes. That is, city tier will exert a negative impact on the decision. This is because metropolitan cities might be overwhelming for rural children; a second possibility lies in the fact that less-industrialized cities mean less competition for both the parents and their children. Given the relatively consistent pattern of the direction of labor flow introduced earlier, the randomness of city selection in terms of educational policies is preserved.

### 4.2 Migration and Education

In the introduction, I argued that it is a commonly held belief of the rural population that education is the only way out of the countryside. As these adults go out of their way in spite of adversity to begin a new life in industrialized cities, it may be asserted that the future of the next generation will be no less of a concern than their own wellbeing. In addition to the factors discussed above, given the perception of the importance of education among rural individuals, I further hypothesize that the educational policies in destination cities are no less critical.

The fifteen surveyed cities vary significantly with regard to geographic location, economic maturity, size, and population. Although all contain migrant workers, the
concentration differs vastly across cities. It is reasonably speculated that the educational capacities and policies regarding migrant children would also show a decent amount of variation. Although the Law requires that all children receive nine years of basic education, and the latest amendment to the Law designated receiving cities as responsible for educating migrant children. In reality, prohibitive difficulties still exist.

I grouped children into four age categories that correspond to four educational groups. In order to present cleaner regression results, I also categorized the cities according to five criteria that are regarded as the most important, and created new variables that reflect differences within a group (summarized in Table 4.1).

These criteria are as follows:

**Sufficient Educational Capacity.** The Pearl Delta Region is the most popular destination for migrant workers due to its geographic location along the southern coastline. In the data, Guangzhou, Dongguan and Shenzhen are located in this region. Shenzhen has long been known as a “migrant city,” with approximately 80 percent of its population “floating.” With the number of out-of-towners increasing exponentially, these cities often fail to meet all the educational needs of their residents. Unfortunately, the supply of educational opportunities has not been able to catch up with the accelerating demand in spite of the governments’ multiple attempts to subsidize education. These three cities are not alone—some others are known to suffer from similar deficiencies.

---

*x* Age Categories (AgeCat) = 1 if child is pre-school (age >0 and <6); AgeCat=2 if child is grade school aged (age >5 and <12); AgeCat=3 if child is middle school-aged (age >11 and <15); and AgeCat=4 if child is high school-aged (age>14 & age<19).

*a* City information was obtained from various resources such as Provincial Municipal Government websites, radio interviews, book publications, personal blogs etc.; refer to References for a complete list.

**a** In Guangdong Province

**a** Zhengzhou, Chongqing, Shanghai, Nanjing, Hangzhou, and Ningbo
Table 4.1 Summary of Educational Policies

<table>
<thead>
<tr>
<th>City</th>
<th>The &quot;four documents&quot;¹</th>
<th>Immunization Record</th>
<th>Proof of Marriage and Child Rearing</th>
<th>Sufficient Educational Capacity</th>
<th>Supporting Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guangzhou</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dongguan</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Zhengzhou</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Luoyang</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hefei</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bengbu</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chongqing</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shanghai</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nanjing</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wuxi</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Hangzhou</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ningbo</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wuhan</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chengdu</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹National Identification Card (of both parents), Hukou Book (of the household), Book of Temporary Urban Residency (of the household), and labor contracts or a business license (of migrating working parents)

Source: various sources (see References)
Whether a city has the capacity—in terms of both hardware and software—is one of the determining factors that influence its policies regarding migrant children. In cities that have the ability to accommodate, admission thresholds are usually lower. In contrast, those cities that fall short of sufficient capacity often set admission criteria arbitrarily high in order to keep down the headcount. For example, in Ningbo, ten documents are required, including Proof of Parental Criminal Innocence, to gain access to school.\textsuperscript{20} The insufficiency becomes increasingly inhibited at higher education levels. Therefore, it is hypothesized that in destination cities where there is sufficient educational capacity, children are more likely to be taken along. I also expected to observe a clear cohort effect across educational groups—the younger the children, the more likely they will be brought along. Taken together, pre-school children in cities with sufficient educational capacity are most likely to join their parents.

**Supporting Fees.** It is stated in the Law that the nine-year basic education should be free of tuition. Because the central government allowed city schools to collect supporting fees from migrant children to meet the shortfall, some schools have engaged in arbitrary fee collection, restricting access to schools for many migrant students.\textsuperscript{21} Although intended to make up for the shortage, supporting fees turned into a practice of discrimination. Hence it should be noted that the requirement of supporting fees, and the insufficiency of educational capacity, are not equivalent. I expected supporting fees to be negatively correlated with the decision to bring children. Additionally, pre-school children in cities without the requirement are most likely to migrate.

**Immunization Record.** Certain legal documents are required to gain school admission. For children of migrant parents, additional documents are necessary. All fifteen cities
in the data share four commonly required documents. In addition, some cities also seek an Immunization Record, which is a proof of immunization issued by state hospitals upon vaccination. Every urban-born child gets properly immunized after birth. Rural-born children, however, might not have access to such medical protection. Interestingly, the direction of the impact cannot be accurately predicted a priori. On the one hand, the requirement appears to be a roadblock that denies school access to children who have not received it and cannot afford to do so in the city. On the other hand, it could also be a self-selective process. Parents who have decided to bring their children might have done so out of intrinsic parental affection, which is reflected in paying sufficient attention to children’s health conditions by getting them immunized. In other words, having kids immunized might be correlated with the decision to have them around in the city.

**Proof of Marriage and Child Rearing.** Some urban schools also require the Proof of Marriage and Child Rearing from the parents. This policy denies school access for migrant children from families that have multiple kids. There are two primary rationales for this requirement. Firstly, the Law operates under the assumption that each family will only have one child to educate. The free basic education is funded by local governments, and each family is allowed to enjoy this benefit only once. Secondly, in response to the already-saturated class sizes, this requirement raises the admission threshold and reduces the number of prospective students. Therefore, this requirement, together with the fact that many rural families have multiple children, is hypothesized to negatively influence parents’ decision. Also, the youngest group of children, whose parents are in

---

xiv National Identification Card (of both parents), Hukou Book (of the household), Book of Temporary Urban Residency (of the household), and labor contracts or a business license (of migrating working parents).
cities without the requirement, is expected to have the highest chance of being taken along.

4.3.1 Methodology — Child, Parental, and City Characteristics

Children’s migrating status may be associated with a wide range of factors. Based on the theoretical background introduced, the following regression is used to measure the correlations between children’s migration status and various child, parental and city characteristics,

\[ Y_i^c = \beta X_i^c + \theta Z_i^p + \delta D_i^m + \varepsilon_i, \]  

(Equation 4.1.3)

where \( Y \) is a binary variable indicating the child’s migration status with \( Y = 1 \) meaning he/she is at the destination with parents, and 0 otherwise; \( X_i^c \) is a vector of children characteristics including age, gender, number of siblings and health status; \( Z_i^p \) is a vector of parental characteristics, which contains parental age, education, and income level; and \( D_i^m \) is a vector of miscellaneous household and city characteristics such as living space, and city tier. The presentation of regression results and interpretations will follow in the next section.

4.3.2 Methodology — Educational Policies

Children’s migration status is hypothesized to be strongly correlated with educational policies in destination cities. The model section provides a foundation of theoretical background on which further analysis will be based. The following regression measures the correlations between children’s migration status and a number of education-related variables.

\[ Y_i^c = \beta_0 + \beta_1 M_i^d + \beta_2 A_i^c + \beta_3 A_i^c + \beta_4 A_i^c + \beta_5 A_i^c + \beta_6 (M_i^d A_i^c) + \beta_7 (M_i^d A_i^c) + \beta_8 (M_i^d A_i^c) \varepsilon_i + , \]  

(Equation 4.3.2)
This is the generic regression equation that all four hypotheses will adopt. Once again, $Y$ is a binary variable indicating the child’s migration status with $Y = 1$ meaning he or she is at the destination with parents, and $0$ otherwise and $M^d$ is an education-requirement-related destination variable. In consistency with the hypotheses, $M^d$ is a dummy indicator of whether the city has sufficient educational capacity; whether the city requires supporting fees to gain school access; whether the Immunization Record is required; and whether the Proof of Marriage and Child Rearing is required. $M^d$ takes a value of $1$ if the answer is yes, and $0$ otherwise. $A^c$ is an age category variable. As introduced before, children are categorized into four groups in relation to educational levels. $A^c_2$ is a dummy variable $= 1$ for elementary school-aged children. $A^c_3$ is a dummy variable $= 1$ for middle school-aged children and $A^c_4$ is a dummy variable $= 1$ for high school-aged children. Due to the expectation that the effect of age group and policy on migration status should not be simply additive but also multiplicative, interaction terms are included to account for the multiplicative effects. In this way, the results will enable us to look for age-related cohort effects with regard to educational policies.

5. RESULT

5.1 Correlation between Migration Status and Child, Parental, Household, and City Characteristics

This section presents the regression results using the models (Equation 4.1.3) introduced earlier. An ordinary least squares model was estimated to identify factors that contribute to differentiating children who moved to the cities from those who were left behind.
### Table 5.1 Correlation between Children Characteristics and Migration Status

<table>
<thead>
<tr>
<th>Dependent Variable: Migration Status</th>
<th>Total</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school-aged</td>
<td>-0.047**</td>
<td>-0.033</td>
<td>-0.059</td>
</tr>
<tr>
<td></td>
<td>(0.024)</td>
<td>(0.032)</td>
<td>(0.036)</td>
</tr>
<tr>
<td>Middle school-aged</td>
<td>-0.063**</td>
<td>-0.032</td>
<td>-0.098**</td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
<td>(0.039)</td>
<td>(0.044)</td>
</tr>
<tr>
<td>High school-aged</td>
<td>0.092***</td>
<td>-0.061</td>
<td>0.125***</td>
</tr>
<tr>
<td></td>
<td>(0.028)</td>
<td>(0.038)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>Child is male</td>
<td>-0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child has above-average health</td>
<td>0.094***</td>
<td>0.057</td>
<td>0.145***</td>
</tr>
<tr>
<td></td>
<td>(0.031)</td>
<td>(0.042)</td>
<td>(0.047)</td>
</tr>
<tr>
<td>Number of siblings</td>
<td>0.006</td>
<td>0.026</td>
<td>-0.012</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.022)</td>
<td>(0.025)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.344***</td>
<td>0.351***</td>
<td>0.325***</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td>(0.044)</td>
<td>(0.048)</td>
</tr>
</tbody>
</table>

* = significant at 10 per cent; ** = significant at 5 per cent; *** = significant at 1 per cent. Standard errors are in parentheses.

Table 5.1 summarizes the results. Consistent with the hypotheses, younger children and healthier children are significantly more likely to be brought along. The gender factor did not turn out to bear statistical significance. Finally, the number of siblings also does not correlate with the decision. This result might be biased due to the fact that in this data set, 55 percent of the surveyed children were the only child; another 40 percent had one sibling and the remaining 5 percent all had two siblings. This bias might have stemmed from the self-selective nature of the migration process itself—families with fewer children are more likely to migrate.

In the next fragment, all relevant factors—child, parental, household, and destination city characteristic—were pooled together to further assess their association with the decision. All children were re-categorized into two groups: one with both parents in the destination city and the other with only one parent being a migrant. Additional explanatory variables include parental age, years of education, working hours per week, and monthly income of each parent, living space in square meters, and one dummy variable indicating destination cities’ tier rank: city tier takes a value of 1 if city falls in the 1 or 1.5 group, and 0 if otherwise.

Table 5.2 reports the results of the estimation. In line with the predictions obtained earlier, when both parents are at the destination city, younger and healthier children are significantly more likely to join their parents in the city. The addition of parental, household and city variables is the more interesting facet of this analysis. Although the directions of the impact of parental age and years of schooling were left undetermined, the results show that

---

xv The re-categorization is based on the regression result suggesting that when both parents are migrants in city, the chance of their children also being in the city is 54%, which is a solid 46% higher than if only one parent is in city.
while the mother’s age has a significantly positive effect, the father’s age is not influential. Parental schooling and income, surprisingly, exert no impact on the decision. The impact of the mother’s work hours per week, despite its subtlety, appears to come with statistical significance, whereas the father’s workload seems irrelevant. Although parental characteristics did not turn out to have an impact with great magnitude, of all the parental variables that do have impacts on the decision, the mother’s characteristics are shown to play a more influential role, as predicted.

It is reported that household and city characteristics are important with regard to the decision. I hypothesized that living areas would be positively correlated with the decision. Results confirmed this speculation. City tier rank negatively affects the decision; relatively less industrialized cities have higher chances of accommodating migrant children.

The second and third columns in Table 5.2 provide a detailed look into the same correlations when only one of the parents is a migrant worker. Overall, when a single parent is in the city, fewer significant correlations are observed. When the mother migrates to the city, the child’s age negatively affects the decision. Of all the parental factors, the mother’s age and income are positively related to bringing her children. Finally, city tier affects the decision in the same negative fashion as the both-parents-migrate group. When the father becomes a migrant worker, contrary to previous findings, the child’s age positively affect the decision—fathers have higher chances of bringing older children to cities. Also worth noticing is the child’s health status and number of siblings: health conditions positively affect the decision, and the more siblings a child has, the less likely she or he would be brought along by the father. Finally, living space is positively correlated with the decision.
Table 5.2  Correlation between Various Child, Parental, Household, and City Characteristics and Migration Status

<table>
<thead>
<tr>
<th></th>
<th>Urban Migrant Survey</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both Parents Migrated</td>
<td>One Parent Migrated</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(N = 1,716)¹</td>
<td>(N = 229)²</td>
<td>(N = 664)³</td>
<td></td>
</tr>
<tr>
<td>Elementary school-aged</td>
<td>-0.076**</td>
<td>-0.116**</td>
<td>-0.021</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.033)</td>
<td>(0.056)</td>
<td>(0.024)</td>
<td></td>
</tr>
<tr>
<td>Middle school-aged</td>
<td></td>
<td>-0.097</td>
<td>-0.009</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.209***</td>
<td>(0.044)</td>
<td>(0.070)</td>
<td>(0.033)</td>
</tr>
<tr>
<td>High school-aged</td>
<td></td>
<td>-0.170**</td>
<td>0.031</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.287***</td>
<td>(0.048)</td>
<td>(0.077)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>Child is male</td>
<td>-0.005</td>
<td>-0.019</td>
<td>0.021</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.024)</td>
<td>(0.041)</td>
<td>(0.018)</td>
<td></td>
</tr>
<tr>
<td>Child has above-average health</td>
<td>0.084**</td>
<td>-0.026</td>
<td>0.051*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
<td>(0.058)</td>
<td>(0.030)</td>
<td></td>
</tr>
<tr>
<td>Number of siblings</td>
<td>-0.037*</td>
<td>-0.017</td>
<td>-0.036**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td>(0.038)</td>
<td>(0.016)</td>
<td></td>
</tr>
<tr>
<td>Mother’s age</td>
<td>0.018***</td>
<td>0.010**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s age</td>
<td>0.000</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.002)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s years of schooling</td>
<td>0.011*</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.010)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s years of schooling</td>
<td>-0.003</td>
<td>-0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s income</td>
<td>0.000**</td>
<td>0.000***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Dependent Variable: Migration Status

* p < 0.1
** p < 0.05
*** p < 0.01
In summary, some of the child, parental, household, and city characteristics have shown the predicted effects. It is worth noting that different elements are taken into consideration and are weighed to varying degrees when both parents are at destinations as opposed to when only one is. Despite the similarity in family structure when one of the parents migrates, interestingly, it is implied that depending on which parent migrates, the ultimate decision might be made based on drastically different factors, and the results could potentially come with profound variations.
5.2 Correlation between Migration Status and Educational Policies across Cities

In the following section, based on the anecdotal belief that education is the only way out of rural poverty, I hypothesized that urban educational policies regarding migrant children’s admission to local schools would have a considerable impact on parents’ decision as to whether or not to bring them. I will present each characteristic and individually analyze their associations with children’s migration status. This is to keep each relationship simple and clean. I will also look at the interaction between age category and the four different policies, coded as dummy variables. This is because the effect of age and policy on migration status should not be simply additive but multiplicative as well. I will specifically look for age-related cohort effects with regard to educational policies. Table 5.3 presents these correlations.

When interacting with the policy variable, I observed that if parents are in destination cities with enough educational resources, their school-aged migrant children have increased likelihood of being brought along. Among the different educational groups, it has been shown that middle school-aged children, when their parents are in “education-friendly” cities, have the highest probability (48 percent) of also being in the city.
Table 5.3 Correlation between Migration Status and the Four Educational Characteristics across Cities

<table>
<thead>
<tr>
<th>Dependent Variable: Migration Status¹</th>
<th>With Sufficient Educational Capacity</th>
<th>Requires Supporting Fees</th>
<th>Requires Immunization Record</th>
<th>Requires Proof of Marriage and Child Rearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school-aged</td>
<td>-0.062**</td>
<td>0.045</td>
<td>-0.054*</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
<td>(0.028)</td>
<td>(0.029)</td>
<td>(0.036)</td>
</tr>
<tr>
<td>Middle school-aged</td>
<td>0.116***</td>
<td>-0.058*</td>
<td>0.104***</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td>(0.034)</td>
<td>(0.035)</td>
<td>(0.043)</td>
</tr>
<tr>
<td>High school-aged</td>
<td>0.146***</td>
<td>0.091***</td>
<td>0.109***</td>
<td>-0.065</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td>(0.033)</td>
<td>(0.034)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>The characteristic presents (see column title)</td>
<td>0.187***</td>
<td>-0.067*</td>
<td>0.134***</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td>(0.035)</td>
<td>(0.034)</td>
<td>(0.043)</td>
</tr>
<tr>
<td>Elementary school-aged in cities with the presence of the characteristic</td>
<td>0.026</td>
<td>-0.026</td>
<td>0.026</td>
<td>0.097**</td>
</tr>
<tr>
<td></td>
<td>(0.048)</td>
<td>(0.053)</td>
<td>(0.049)</td>
<td>(0.048)</td>
</tr>
<tr>
<td>Middle school-aged in cities with the presence of the characteristic</td>
<td>0.123**</td>
<td>-0.02</td>
<td>0.131**</td>
<td>0.112**</td>
</tr>
<tr>
<td></td>
<td>(0.057)</td>
<td>(0.063)</td>
<td>(0.059)</td>
<td>(0.057)</td>
</tr>
<tr>
<td>High school-aged in cities with the presence of the characteristic</td>
<td>0.123**</td>
<td>-0.005</td>
<td>0.057</td>
<td>-0.043</td>
</tr>
<tr>
<td></td>
<td>(0.055)</td>
<td>(0.061)</td>
<td>(0.057)</td>
<td>(0.056)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.365***</td>
<td>0.451***</td>
<td>0.380***</td>
<td>0.427***</td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td>(0.020)</td>
<td>(0.021)</td>
<td>(0.026)</td>
</tr>
</tbody>
</table>

¹ Migration status = 1 if child is in city; = 0 otherwise.

¹ Refer to Table 5.3 for detailed breakdown of cities.

* = significant at 10 per cent; ** = significant at 5 per cent; *** = significant at 1 per cent. Standard errors are in parentheses.

What immediately follows is a presentation of the correlation between children’s migration status and supporting fees requirement in urban school (column 3). In some schools, supporting fees are permitted in order to make up for the shortfall in educational resources to accommodate rural children. Other schools charge exorbitant supporting fees to keep down the headcount. Whatever the reason behind the fee collection, additional fees mean additional financial burdens for any migrant family. Therefore, it is reasonable to expect that when there is an additional fee requirement to gain school admission, migrating parents will react negatively by choosing to leave their children behind.

Results support this hypothesis. The likelihood of bringing children drops from 45 percent to 38 percent in light of this requirement. The results also further support previous findings showing that as children move to higher levels of schooling, their chances of moving to cities gradually decreases. When interacting age with the policy variable, none of the interaction terms turn out to be significant. High school-aged children, in contrast to expectations, turn out to have an increased likelihood of moving. This may be due to the fact that cities that grant high school access to non-local children are often cities without supporting fees requirement. Both may have to do with having a sufficient amount of educational opportunities to offer.

The next variable of interest is the Immunization Record Requirement (Column 4). The introduction of this requirement in the model section provides a first glimpse of why the direction of the impact of this very requirement may potentially go either way.

When admission to schools does not require Immunization Record, a pre-school child has a 38 percent chance of accompanying her parents. As has been previously
pointed out, as children proceed to higher education, their chances of moving to cities falls steadily. The requirement of the Record positively affects the decision. That is, with the requirement in effect, it appears that migrating parents will have a 51 percent chance of bringing their pre-school children. It could potentially be explained by the self-selective nature of the migration process, which was mentioned earlier in the model. For protective parents, getting children immunized might be correlated with the decision to bring their children with them to the cities. If this were the case, there would be a limited degree to which we can read into the data as an accurate resort to draw implication with regard to education and child migration.

The interaction terms indicate that in cities where school admission demands the Record, middle school-aged children are the most likely, with a 51 percent probability, to be brought along. Elementary school- and high school-aged children appear to be almost equally likely to move to cities (41 percent, and 44 percent respectively), although neither is significant at 10 percent level.

Finally, column 5 summarizes the last variable of interest – the requirement of Proof of Marriage and Child Rearing. Due to the many cases of violation of the “one-child” policy among the rural population, this requirement forbids children with siblings from gaining access to school.

Pre-school children, when their parents are in cities without the requirement of the Proof, have a probability of 43 percent of being a part of the migration. The coefficients of the age categories, once again, reiterate my previous findings that the younger the children, the more likely they will be brought along. Two of the interaction terms come with considerable statistical significance. When children’s age group interacts with the dummy variable representing the Proof requirement, the result shows that there is a significantly decreased probability for elementary school-
and middle school-aged children to be taken along. While it might seem like high school-aged children have better chances than the two younger groups, the effect is not statistically significant. Overall, the requirement of the Proof apparently has a negative influence on the parents’ decision, which is consistent with the prediction.

It is worth noting that although the R-squares turned out to be lower than expected, this should not invalidate the results. R-squares represent the percentage of variation in our binary dependent variable that can be explained by our explanatory variables. In this case, it is understood that age, the educational-policy-indicator, and the interaction do not comprehensively explain the variation in children’s migration status. Therefore, R-squares are expected to be low. Moreover, my primary interest is to test a pre-assumed theory rather than forecasting, and therefore the low R-squares should not be of particular concern.

In summary, this part of the regression further asserts that there is a clear age-related cohort effect when it comes to the decision of migrating parents to bring their children. More importantly, it is worth noticing that this age-related cohort effect is twofold. First, without interacting with the education variables in question, the effect supports my previous hypothesis that, overall, younger children are more likely to join their migrating parents. However, with the interaction, a new pattern of cohort effect seems to emerge—it is no longer necessary that the younger children have the highest probability of moving along; instead, dependent on the education variable being examined, varying groups of children are shown to have higher chances of being brought along. In most cases in the results, middle school-aged children in cities with favorable educational policies are the most likely to be members of the migrant team. To conclude, more abundant educational resources, along with lower thresholds to school admission, translates into higher
likelihood that migrating parents will invite their children to join them in their new home in the city. This finding coincides with the fundamental hypothesis that educational-related resources and policies of a destination city will exert an influential impact on the ultimate decision.

6. CONCLUSION

While there have been a number of studies assessing the well-being of migrant children—often in comparison with their rural and urban counterparts—very little attention has been devoted to accounting for the factors that differentiate children who move to cities from those who are left behind. In this paper, I have examined factors influencing migrant parents’ decision of whether to bring the children or leave them behind by comparing the characteristics of the two groups. Consistent with my intuition, some of the child characteristics, such as age and health condition, seem to be associated with certain decision outcomes. Moreover, both parents being at the migrant destination doubles the chances of the child also being a migrant. Finally, the results strongly indicate that aside from the child and parental characteristics discussed, city features, as well as a series of education-related policies, play a vital role in the decision—the more generous the admission criteria, the more likely that parents in those cities will bring their children. Interestingly, relatively less-industrialized cities are more desirable homes to migrant children. This paper sheds light on studies of similar nature—because of the endogenous behavior of migration, future studies in this field will benefit significantly now that a potentially valid instrument for the parental migration decision to bring children starts to unveil.

One shortcoming of this paper lies in the lack of school-level information regarding non-local students’ admission process. This paper relied on city-level educational policies. The RUMiCI data provides a wealth of information about
the migratory push factors, but not about the pull factors. In order to further explore the issue of migrant children’s education and their parents’ decision as to whether to bring them or not, future researchers will need to take more objective measurements to assess urban school’s admission process.

**Endnotes**


5 Ibid., iv.


7 Ibid., iv.


13 “深圳义务教育将免费 34 万外来生可免书杂费” ("Shenzhen compulsory education will be free; 340,000 migrant students will be exempt from book and miscellaneous fees"), 深圳新闻网 (Shenzhen News Net), April 10, 2008, http://www.sznews.com/news/content/2008-04/10/content_1964702.htm


16 “郑州拟抬高农民工超生子女入学门槛惹争议” (Zhengzhou’s plan to bar migrant children born outside family planning quotas from state schools provokes backlash”), 河南商报 (Henan Commercial Daily), February 22, 2008


18 Ibid., v.

19 T Xia, J Chen, X Hu, Z He, Z Zhou, J Peng, Z Zhao, and Z Lu, “深圳市流动人口社区卫生服务需求及影响因素分析” ("Analysis on the demand and influence factors of the Community Health Services of the floating population in Shenzhen City"), 深圳市卫生经济学会 (The Health Economics Society of Shenzhen), November 11, 2008
http://www.hessz.cn/wsec/main?fid=open&fun=show_news&from=view&nid=4313


EMPTY SILOS: ELIMINATING THE ICBM FROM THE U.S. NUCLEAR FORCE STRUCTURE

Lauren Kobor

A NEW STRATEGIC AGE AND A NEW LOOK AT U.S. NUCLEAR STRATEGY

The present role of nuclear weapons in U.S. foreign policy is as a deterrent against possible enemies. However, as the modern security environment changes, the United States needs to rebalance its strategic ends, ways, and means. The current U.S. nuclear force structure is a triad consisting of three delivery legs: intercontinental ballistic missiles (ICBMs), bombers, and submarine-launched ballistic missiles (SLBMs). This triad is a Cold War legacy, created to contain the violent expansion of Soviet power in Europe and Asia, and designed to provide a survivable first and second strike capability in the event of a nuclear war with the Soviet Union. Although never tested in battle, the triad operated as a flexible, credible strategy for national decision makers. The United States is now more than two decades past the ending of the Cold War, but still maintains the same nuclear force structure developed to counter the Soviet threat in a conventional bipolar global conflict. With no more Soviet Union, the United States now faces a greater preponderance of small state adversaries, proliferation, and terrorist groups with nuclear ambitions, issues that U.S. foreign policy minimally considered during the Cold War.

The changing security environment raises the question of whether or not the United States still needs a nuclear triad. During the 2011 defense budget debate, former Defense Secretary Leon Panetta stated that the possible $600 billion budget cut may force the military to eliminate...
its land-based nuclear ICBM program, pressuring Congress into granting the Department of Defense a more favorable budget.¹ According to former Chairman of the Joint Chiefs of Staff Admiral Mike Mullen, “at some point in the future, certainly I think a decision will have to be made in terms of whether we keep the triad or drop it down to a dyad.”² Some military leaders are beginning to see the triad as an unsustainable force structure, especially as each delivery system comes due for modernization. The former Joint Chiefs of Staff Vice Chairman General James Cartwright stated, “The challenge here is that we have to recapitalize all three legs [of the nuclear triad], and we don’t have the money to do it.”³ General John Adams believes, “this budget debate should not be viewed as a catastrophe for national security; rather it represents an opportunity to seriously review our national security strategy.”⁴

The political debate raises strategic questions. What is the role of the nuclear weapon in contemporary U.S. security strategy? Why does the U.S. still have a triad? Can the United States achieve its strategic ends if ICBMs are removed from the force structure? The 2010 Nuclear Posture Review (NPR) defines the role of nuclear weapons in national defense, but does not dictate what force structure would best achieve U.S. strategic ends:

As long as nuclear weapons exist, the United States will maintain safe, secure, and effective nuclear forces, including deployed and stockpiled nuclear weapons, highly capable nuclear delivery systems and command and control capabilities, and the physical infrastructure and the expert personnel needed to sustain them.⁵

Does this force structure still adequately address modern nuclear threats, or should American policy makers take another look at how to best maintain deterrence against a
new variety of enemies, assuming that deterrence is still the primary political aim?

The elimination of ICBMs as a nuclear delivery system has implications on broader nuclear weapons issues as well. President Barack Obama has defined nuclear nonproliferation and disarmament as common international goals. The United States has been a champion of global nonproliferation since the signing of the Non-Proliferation Treaty in 1970, and has recently adopted a Nuclear Zero agenda for the twenty-first century. Ever since dropping the first atomic bombs on Hiroshima and Nagasaki, the United States has viewed its nuclear arsenal as a symbol of power and prestige in the international community. However, the United States has never seen its nuclear military force as a strategic end in itself. Instead, nuclear weapons are perceived as operational means through which doctrines, such as massive retaliation or nuclear diplomacy, can achieve the ultimate strategic and political ends. A vital component of reducing nuclear weapons globally is removing the badge of power associated with a state or actor possessing a nuclear weapon.

The process of quantifying risk in defense policy is tricky. In this paper, the argument will first look at U.S. nuclear strategic ends today and the process by which the modern nuclear strategy and force structure developed throughout the Cold War under the doctrine of deterrence. Understanding that the strategic nuclear means have developed as a response to balancing threats and domestic resources, I will explain in detail the existing nuclear triad in order to distinguish the particular capabilities of each leg and the impact of the triad as a whole. From there, the existing Cold War force structure will be measured against the modern security environment and the various actors within it. Finally, ICBMs as a nuclear platform will be analyzed according to deterrence and the modern security threats to see if a nuclear dyad is capable of maintaining reliability and credibility without the land-based leg.
Purpose and Structure of the Nuclear Triad

The United States has approximately 800 strategic alert warheads, including 450 ICBM warheads and 384 submarine-launched ballistic missiles (SLBMs) on four ballistic missile submarines. The balance of three launch platforms ensures survivability for a second strike, accuracy in deployment, and crisis control. The current defense posture focuses on maximizing the time in which the President may decide to use a nuclear strike. As the triad stands now, the “heavy bombers [are] off full-time alert, nearly all ICBMs on alert, and a significant number of SLBNs at sea at any given time,” according to the 2010 NPR. If necessary, however, nuclear bombers can be put into orbit, more submarines can maneuver within range of any target on Earth, and nuclear ICBMs can acquire new targets. Destroying every U.S. strategic nuclear warhead is virtually impossible.

Nuclear bombers possess the ability to go almost anywhere in the world and are highly visible. While they may be unable to penetrate deep into enemy territory, they can be forward deployed as a threatening signal to an adversary. Strategic tools such as signaling and extended deterrence depend on such visibility. The 2010 NPR describes this capability as necessary to “strengthen deterrence of potential adversaries and [signal] assurance of allies and partners.” Currently, the United States maintains military bases and airfields on nearly every continent, from Europe to the Middle East to Asia, meaning that very few places in the world are unreachable by the U.S. military. By keeping the weapons airborne during a crisis, the bombers enhance their survivability.

With fourteen nuclear-capable Ohio-class submarines under the control of the Navy, the SLBM force is the most survivable of the three legs. According to current doctrine and posture, approximately half of the fleet at any given time will remain forward deployed in the Atlantic and Pacific.
The SLBN force virtually assures reliability in deterrence—the technology in such systems is the most advanced in the world. While expensive, the United States’ capabilities with the submarine force represent the height of nuclear advancement. These nuclear-enabled submarines can strike nearly anywhere in the world from changing and hidden positions, making an enemy attack unlikely.

Intercontinental ballistic missiles offer decision makers the ability to strike a fatal blow to another state from friendly borders. Having the ability to reach out and touch another country without ever leaving the security of your own territory is a powerful tool. According to national policy, the greatest benefits of the nuclear ICBM force include “extremely secure command and control, high readiness rates, and relatively low operating costs.” Additionally, American allies can host a nuclear weapon launch pad within their own borders at relatively little cost to the United States, as in Europe. Nuclear ICBMs are currently the least expensive leg to maintain; however, it is also the least survivable, least flexible, and least likely leg to contribute in a nuclear conflict. Additionally, ICBM silos provide a tempting target to possible U.S. enemies. According to the New Strategic Arms Reduction Treaty (START treaty), the United States will soon undergo the process of “DeMIRVing” every nuclear missile, meaning that each missile will only be capable of carrying a single warhead. Russia and the United States intend to “enhance the stability of the nuclear balance by reducing the incentives for either side to strike first” However, this further reduces the relevance of nuclear ICBMs.

Political and military leaders have a variety of opinions on the subject of ICBMs and the nuclear triad, but both have received strong support from various quarters. The Air Force Strategic Command (STRATCOM) Commander, C. Robert Kehler, states, “I believe that a triad of force makes the most strategic sense, make the most operational sense and ultimately is the right way to go forward today.”
He warns that the question of ridding, or even not modernizing, each leg of the nuclear triad “are not all questions for today.” The 2010 NPR also supports maintaining the triad because of its flexibility, dependability, and responsiveness. Each system, according to the report, can cover the technical difficulties of the others. Overall, the nuclear triad as a system, created to combat the Cold War threat, does offer an incredible amount of survivability and accuracy, as well as maximizing presidential decision time.

U.S. Nuclear Strategy

The maximum number of nuclear weapons in U.S. possession at any point in time was reached at the end of 1967, when the United States counted 31,255 weapons. As of late September 2009, the United States possessed 5,113 nuclear weapons, a 75 percent decrease from the end of the Cold War, with a 90 percent decrease in non-strategic nuclear weapons. According to the New START treaty, strategic warheads currently number at 1,720 and, by 2018, would go to a 1,550 warhead ceiling, with approximately 3,000 reserve and tactical nuclear weapons. In the beginning of his second term, however, President Obama indicated a drop to 1,000 strategic warheads and 1,500 reserves, a decision possibly related to the 2013 budget sequester. Although treaties and policies talk of warhead numbers, the true strategic decision will be what the Obama administration cuts within the existing triad.

During the 2010 NPR, Dr. James N. Miller, recently appointed as the Under Secretary of Defense for Policy, emphasized that, “an effective national strategy for reducing nuclear dangers and sustaining the U.S. nuclear deterrent are long-term challenges that will require support from a long succession of U.S. administrations and Congresses.” According to White House policy, President Obama’s nuclear goals, as of 2012, consisted of the following actions:
Reduce the number and role of nuclear weapons by those states that already possess nuclear weapons, starting first with Russia and the U.S.; to prevent additional countries from acquiring nuclear weapons by strengthening the international non-proliferation regime and by holding accountable those states that have violated their obligations, such as Iran and North Korea; to prevent nuclear terrorism by securing vulnerable nuclear materials and strengthening international cooperation on nuclear security; and, to develop new mechanisms to support the growth of safe and secure nuclear power in ways that reduce the spread of dangerous technologies.

The president’s initial strategic goal in 2009 focused on both reducing the global nuclear arsenal and keeping a “safe, secure, and effective arsenal to deter any adversary.” Throughout his first term, President Obama has advanced his policy of nonproliferation more publicly than his nuclear deterrence policy, such as his renegotiation of the New START with Russia in the fall of 2010.

In maintaining security, the two greatest nuclear threats to the United States are nuclear terrorism and nuclear proliferation. The perception of the threat environment has changed dramatically in the two decades of the post-Cold War era. In a bipolar world, the greatest threat was the massive Soviet nuclear arsenal and an unstable political order. Today, Russia is seen as a key strategic ally with common nuclear goals. Because the threat of nuclear terrorism is of great concern to all states, the United States maintains a strong position to pursue aggressive nonproliferation.

Nuclear nonproliferation has not always been a national priority. In the final days of World War II, world leaders took stock of the atomic bomb’s destructive power. According to former Secretary of State Henry Kissinger, nuclear weapons were not the shiny new symbol of
American power. Instead, they represented, “a change in the international environment so likely to undermine national security that [they] must be resisted.” Kissinger’s warning, however, was ignored. Although historical advances in technology and weaponry reshaped the battlefield, nuclear weapons redefined warfare. A nation could now indiscriminately destroy its enemy without leaving its own borders. How could policymakers and heads of state ‘resist’ such weapons? Would states still be willing to engage in a great power war when the nuclear means could devastate civilization? Policymakers soon adopted deterrence, the new national policy that would guide most national security decisions. The United States, Soviet Union, and several others determined that the risk was acceptable when the perceived alternative was total destruction. Understanding these priorities, states began to arm themselves. Throughout the Cold War, each president, from Truman to Reagan and Bush, approached nuclear strategy differently, although with strands of continuity. According to Stephen Cimbala, an expert on security and nuclear arms control, nuclear weapons have always a form of “armed persuasion,” also known as nuclear diplomacy.

Nuclear deterrence is the ability of a state to prevent another actor from engaging in a particular action based on a threat of nuclear force. For the state employing nuclear deterrence theory in practice, political leaders aim to make the cost of an attack too high for enemies who may contemplate nuclear or conventional aggression. The nuclear bomb was originally meant to enhance military capability in executing war, but, as strategic author Bernard Brodie has noted, nuclear weapons instead changed the overall purpose of national security policies and forces: “Thus far, the chief purpose of our military establishment has been to win wars. From now on, its chief purpose must be to avert them. It can have no other useful purpose.” The U.S. military could no longer be a chiefly aggressive actor. American security
strategy would now be primarily concerned with defense from the possible destruction.

To achieve this end via deterrence, the U.S. needed to acquire a nuclear force structure that would serve both an operational and political signaling purpose, resulting in the concept of the nuclear triad. The balance of the three purposes varied based on the priorities of the president at the time. Truman valued both war-fighting and deterrent signaling, and thus built up a nuclear force in conjunction with conventional forces. Eisenhower valued the political signal above the enormous cost of maintaining operational capacity, and thus focused on nuclear numbers in his doctrine of massive retaliation. Kennedy, who would experience both the Cuban Missile Crisis and the beginning of Vietnam, sought a balance between the two, but eventually emphasized operational feasibility above a continued missile buildup. These policy changes, during the course of the triad’s development, resulted in both a massive, quick expansion of warheads available and the methodical, slower development of new delivery platforms. As the means changed, though, the doctrine of deterrence remained constant throughout the Cold War and into the present.

In order for deterrence to be effective in preventing a nuclear attack by an enemy actor, the American nuclear regime would need to demonstrate both reliability and credibility, a balance postulated in the 1950s by Brodie, one of the first major intellectuals of deterrence theory during the Cold War.25 Reliability refers to the capability to carry out an accurate strike of sufficient size to impose heavy enough costs to outweigh the adversary’s possible gains from aggression, while credibility refers to the commitment of political leaders to give the order for such a nuclear attack instead of just threatening to do so. According to former Secretary of State John Foster Dulles, a pioneer of deterrence in policy, “power never achieves its maximum possibility as a deterrent of crime unless those criminal instincts have reason to fear that [it] will actually be used against them.”26
If a nation fails to demonstrate and effectively give others the perception that an accurate nuclear attack is both militarily reliable and politically credible, then an enemy actor would not be adequately convinced that the American nuclear attack is a viable threat to their own nation.

The primary challenge in maintaining deterrence as a national security strategy is that the policy’s ultimate success depends on the mind of the enemy. If the enemy does not believe the threat, then deterrence has failed, no matter what deterrent actions were taken. To one actor, the threat of an American nuclear bomb destroying a capitol city or their physical military sites may be enough to deter aggression. However, to other actors, the threat against one city may not be enough. The U.S. must convince possible enemies that the American military threat, whether through one bomb or a comprehensive missile shield, is too great a price for any aggressive action.

Today, American political and military strategists must develop a nuclear force structure that addresses a variety of threats and actors. There is no longer a single nuclear threat, as in the Cold War. Policymakers must also answer to the American domestic concern. What force structure will provide enough security against foreign threats? While the executive branch is ultimately responsible for the nation’s defenses, Congress and the public are critical players in the allocation of funds for defense ventures. Therefore, because of the high price tag associated with the development of nuclear technology, the nuclear policy must also balance against limited national resources. And in answering to military, technical, and political leaders themselves, the nuclear security strategy must be both a war-fighting strategy and political deterrent strategy. The answer to each of these concerns depends on the current administrations balance of priorities. The 2010 Nuclear Posture Review emphasized the need for political continuity in adherence to a nuclear policy, based on the fact that any
policy would require more than just the four or eight years of a single president’s term.27

National Security Council Report 68, a landmark resolution that established containment of the Soviet Union as the sine qua non of American foreign policy, resulted in new military policies focused on maintaining global security nearly everywhere as opposed to focusing on one area first.28 This is significant because the document began influencing policy when the Korean War broke out in 1950. MacArthur even advocated for tactical nuclear strikes against the North Korean and Chinese forces. While never implemented, the proposed strikes demonstrate how the weapons at the time were still only appreciated in the context of a wider, conventional military doctrine.

After the aggressive nuclear and military buildup of Truman’s NSC-68, President Eisenhower reverted to a greater focus on nuclear diplomacy as a way to balance the Soviet threat against limited U.S. national resources. Eisenhower worried about the stresses placed on the American economy and industrial complex via a mass arms buildup. As a way to balance war-fighting strategy with ideological battle, the President focused on building a substantial nuclear force structure as a means to deter enemy aggression, but did not counterbalance with a substantial buildup of conventional military forces, coining the term “nuclear diplomacy.”

Eisenhower defined vital interests separately from peripheral interests. John Foster Dulles, Eisenhower’s Secretary of State, elaborated on the change in policy implementation by determining that the new policy would depend on the “deterrent of massive retaliatory power” as the primary defense, a strategy that relied fully on deterrence.29 Dulles expanded with the following analogy:

We keep locks on our doors, but we do not have an armed guard in every home. We rely principally on a community security system so well equipped to
punish any who break in and steal that, in fact, would-be aggressors are generally deterred. That is the modern way of getting maximum protection at bearable cost.\(^{30}\)

The Eisenhower administration pursued a new force structure by cutting back on ground forces and investing in nuclear technology and delivery methods, such as hydrogen bomb technology and the new intercontinental jet bombers.\(^{31}\) Where Truman favored symmetry by building up both conventional and nuclear assets, Eisenhower favored asymmetry through uncertainty in how exactly his administration would respond to any particular aggressive action. The U.S. military force structure shifted to favoring development of naval and air force assets, two areas which promised to provide America with the greatest advantage over any other nation. U.S. allies could be depended on to fill in ground forces if the need arose.\(^{32}\) The U.S. itself would aggressively pursue an expanded missile arsenal, including both ICBMs, SLBMs and intermediate-range ballistic missiles (IRBMs).\(^{33}\) Deterrence was the primary “way”, or operational doctrine, of protecting the U.S. from attack, but the variance in technical capabilities, to be used on a tactical level of war, were to enhance the reliability and credibility of the U.S. nuclear threat. As the U.S. developed the ability to strike a wider range of targets with less lead-time and less risk to American defense personnel, the reach of the American nuclear arm extended to cover early every corner of the world.

Fundamentally disagreeing with Eisenhower’s logic and policies, President John F. Kennedy again changed the direction of the U.S. security strategy. He framed his policies around a strategy of ‘flexible response,’ in which the Department of Defense would again build a military balanced between nuclear and conventional capabilities in order to allow the U.S. greater flexibility in responding to different security threats.
Deterrence in a bipolar world had a very clear-cut definition – make your enemies think that you have a more survivable and reliable nuclear force structure than they do in order to keep them from attacking you first. Specifically, convince them that they will not be able to destroy your second strike capability with their first strike, which would leave them vulnerable to a retaliatory strike. Throughout the Cold War, both the U.S. and the Soviet Union had landed, immobile point targets at which to aim. If an attack was imminent, they each knew where the other’s missile silos were located and approximately how many missiles to expect. They knew where to attack and where to defend. A unipolar world, however, has presented the U.S. with a new series of threats in a new globalized environment. Very few immobile point targets exist. As stated throughout the 2010 Nuclear Posture Review, the threat of nuclear war on a global scale has decreased, but the risk of experiencing a nuclear attack has never been higher due to the threat of non-state actors using terrorism as operational doctrine.\textsuperscript{34} The U.S. must now maintain a security strategy that responds to a multitude of nuclear threats; the traditional strategy of deterrence and the nuclear triad may not be the most effective answer to each threat. While most rational states possess the same ultimate goals – survival, defense, and providing for the welfare of its people – how should the U.S. respond to actors that do not possess those same goals, such as a terrorist organization or insular regime? Before analyzing the proper cohesive strategy, policymakers must first understand each possible nuclear threat and the environment in which they operate.

Post-Cold War Threat Environment

As the world moved into the 21\textsuperscript{st} Century, lacking any global wars or conflicts and enjoying unprecedented
stability in global order, many began to believe that the ending of the twentieth century, most violent century in history, had buried its ghosts with its outdated calendars. The Soviet Union had collapsed, removing the existential threat upon which U.S. defense doctrine and the logic of the nuclear triad had been based. The terrorist attacks on the World Trade Center and the Pentagon on September 11, 2001, fundamentally changed U.S. security strategy and redefined the major issues of the international community. With the rise of globalism and technology, the global environment is more dynamic and complex than at any other point in history, due to the increased access that every actor has to every other actor. Even with a new threat, however, the U.S. has maintained the nuclear triad as its force structure even though very few conflicts involve nuclear issues or would justify any type of nuclear response. Without the Soviet Union, the U.S. has yet to take a comprehensive look at the nuclear force structure in a way that matches capabilities with possible threats. How should our nuclear means adjust to match our adapting political goals?

The collapse of the Soviet Union has opened the nuclear agenda to a variety of other issues, including nonproliferation, arms control, and nuclear terrorism. World leaders hoped for a “nuclear marginalization” after the end of the Cold War. While wars and conflicts would always continue, perhaps nuclear weapons could be so marginalized that they would cease to be a significant factor in national defense strategies. While many nations have adopted ‘no first use’ and ‘no nuclear attacks on non-nuclear states’ policies, nuclear weapons still remain one of the most dangerous, relevant, and volatile threats within the world. Cimbala, in a fashion similar to current U.S. military doctrine, defines the threat in terms of overarching nuclear goals: “nuclear deterrence and arms control; anti-nuclear defenses; and nuclear proliferation.” According to the “National Strategy to Combat Weapons of Mass Destruction,” based on the classified National Security Presidential Directive 17, the
official U.S. policy in approaching all WMDs focuses on counter proliferation, nonproliferation, and WMD consequence management, known as the “3 Pillars.” However, the strategy should also be determined according to the current threats and the political goals associated with those threats.

For the U.S. nuclear regime, policy makers are concerned with three particular actors: legitimate nuclear states, such as China or Russia; rogue states, such as Iran and North Korea; and non-state actors, such as Al Qaeda. However, I have added a category – ‘grey states’ – to occupy the ill-defined place between legitimate nuclear states and rogue states. The criteria for the identification and composition of each of these categories is based on how U.S. policy has addressed and currently addresses these actors from a state and military policy perspective. Each of these threats present particular challenges to U.S. and international security, as well as variations in what types of policies will be effective against each actor. Nearly every one of the states listed below, excepting France and Great Britain, could qualify for entry into a different category based on actions, outside relationships, treaty and institutional participation, and their own domestic goals. The categorization is in no way meant to overly simplify these states’ positions in the international system, but attempts to analyze possible threats that could require a nuclear response from the U.S.

**Legitimate Nuclear States**

Countries considered ‘legitimate nuclear states’ include only those listed in the Non-Proliferation Treaty established in 1968: the United States, Russia, Great Britain, France, and China. While other states with recognized nuclear regimes also exist, these five states were the first to develop nuclear programs and have been involved in the development of international nuclear treaties and institutions from the onset of the nuclear age. Additionally, these states
are known as the P5 – the five states with permanent seats and veto power on the United Nations Security Council. France and Great Britain maintain relatively small symbolic nuclear stockpiles, and have adopted strategies that typically compliment American nuclear doctrine and means. Most importantly, though, these two states are not threats, in a manner that would be applicable to nuclear deterrence, because of their close political relationships with the United States. This section will focus on Russia and China, who present greater uncertainty with regard to future actions vis-à-vis the United States. The 2010 Nuclear Posture Review notes these two countries in particular as being the two states most necessary to maintaining global nuclear stability and forwarding the nonproliferation movement.

The greatest enemy of the United States for over half of a century, Russia is the only other major state with a substantial nuclear stockpile. Vladimir Putin, current president of Russia, recently asserted that Russia still possesses the capability of destroying the United States in “a half hour or less.” The two nations now have a favorable, cooperative relationship regarding their shared interests in nonproliferation and preventing nuclear terrorism. Russia and the United States recently reinvigorated their nuclear relationship with the signing of the New Strategic Arms Reduction Treaty (New START), which would further reduce nuclear stockpiles, deployed warheads, and delivery systems. Even with the assurances of economic and political interconnectedness, though, the sheer size of the Russian arsenal continues to be a driving factor in U.S. nuclear policy. While the U.S. relationship with Russia is significantly more stable than that with the former Soviet Union, American strategists cannot discount the massive capability of the Russian nuclear force structure. Russia as a successor state of the Soviet Union still may present a threat requiring a deterrent response, but the extensive political and institutional relationships that have developed between the United States and Russia in the past two decades have
increased transparency and highlighted similar political goals. Both states are decreasing their nuclear stockpiles, indicating that the weapons race has ceased.

With regard to China, the United States is concerned with the pace and character of its military development, as well as the lack of transparency around its nuclear development and doctrine.\textsuperscript{42} Based on a 2006 Defense White Paper, analyst Jianqun Teng identified three pillars of China’s nuclear policy that serve to support the argument that China is a willing partner in disarmament and nonproliferation: first, that nuclear weapons are only a last resort in war; second, that only the minimum nuclear capability for self-defense will be developed and maintained; and third, that disarmament and international stability among the nuclear powers is paramount.\textsuperscript{43} While the United States and Russia still possess the greatest nuclear arsenals, they will eventually need to engage the three other NPT nuclear states for disarmament as the disparity between arsenals decreases. China has indicated diplomatically that it is willing to engage in such disarmament talks and actions as long as the other nuclear states act in kind. China’s clear priority is in maintaining a stable balance of power among the nuclear states. Because China’s relationship with the U.S. in the future is still unclear and unsecured with a lack of treaties, institutions, and a solid political relationship, the U.S. is warranted in keeping a deterrent force in place.

American strategists have faced the issue of balancing power between the five legitimate nuclear weapons states since the signing of the NPT in 1968, indicating that few strategic shifts are necessary beyond what policies have already been implemented. Russia and China, along with France and Great Britain, all share very similar strategic interests with the United States, making cooperation likely in the international environment.
Rogue States

The rogue states in the international nuclear regime, according to U.S. policy, are characterized as being aggressive pursuers of nuclear weapons programs that goes against their original agreement and signing of the NPT. The United States is primarily concerned with North Korea and Iran. Other states that used to be considered rogue, until their proliferation programs were confirmed to have ended, include Libya and Iraq. The ability of these states to pursue nuclear power serves as the most destabilizing factor in the nuclear relationships between the Western powers and Russia and China, as indicated most recently in the tension between the United States and Russia over Iran.

Two states, Iran and North Korea, best represent the ‘rogue state’ identification in the modern security environment. They are not failed states – both still possess functioning governments with consolidated control and legitimacy within their borders. American policy identifies these two regimes as extreme – one lead by religious fundamentalists, and the other by a military dictatorship.

Modern Iran began pursuing nuclear energy in the 1985, in the middle of the Iran-Iraq War. The past two and a half decades have been shrouded in secrecy, with the Iranians activating their weaponization program multiple times. The Iranians have always asserted that they only pursue nuclear energy for civilian purposes, but the revelation of several unannounced nuclear facilities and programs, along with certain technological practices, has made the United States suspicious of a militarized program intent on creating a bomb. Iran possesses several types of missiles, although none capable of striking U.S. soil. Critical U.S. interests and resources, such as the Strait of Hormuz and U.S. military bases in the Middle East, are within reach, not to mention Israel, whose very existence is an anathema to the fundamentalist Iranian regime.
Iran is still a member of the NPT, meaning that any militarized pursuit of nuclear weapons violates one of the most fundamental principles of the treaty, namely that non-nuclear states will not become nuclear. Although Iran is a member of the NPT, French scholar Thérèse Delpech gives us three reasons why the country may pursue nuclear power: first, for civilian purposes only; second, as a bargaining tool with the United States and other powers; third, to obtain a nuclear weapon. Delpech asserts that Iran possesses “indisputable military nuclear ambitions,” but does not necessarily want a direct confrontation with the United States. Dr. John Mearsheimer argues instead that Iran is currently in its most powerful position. Acquiring a nuclear bomb would leave Iran open to an attack from a number of actors that would be unwilling to grant it a position of power over the region – Israel and Saudi Arabia are two notable examples – and possibly spark a regional nuclear arms race. By sitting on the cusp of nuclear weaponization, Iran can enjoy all of the benefits of deterrence without the heavy costs. Such a strategy still comes with costs, and Iran has suffered from additional economic and political sanctions, particularly on its oil. Increased political pressure has also affected its relationships with Russia and China, whose support is critical for the survival of its nuclear program.

The other major actor characterized as a rogue state is North Korea. North Korea has possessed a militarized nuclear weapons program since the 1980s. While originally a signatory of the NPT, the politically isolated state withdrew in accordance with its weaponization. Surrounded by three of the world’s foremost nuclear powers, the North Korean regime sees its nuclear arsenal as a mechanism through which it can consolidate power and survive in a precarious region. Attempts at negotiation, including one as recently as 2012, have failed to temper North Korea’s aggressive brinkmanship with regard to nuclear testing, missile proliferation, and engagements with
South Korea. The isolated country has made significant contributions to the proliferation of missile and nuclear technology, linking with the A.Q. Khan network, Iran, Libya, Pakistan, and more. The United States has chosen to respond with limited aggressive action. A large military force has been stationed in South Korea since the end of the Korean War, but presidents and their administrations have chosen to stick to negotiations. American deterrence and strong use of signaling, particularly with military and nuclear assets, have likely played a large part in the current relationship.

What threats do rogue states such as Iran and North Korea, who choose to operate outside of accepted international institutions and norms, pose to the United States in the 21st century? The primary concerns of these states actually tend to center on regional power politics. Both states are located in highly volatile regions, and both states see the current balance of power as a threat to their survival. When a state feels that its survival is at risk and institutions have failed to satiate its need for security, it will turn to hard-power options, such as military and nuclear force, to provide security. These rogue states see a nuclear program as a hedge against instability and more powerful states. Neither Iran nor North Korea possesses the resources to match the vast conventional capabilities of the United States, so nuclear power provides the key to a degree of power parity.

Grey States: Pakistan, India, and Israel

Several states exist that are considered neither legitimate nuclear powers nor rogue regimes from the security perspective of the United States. Each of these states refused to sign the NPT upon its release, on principal, and have also developed their own nuclear capabilities while remaining an active participant in the international community. These states include India, Pakistan, and Israel.
India, as a leader of the Non-Aligned Movement, has clearly dictated a strong, principle-based stance against the perceived exclusionary nature of the NPT and the modern nuclear environment. India has adopted a doctrine of “minimum deterrence”, whereby it perceives its nuclear assets as political tools instead of operational war-fighting assets. What India does possess currently lies in bits and pieces of assembly, but the country has committed to a “No First Use” policy and, as a possible response doctrine, ‘massive retaliation’. Rajesh Basrur, in an analysis of India’s nuclear doctrine for a NATO study, sees the state’s “strategic culture” as “a pattern of thought and action” that is “minimalistic in its (reluctant) acceptance of nuclear strategy and incrementalist in acting upon it.” According to Basrur, India’s nuclear posture is minimalist, but, due to the number of players and the somewhat murky relationships between the government and the military powers, political and military leaders still possess the ability to expand their operational nuclear capabilities.

India and the United States have fostered a symbiotic nuclear relationship. In 2008, President George W. Bush pioneered the U.S.-India Civil Nuclear Deal, which solidified a detailed security framework based on the Additional Protocol to the NPT in exchange for greater technology and resource access for India. India and Pakistan have demonstrated that, while capable of being pushed to the brink, neither state is willing to release the first nuclear punch. India and China have demonstrated the ability to negotiate and now have a prosperous, friendly relationship based on economic trade. India possesses a formative, conventional military and is more likely to favor conventional conflict resolution of the nuclear option, given its participation in the Non-Aligned Movement.

Another current “gray state,” Pakistan, could, in the near future, surpass both the U.K. and France as “the fourth largest nuclear weapons state.” This threatens President Obama’s commitment to reducing nuclear stockpiles and
would further complicate future arms negotiations, especially among the five legitimate nuclear powers. The U.S. has invested over $100 million in strengthening Pakistani security assets and skills. The United States has a vested interest in maintaining the security of Pakistan’s nuclear stockpiles and resources. However, this intense U.S. interest has many Pakistani officials worried that the United States is actually attempting to steal or gain control of Pakistani nuclear resources.

U.S. policymakers are especially concerned about the U.S.-Pakistan relationship, given current U.S. military operations in neighboring Afghanistan. If not properly prioritized, the lack of security around parts of the Pakistani nuclear program could allow an extremist group to gain control of valuable nuclear material. Such material could be sold to an enemy of the United States or used against it by groups that see the United States as an existential threat to their survival. Additionally, Pakistan still lacks effective internal institutional stability, making policy formation and accountability difficult. Finally, the disputed province of Kashmir has proven to be a volatile issue in the past and the source of much rivalry between India and Pakistan.

Maintaining a “posture of ambiguity,” Israel is suspected of having nuclear capabilities, but the small state has neither confirmed nor denied the weapons’ existence. Israel, according to Yair Evron, a professor of political science at Tel Aviv University, has demonstrated “self restraint and caution” through its responsible use of nuclear policy and its lack of “coercive diplomacy.” Recently, however, Israel’s threats to preemptively strike Iran in the spring of 2012 threatened relations between Israel, the United States, and Iran. The United States, as an ally of Israel, found itself in a difficult position. Although the United States has been active in trying to remove Iran’s nuclear weaponization program, could policymakers support a preemptive attack on an otherwise legitimate and stable state? The U.S. decided that it would support Israel based
upon loyalty owed to the alliance, but policymakers have thus far done everything possible to prevent such an attack by the Israelis.

Concerning Israel, the United States must be aware of the small state’s perceived security environment. While Israel has thus far proven to be a dependable and restrained ally, it also sees a very real existential threat in the official policies of several of its neighbors. Therefore, it may be willing to take certain deterrent actions that the United States would not otherwise support. Proliferation is not a concern, but a nuclear missile attack may be more realistic.

Non-State Actors

The growth of extremist non-state actors is the primary reason that the risk of nuclear attack, not necessarily nuclear war, has increased dramatically in the 21st century. Such groups, state-sponsored or not, do not represent a defined territory or population. For example, the extremist jihadist group al-Qaeda uses terrorism to achieve their goal of restoring fundamental Islamic law globally and defeating the United States. Terrorism as a tactic looks to affect a state by mobilizing that state’s population through fear. These organizations constantly seek bigger ways to paralyze a nation with fear and force a policy shift. Look no further than the attacks on the World Trade Center on September 11th, 2001.

Non-state actors are unique because they exist outside of the state paradigm. In attacking al-Qaeda, the United States cannot bomb its cities, invade its lands, or use direct political pressure through economic sanctions. The U.S. has found effective ways of combating non-state actors, such as violent extremist and terrorist groups, through conventional means, but no acceptable nuclear alternatives exist. While a bunker-buster type of nuclear tipped explosive would be productive in attacking extensive cave networks, such an attack would need to be executed on the soil of
another sovereign state. What, then, would be an acceptable response to a non-state actor’s use of a nuclear weapon against a U.S. city? There can be no Cold War doctrine of “massive retaliation” or nuclear strike against a landless enemy. Additionally, the paradigm of the non-state actor, especially a violent extremist group, makes them impervious to the attempts at deterrence by states. An extremist group intent on committing an attack does not care about its victim’s nuclear capability or second-strike forces. America’s strategic goal of deterring nuclear attacks, then, is obsolete against a non-state actor without territoriality.

CANN THE U.S. MEET ITS STRATEGIC GOALS WITHOUT NUCLEAR ICBMs?

According to Theodore Caplow, the nuclear security environment is more stable than ever before. He argues that, “The classic problem of abolishing international war is nearly solved, although nobody seems to notice. . . For the first time in history, major geopolitical goals are being reached by international consensus with no application or threat of force.”

The discussion on whether or not war itself is ending is beyond the scope of this argument, but the current nuclear security environment is at a level of unprecedented stability and security. While we can credit the work of past and current policymakers for achieving such stability, U.S. nuclear strategy cannot be static because the threats facing the United States are dynamic and continuously evolving. With the balance of nuclear forces favoring the traditional nuclear powers, the United States should take advantage of such a moment to prepare for tomorrow’s security threats. Such is the basic premise of deterrence – prevent future threats by preparing today’s force posture and strategy.

As stated earlier, the effectiveness of nuclear deterrence depends on the administration’s ability to deliver both reliability of attack and political willingness to execute
such an attack. The current nuclear triad and maintenance of ICBMs as a nuclear delivery method exist to support the first prong of deterrence – reliability of the attack. The U.S. must be capable of delivering a lethal and accurate nuclear strike on an enemy target. Throughout the Cold War, nuclear bombers, missiles, and submarines offered a balance of flexibility, survivability, payload, and accuracy of fire. No single delivery method could provide all four assurances; so all three were maintained to ensure the overall nuclear force could assure reliability. The current rationale behind maintaining the nuclear triad, as opposed to reducing it to a dyad, is that the three delivery methods offer the same assurances as before. As the 2010 Nuclear Posture Review states, “Retaining all three Triad legs will best maintain strategic stability at reasonable cost, while hedging against potential technical problems or vulnerabilities.” However, if the United States could maintain its deterrent capability while still providing reliability and political willingness without one of the triad legs, then its removal would be necessary to support further strategic goals, such as nonproliferation.

Strategic policymakers have been aware of the vulnerabilities of the nuclear ICBM force since the 1970s, but the possibility of an enemy eliminating the ICBM leg of the United States through an attack would be “momentous.” At the time of the Cold War, the question was centered on losing land-based nuclear assets only through an attack by the Soviet Union, but even then, Lawrence Freedman states that loss or removal of ICBMs “was more than compensated for by the other two legs (bombers and SLBMs), which, even somewhat depleted themselves, would still be capable of delivering a powerful retaliatory blow.” Policy makers, concerned with both credibility and reliability, worried that if the ICBM force were to be taken out, the remaining two legs would be more vulnerable to attack. However, this argument discounts the natural survivability of the bombers and SLBMs. Because
nuclear ICBMs are land-based assets, attackers have a greater probability of successfully eliminating them with a strike due to several reasons. First, a missile silo is a set location. That location is more likely to be discovered by an enemy than the perpetually moving locations of bombers and SLBMs. If another actor, most likely a state, wishes to make an offensive first strike against the U.S., it will only commit to that attack if it perceives that it would eliminate a significant amount of U.S. nuclear assets in order to minimize the effects of a U.S. counterattack. Land-based nuclear ICBMs are the most visible, immobile, and naturally indefensible asset to strike. Although air and sea-based assets may still exist, the enemy’s perception of success or injury will play a significant role in the decision to strike. Since deterrence aims to affect the enemy’s thought process and decision-making cycle, the removal of land-based nuclear ICBMs would have a palpable effect on the willingness of a state to launch a nuclear strike on the United States.

A missile silo does allow for a vivid signal to a domestic and an international audience. Nuclear ICMB forces are kept at the ready, signaling that the United States can launch a strike within minutes at any point in time. However, the downfall of keeping these missiles at full notice is similar to an on/off switch – policymakers and military strategists have no room for escalation. Although conventional missiles without their nuclear payload can be tested from time to time, U.S. signaling power has actually been diminished because, unlike bombers, a nuclear missile cannot increase its threatening appearance during situational circumstances. The missiles are always at full readiness. Though sending the message of “always ready” certainly has its own merits, it also limits the flexibility of the President in responding to various situations. ICBMs, then, may actually negate a flexible response as desired by decision makers. Because active nuclear land-based missiles have existed in U.S. policy for decades, the removal of the nuclear ICBM force may prove to have very little effect on potential
enemies. And because the United States also always keeps its other nuclear legs at the ready, the credibility of a nuclear strike is still present. What would be removed is the guarantee of a massive retaliatory strike.

On the topic of massive retaliation via land-based ICBMs, former Secretary of Defense James Schlesinger questions the worth of instant access to such a massive response capability in the case of “anything approximate to a disarming first strike against the United States.”

He discusses the President’s need for an immediate link to a massive retaliatory force:

But such a development could bring into question our ability to respond to attacks in a controlled, selective, and deliberate fashion. It could also give the Soviets a capability that we ourselves would lack, and it could bring into question the sense of equality that the principles of Vladivostok so explicitly endorse. Worst of all, it could arouse precisely the fears and suspicions that our arms control efforts are designed to dispel.

The United States would only need a massive retaliatory response against an actor possessing extensive resources itself, such as a state – most likely a legitimate state such as Russia or China, both of which have substantial nuclear capabilities. However, as Schlesinger and Freedman have noted, the use of such a capability would undermine any intermediary or regulatory institutions in place to prevent nuclear annihilation. Additionally, in the case of entering into a conflict with another state, U.S. doctrine favors conventional methods of achieving peace, stability, and survival. Maintaining ICBMs, but replacing the nuclear payload with an advanced conventional payload would better nest the capability within the conventional military force structure. By removing nuclear ICBMs, the U.S. would
maintain a nuclear option and expand conventional options without significantly affecting the state’s use of warfare.

Land-based nuclear ICBMs provided the United States with access to static targets nearly anywhere in the world and allowed the President an immediate retaliatory attack capability. During the development of the triad, ICBMs were a counterforce asset, meaning that they could focus on a specific target with unparalleled accuracy. With the less-accurate early bombers and SLBMs, also considered counterforce assets, accuracy was not necessarily guaranteed, but a broad targeting area would heighten the unpredictability of the U.S. threat. However, with improvements in the technological capabilities of bombers and SLBMs, the threats that only ICMBs could meet can now be addressed without the land-based leg. Coupled with an increased emphasis on deliberate attacks and regulatory institutions, the president no longer needs instant access to nuclear ICBMs because the other two legs offer similar, more adaptive responses. Reliability and credibility, then, could still be maintained with only a nuclear dyad.

But how would a dyad stand against the four modern threat actors discussed earlier? While enmeshed in treaties, talks, and international institutions, Russia and China still represent a conventional, great power threat to the United States. Deterrence was a strategic doctrine meant to defend the U.S. against other states, so credibility and operational reliability are still necessary. Russia still possesses the nuclear capability to bring the U.S. into a great-power nuclear war, and that threat continues to significantly impact U.S. nuclear policy and strategy. However, as discussed, the removal of the ICBM force structure would have little impact on the operational capabilities of the U.S. nuclear force structure. The remaining nuclear assets would still be able to combat these large state threats with payload, survivability, flexibility, and accuracy. To rogue states such as Iran and North Korea, military signaling, both nuclear and conventional, is necessary and effective. The United States
needs to control the escalation of its signaling based on the situation because of Iran and North Korea’s shared tendency to change threat levels unexpectedly and often within very short spans of time. In regional conflicts, such as that between India and Pakistan, the composition of the U.S. nuclear arsenal would have little impact. The best way to combat the instability in the southeast Asia region through deterrence would be through the conventional forces already in the area. By keeping a presence in the region, as well as actively working with both India and Pakistan to reduce internal and nuclear program instability or vulnerabilities while bringing them under international nuclear regulation institutions, the United States can reduce the possibility of a regional conflict through nuclear attacks. As for the internal instability, presence of non-state actors, and lack of transparency and security within Pakistan, the United States would have little impact by rattling a massive retaliatory saber based on ICBMs. If the primary concern is the central government’s lack of control, simply threatening that government would not address the main threatening factors – non-state actors and a lack of security around nuclear facilities. The risk of a non-state actor acquiring a nuclear weapon and then targeting the United States or an ally is considered one of the greatest threats to the United States. The fear, however, comes from the uncertainty of such an attack. Nuclear deterrence as a doctrine has little to no effect on non-state actors because deterrence is fundamentally a physical threat. If an actor has very few physical assets, infrastructure, or territoriality, then the threat of a nuclear strike will have little impact on a non-state actor’s decision-making cycle.

By prioritizing realistic operational capacity and deterrent signaling above the need to triple balance the nuclear triad, U.S. policy makers could restructure the nuclear force program in order to balance resources and assets. The nuclear force structure would still be capable of effectively upholding deterrence by continuing to provide
reliability and credibility while removing land-based vulnerabilities and focusing on the operational roles of the various nuclear delivery systems within the modern security environment.

**Forwarding the Nonproliferation Movement**

The Obama administration has indicated that, other than maintaining a sufficient deterrent strategy for security, nonproliferation remains a major policy goal. The 2010 Nuclear Posture Review stated that nonproliferation addresses the fundamental issue of nuclear weapons – their existence. Wishing to prevent both an accidental attack from a state and an intentional nuclear attack from a terrorist group or other non-state actor, the most basic answer to preventing both is to eliminate the availability of the weapons and, as logically follows, the opportunity to deploy them. Both the U.S. and Russia, who possess the two greatest nuclear arsenals, have identified reducing the availability and proliferation of nuclear weapons as a common priority.

The non-proliferation and nuclear-zero movements depend on international institutions and organizations to regulate and make transparent states’ nuclear behaviors. Liberal institutionalism holds that treaties such as the Nuclear Non-Proliferation Treaty, the Comprehensive Test Ban Treaty, the SORT and START initiatives, and the establishment of the International Atomic Energy Association can bind states to certain rules, while also depending on other states to regulate and reinforce one another’s behavior. The movement depends on transparency and on states following through with actions that would otherwise be seen as detrimental to their individual sovereignty for the pursuit of a larger, common goal of nuclear security.

The removal of the ICBM leg of the U.S. nuclear triad would cut over 450 nuclear weapons from the international environment, as well as provide a strong signal
to other states to make strategic cuts to their own nuclear force structures, instead of simply making minor cuts over decades. Cutting the ICBM program would also signal to other states that the United States views such capability as less strategically valuable than other platforms. Such a signal could dissuade other states from pursuing the symbolic strength of missile programs.

The United States has several options available to proceed with disarming its nuclear ICBM capability. Policymakers must remember that enhancing the international nonproliferation regime is a major factor in disarming ICBMs, so appropriate caution must be taken in involving the international community. While the U.S. could disarm the missiles itself as a unilateral show of good will and initiative, involving other nuclear weapons states in the process, either through the creation of a new institution or by updating current standards, could compound the benefits to both the U.S. and the nonproliferation movement as a whole. While few other states may be ready to make such a move, considering additional U.S. capabilities are another key factor in this policy decision, transparency and involvement are critical in modern global diplomacy and policy actions.

The critical variable in the current debate, however, is in balancing limited resources. The United States finds itself in a security environment where deterrence, while still necessary and effective in many cases, may not be effective against every threat, namely non-state actors. An updated security strategy, therefore, may be necessary to reduce the role of deterrence in resource allocation and to expand resources and policy options to best meet modern threats. In the future, flexibility with policy options will be more important than flexibility with conducting nuclear strikes. From this perspective, cutting an antiquated strike option in order to allow for advanced updates to the other legs is viable and necessary.
Risks and Alternatives

As in every policy and defense decision, the possible risks in removing America’s ICBM program are numerous. There is no question that in disarming all nuclear ICBMs, the U.S. would be voluntarily removing a powerful and unique instrument of war. Such an action would seem impossible under the theory of realism – no self-interested state would actively decrease its own power. This policy decision is only possible under theories that recognize the opportunity for an enlightened self-interest. The nuclear ICBM still represents an unparalleled military asset, and the United States would hardly be considered weaker by maintaining an ICBM force if the U.S. had unlimited resources. In reality, however, national strategists need to balance limited resources with political goals, meaning that both weapons capabilities and political objectives need to be prioritized. Removing the nuclear ICBM force is one option available in the mid to long-term in order to eliminate the nuclear threat globally. Alternatives in policy options, especially when considering a positive, proactive step such as this, do exist and may appeal to various policy sects more convincingly than would the removal of nuclear ICBMs.

Other options include reducing each leg in time, as the SORT and START treaties have done, or, if one leg must be eliminated, cutting the expensive bomber program instead. Land-based nuclear ICBMs, while perpetually on call, do provide the greatest decision-making time for the president if a nuclear strike is called for, either as a first or retaliatory strike. Additionally, they are accurate, inexpensive, and require the least amount of logistical and tactical planning for mobilization. Although SLBMs and bombers still provide reliability, ICBMs increase military strike options in a time of crisis.

Another risk is the ability of a foreign enemy successfully exposing an imbalance in the survivability or accuracy of the new dyad. The U.S. would lose a significant
capacity of its massive retaliation means. ICBMs were cheap and required the least expensive and complex upkeep, making them ideal to stockpile in the case of a massive strike. Submarines and bombers cannot match the immediacy, synchronization, and sheer scale of a coordinated missile attack. Even so, the U.S. would still possess nearly 400 deployed nuclear warheads on submarines alone. However, the other legs of the dyad, as well as through the continued use of regional or intermediate-range ballistic missiles, could mitigate the risk of attack from an enemy actor. In short, the bombers and submarines are most likely to survive, thus decreasing an enemy’s incentive to strike aggressively because of the uncertainty in effectively destroying U.S. nuclear capabilities. If an adversary strikes, but does not destroy the United States’ ability to retaliate, then that adversary will suffer a highly destructive punishment for their aggression. Additionally, the continental United States would be safer from attack because of the raised cost of targeting. If the United States removes physical military target points from within its borders, with our nuclear platforms remaining hidden in port, offshore, or airborne locations, an enemy actor would be forced to consider civilian or infrastructural targets as alternatives. While this would not deter a non-state actor or even some other states in the case of actual nuclear war, the cost of a massive strike on U.S. domestic soil is raised by virtue of an international norm against targeting civilian sectors. An enemy will be less likely to use a nuclear attack against a civilian target than against an isolated military post. Adhering to such principles, though, may actually serve to undermine deterrence and the executive’s response flexibility. If the United States were to avoid targeting civilian centers, enemy actors may twist U.S. principles by storing major assets in those civilian centers.

The United States also risks the appearance of weakness internationally with the reduction or elimination of one leg of the triad. Although the United States would see
such a move as having a marginal impact on operation and signaling capabilities, such a policy decision could signal to the rest of the world that the United States’ economic woes are so great that they have impacted the very core of U.S. strength – the nuclear arsenal. Although reducing nuclear stockpiles through treaties has no such impact, a sudden move, such as the unilateral removal of nuclear ICBMs, could be seen as an act of last resort or desperation. Controlling the perceptions of enemy and possible enemy actors is crucial in maintaining deterrence as a strategic doctrine.

In a democratic state such as the United States, where national perceptions of security rely so heavily on technological and military advantages, the public is unlikely to take the step of removing ICBMs as a capability unless forced into an economic position whereby other, more important means and goals were at stake. Discussion of the removal of the ICBM force is still marginal amongst Congress and the president. The two actors most likely to fight the removal of the ICBM force are the Air Force’s missile operators and specialists, and the president. The opposition of the missile operators and specialists would be expected, but the president’s opposition would be based on power. Arguably, the ICBM is the weapons system most directly connected to the president himself. The lines of logistical and command barriers are significantly fewer between the president and a missile silo than they are between the president and a bomber or submarine. While the ICBM force has little operational capacity in the modern age, any bureaucracy is unlikely to give up the most powerful tool directly under its command, unless alternative systems are developed to guarantee the power of the president over national defense. Removing nuclear ICBMs would decrease the absolute power of the United States, even if only marginally, but the cost of keeping the system running, from expenditures to opportunity costs and vulnerability, may reduce U.S. power even more, though in a less tangible way.
The nature of a democracy, which is subject to deliberative policymaking and restrictive term limits, may keep policymakers from suffering a tangible reduction instead of an intangible, but more serious, reduction.

Finally, the ICBM leg of the triad has been most valued for two capabilities: immediacy, which has been addressed thoroughly, and permanence. An ICBM, once built, can last for decades with minimal maintenance. Bombers and submarines require more frequent upkeep in order to remain at operational capacity. These systems are more complex and more dynamic, which give the bomber and the submarine an advantage in terms of technology and survivability, but serve as a disadvantage to permanence. The permanence of nuclear ICBMs, however, is in the ICBM, not the nuclear warhead. Transitioning to a force of conventional ICBMs would maintain the permanence of the technology while removing it from the nuclear discussion. The permanence of the technology would actually be extended because the nuclear payload has a shorter expiration date than any other piece of the structure. The nuclear update costs could then be focused on the SLBMs and bombers.

Many policy makers will prefer to simply reduce each leg of the triad equally instead of applying all budgetary cuts to a single leg. However, as discussed earlier, an updated nuclear security strategy must allow the executive more policy options actionable through dialogue and diplomacy. The United States could maintain the status quo while upholding their end of the new START treaty, or it could expand the president’s policy options by opening new international discussions. Current non-nuclear missile defense shields are capable of defending against enemy nuclear missile strikes, and conventional ICBMs can still send a powerful threat to other nations. Simply removing nuclear warheads from existing ICBMs would allow the president to maintain effective national security and deterrence policy while opening new diplomatic roads in discussing the future of the international nuclear regime.
CONCLUSION

Removing the use of nuclear ICBMs is a means-based answer to the problem of adjusting the U.S. nuclear force posture to reflect the security environment of the 21st century. With the greater interdependency among states, the greater availability and strength of international institutions and organizations, and the greater capabilities of nuclear SLBMs and bombers, the United States is ready to rebalance its Cold War nuclear infrastructure to better fight the increased risk of nuclear attack by rogue non-state actors while maintaining a deterrent and operational force against more traditional threats. The strategic ends, ways, and means of U.S. nuclear policy are ripe for a proactive step forward.

Endnotes

3 General James Cartwright, as quoted by Mary Kaszynski, “Nuclear Budget Cuts Gaining Momentum”.
7 Nuclear Posture Review, x.
8 Ibid, 22.
9 Ibid.
10 Ibid, 23.
11 Ibid.
12 Ibid.
14 Ibid.

16 Ibid.


21 Nuclear Posture Review, 3.


27 Nuclear Posture Review, 43.


29 Gaddis, 45.

30 Ibid, 145.

31 Ibid, 146.

32 Ibid, 164.

33 Ibid, 183.

34 Nuclear Posture Review, 3.

35 Cimbala, Deterrence and Nuclear Proliferation in the Twenty-First Century, 148.


37 Cimbala, Deterrence and Nuclear Proliferation in the Twenty-First Century, 3.


40 Nuclear Posture Review, 4.
41 Ibid, 5.
42 Ibid.
46 Ibid, 9.
48 Thomas C. Reed and Danny B. Stillman, The Nuclear Express (Minneapolis: Zenith Press, 2010), 261.
49 Delpech, 71-73.
51 Ibid, 131.
52 Ibid, 130.
55 Ibid.
57 Nuclear Posture Review, 21.
61 Ibid.
62 Kristensen.
63 Ibid.
SECTION I – INTRODUCTION

This thesis is a study of the People’s Republic of China’s lobbying activity during the 1980s, 1990s, and 2000s, with a focus on both the advocacy methods used by the Chinese to lobby the U.S. government, and the corporate interests that have continually weighed in on China’s behalf. Its primary purpose is to clarify the significant role that both U.S. multinational corporations and Chinese state-owned enterprises (SOEs) have played in China’s lobbying efforts in order to demonstrate the extent to which the Foreign Agents Registration Act (FARA) database—the main foreign lobbying transparency system—has failed to adequately capture the wealth and institutional resources that these interests have put into backing pro-Chinese trade legislation.¹

This work seeks to demonstrate this failure by collecting and parsing data taken from reports issued to Congress by the FARA Unit—the wing of the Department of Justice that serves as the main watchdog of foreign lobbying efforts—and contrasting it with corporate lobbying disclosures mandated by the Lobbying Disclosure Act of 1995, interviews with lobbyists that command high positions within some of Washington’s most powerful firms, previous scholarly works, congressional reports, and C.I.A. declassifications.² This aggregated data elucidates the drawbacks of the FARA system and brings to light a political landscape in which U.S. multinational corporations are pressured to lobby on China’s behalf for fear of economic
retribution—a phenomenon this thesis calls lobbying by proxy. Furthermore, it discusses a corporate insurgency in the United States that is amassing against Chinese economic interests, as well as the potential future developments of China’s lobbying efforts.

SECTION II – LITERATURE REVIEW

Section II A. – Developments of Chinese Lobbying Efforts

The first and most renowned scholar to analyze China’s attempts to alter U.S. policy is Robert G. Sutter of George Washington University. However, while Sutter mentions the interactions between China, lobbyists, and Congress, he neglects to address the role that U.S. multinational corporations and Chinese SOEs play in China’s lobbying process. Instead, he focuses on undocumented higher-level talks that allegedly took place between successive U.S. administrations and the upper echelons of Chinese officials. To Sutter’s credit, most of China’s efforts to lobby in the United States were targeted at the executive branch until around the mid-1990s. In his work that has been published after 2000, he fails to address the evolution of China’s lobbying methods and incorporate the activities of economic interests that weigh in on U.S. policy towards China.

In the rare instances where Sutter does allude to China’s efforts to lobby the U.S. Congress, he fails to explicitly explain what lobbying, in any specific sense, entails. This appears to be a common hole in scholarship on China’s lobbying activity for other historians as well, such as Qingshan, Dumbaugh, Jian, Xu, and Wang. Dumbaugh does explore how interest groups weigh in on legislation that pertains to Chinese interests, but she does not unequivocally state the connection between U.S. multinational corporations and interest groups. This work will discuss the specific methods that Chinese interests use to lobby members of
Congress to both enact pro-China legislation and counteract anti-China legislation. It does so by interviewing K Street lobbyists and soliciting them to describe what the phrase actually means in terms of Chinese lobbying tactics.

Two newspaper articles first made the phenomenon of China pressuring U.S. multinational corporations into lobbying on behalf of Chinese interests salient to me. In the article “The New China Hands,” Ken Silverstein, a contributing editor for *Harper’s*, describes how China pressured U.S. corporations into supporting its bid for permanent normal trade relations (PNTR). Writing in 1997, he explains that, “While Beijing has been low-profile in approaching the Hill directly, Chinese authorities have made it known to the U.S. C.E.O.s that they expect them to stand up for China in Washington.” Silverstein cites China expert Ross Munro, who explains that insubordinate multinational corporations risk being barred from investing, putting up factories, or selling their products in China if they rebuff its demands. The second source is a 1994 *Seattle Times* article in which reporter Stanley Holmes interviews an anonymous vice president at Boeing, who is worried that his company’s future in China might be “toast,” because of what a Chinese official sees as his company’s lackluster lobbying efforts.

This study recognizes that U.S. corporations and China’s SOEs are the largest sources of wealth and resources that go into pro-China legislation, and seeks to demonstrate that agents within the Chinese Embassy in Washington solicit major U.S. corporations to lobby on the nation’s behalf. It will also elaborate on how these corporations allow China to lobby by proxy. Subsequently, by identifying the Chinese lobbying tactics that go undocumented in FARA disclosures, this work will demonstrate the failings of the primary foreign sovereign lobbying transparency system.
Section II B. – Developments of the Foreign Agents Registration Act (FARA)

In 1938, Congress passed the Foreign Agents Registration Act (FARA). The statute provided that every person working as an “agent of a foreign principal,” unless excluded by one of the Act’s exemptions, had to file a registration statement with the Secretary of State. Jahad Atieh, former editor-in-chief of the Journal of International Law at the University of Pennsylvania, argues that, at the time of its creation, “the law was not designed to substantively censor or restrict foreign propaganda,” but rather to deter the dissemination of anti-American ideology through mandatory disclosure requirements and fear of imprisonment. This work adopts Charles Lawson’s notion that the pejorative term propaganda remains tied to the act, citing it as one of the possible reasons that China, as a foreign principal lobbying the United States Congress, cultivates corporate proxies in order to avoid the untoward sentiments associated with appearing in FARA’s records.

However, Atieh and Mark Baker, breaking from previous scholarship, suggest that FARA has evolved as Congress has continually reshaped it to serve as a bulwark against anti-U.S. interests at the time. For instance, Atieh highlights a “slate of blatant enforcement failures led to significant public outcry against the excesses of lobbying, prompting Congress to question FARA’s efficacy.” Led by the Senate Foreign Relations Committee, Congress closed several loopholes that allowed non-registry, proposed increased penalties for non-compliance, and increased the operating budget for enforcement. This amendment created a broad new class of people who were obligated to register under FARA while simultaneously creating a new set of loopholes, such as the exemptions for attorneys and U.S.-based subsidiaries of foreign corporations. Michael Spak argues that, as there has been no subsequent closing of these
loopholes, the 1963 changes were the last major revision to FARA itself.\footnote{15}

In its most recent iteration, FARA requires a \textit{foreign agent} representing a \textit{foreign principal} to register with the Department of Justice and file a disclosure that outlines the purpose of the representation as well as income and expenditures of the agent on the behalf of the foreign principal.\footnote{16} The statute defines \textit{foreign principals} in four ways: foreign political parties; persons or organizations based outside of the United States (except for citizens of the United States); partnerships, associations, corporations, organizations, or any other combinations of persons inside the United States that are organized under laws of a foreign country; and partnerships, corporations, organizations, or any other combinations of persons inside the United States that have their principal place of business in a foreign country.\footnote{17}

The act defines a \textit{foreign agent} as an individual or organization that acts under the order, request, or under the direct control of a foreign principal. Moreover, the definition also includes an individual or organization whose activities are directed by a foreign principal, acts in one or more of the following capacities: engaging in political activities for or in the interests of a foreign principal.\footnote{18} (The term “political activities” entails that the agent has a reasonable expectation that their behavior will influence any agency or official of the United States government or cleavage of the American public in terms of U.S. domestic or foreign policy or reference to the political or public interests of the foreign principal),\footnote{19} acting in a public relations capacity for a foreign principal;\footnote{20} soliciting or dispensing anything of value within the United States for a foreign principal,\footnote{21} and representing the interests of a foreign principal before any agency or official of the U.S. government.\footnote{22}

Yet the statute stipulates seven categories for foreign agents that are exempt from the registration requirement, the most significant of which is any agent engaging in lobbying activities while also registered under the Lobbying
Disclosure Act (LDA). 23 The LDA was passed by Congress in 1995 in response to the 1980 Toshiba Scandal, during which Toshiba avoided legislative sanctions for selling advanced military technology to the Soviets by hiring agencies that were exempt from required FARA disclosures to lobby against its restrictions. 24 When the entire scope of the events came to light over the course of the next fifteen years, Congress again had the impetus to remodel the lobbyist transparency system. According to Baker, the common sentiment at the time was that, “Since nations today compete primarily on an economic rather than a military level, national security is directly implicated by any activity that threatens the economic health of the nation.”25 Despite the calls to amend FARA, by introducing the LDA, Congress drastically overhauled the domestic lobbying laws rather than those pertaining to foreign sovereigns. The new system allows foreign business agents to register under the LDA, a system that forces lobbyists to disclose the amount of money that their clients spend and how it is distributed among individual pieces of legislation. 26 Atieh argues that the LDA ultimately limited FARA’s comprehensibility, but because it focuses on domestic firms lobbying by proxy, he also contends that LDA brought to light multiple instances of domestic multinational corporations acting as agents of foreign sovereigns. Given this conclusion, he contends that the LDA has significantly aided FARA, which had previously been blind to the influence of multinational corporations.

My work establishes a new criticism of FARA. The statute somewhat effectively records the relationship between the Chinese government, its embassy, and SOEs and the lobbying firms that they contract to advocate on their behalf. And while the report issued to Congress each year is quite vague—the verbiage of reports for specific foreign principals sometimes remains the same for five-year spans—it does aggregate and provide useful information. Conversely, Congress’ failure to refine its definition of a foreign agent to
include U.S. multinational corporations betrays a lack of awareness about the significant role that U.S. economic interests play in China’s efforts to lobby in the United States. An entire universe of lobbying activity related to the interests of foreign principals exists entirely out of FARA’s grasp. The saving grace of the post-1995 system is the disclosures mandated by LDA. Through these disclosures, I was able to discern which companies had been lobbying on issues related to China, how much money they were spending, and which firms or individuals they had contracted. Yet, as this study goes on to show, LDA disclosures fail to illustrate the connections between this type of corporate lobbying and Chinese interests, indicate whether corporations are lobbying for or against China-related legislation, or depict what this category of corporate lobbying actually entails.

SECTION III – SOURCES & METHODOLOGY

This study begins by comparing data from two sources: FARA’s Annual Reports to Congress, 27 and the LDA database that compiles inputs made to the Lobbying Disclosure Electronic Filing System. 28 The Department of Justice delivered the Annual Reports as part of a Freedom of Information Act request that asked for all reports between 1940 and 2011. All of the requested reports were delivered except for the years 1991, 1992, 1993, and 1994, which, for reasons the Department has kept unclear, do not seem to exist. Furthermore, 1942–1944, 1945–1949, and 1988–1991 were grouped together as one report, and after the passage of LDA in 1995, reports were issued to Congress twice a year.

In order to parse data quickly, the older FARA files were scanned by Apple Preview’s optical character recognition (OCR) technology so that the search function of the program could be used. I went through the China section of each report year-by-year, making note of the firms that represented the Embassy of the People’s Republic of China, how much the foreign sovereign was spending, and the
reported activities associated with the costs. A collection of state-owned enterprises, which prior research indicated had ties to the central government of China, also had disclosures in the annual FARA reports. And although these SOEs do not necessarily fall directly under the jurisdiction of the Politburo of the Chinese Communist Party (CCP), I also parsed and included their data in my results because they are subject to party control. Most other entries that fell under the People’s Republic of China section pertained to normal business transactions made by foreign corporations to entities within the United States (as stipulated by FARA), but because this is documentation of nothing more than normal business transactions—and has no relationship to lobbying activity—it was ignored.

The data from both the Embassy of the People’s Republic of China and the Chinese SOE disclosures were then plotted graphically in order to illustrate trends in China lobbying-related spending. These charts were then compared with reports aggregated from the LDA database. In order to use this database, I searched using the “filings” query and opted to search by “specific lobbying issue,” recalling data based on chosen terms. The first term I used was “China,” generating results in which the word “China” was used in the field where registered lobbyists were asked to report their client’s intentions for lobbying. Additionally, I used terms that would yield results associated with legislation related to China such as H.R. 3729, a pending currency bill, MFN (most-favored nation) and PNTR, and H.R. 4444, also known as the bill that granted China PNTR. Because these queries often generated thousands of results, I selected the ones to compile and code by two methods: first, which clients were spending the most money, and second, which had salient household multinational corporation brand names such as Boeing, Liberty Mutual, Caterpillar, Nestle, Citigroup, Chrysler, General Motors, and Mattel. In order to limit the results to only the most financially powerful, and therefore applicable, corporations, this study evaluates reports attached
to the ten corporations with the highest spending amounts or those that previous scholars or journalists have indicated as having specific ties to Chinese policy issues.

In order to explain the trends that my plotting of the FARA data revealed, I turned to previous scholarly works, Congressional reports and disclosures, C.I.A. declassifications, governmental watchdog reports, interest group releases, and news archives. Moreover, in hopes of garnering the quite elusive insider’s view of the lobbying activity, I conducted interviews with registered K Street lobbyists, who were selected based on the status their positions commanded within the top lobbying organizations, as well as their proximity to Chinese lobbying efforts.

SECTION IV – RESULTS & ANALYSIS

Section IV A. – General FARA Aggregation and Trends

To be clear, the reason this study focuses on the spending of the Embassy of the People’s Republic of China in Washington D.C. is because, as Interviewee 2 explained to me, the Embassy initiates its lobbying activity based on instructions it receives from the high command of the CCP; therefore, the central power structure of China lobbies solely through the Embassy. The graph tracing the spending trends of China-based interests begins in 1979 because this was the first time that the Embassy ever engaged a firm, Surrey Morse, to lobby on its behalf.29 It is likely that China resumed lobbying efforts in 1979—after nearly 25 years of inactivity—the year that China normalized relations with the United States. There is a gap between 1991-1994 because, as stated in the methodology, no FARA reports were issued to Congress for those years. The superimposition of the SOE spending indicates that these state-owned corporations constituted a majority of the foreign lobbying expenditures in the United States. Furthermore, it indicates that a very
significant event occurred in 2005, during which Embassy and SOE spending dwarfed all other years.\textsuperscript{30}

Section IV B. – The Six Spending Trends of the Embassy and SOEs of the PRC

An examination of Figure 1 also elucidates six major periods of interests: first, the spending surge from 1984-1987; second, the spending buildup from 1900-2000; third, the inverse correlation between Embassy and SOE spending in 1998-2003; fourth, the 2005 event; fifth, the 2008 spike; and sixth, the 2009-2010 drop-off. Yet when one attempts to use the FARA reports to shed light on these trends, the disclosures do very little to explain what actually happened beyond disclosing the payments made to law firms as well as a brief summary of what the services rendered entailed.

For example, according to the 1984 report, the Embassy contracted Akin, Gump, Strauss, Hauer & Feld for the first time in 1984.\textsuperscript{31} The 1985 report shows that, in 1985, the Embassy paid the firm $103,858.90 to provide “counsel and advice regarding trade and foreign policy issues, which included contacting members and staff of Congress,” on top of $99,840.69 already paid to the firm it had had on retainer.
since 1979, Surrey & Morse, to “[provide] legal services to the foreign principal and [contact] members of Congress regarding foreign investment regulations…” The 1986 report discloses that, in 1986, the Embassy paid $51,969.55 to Akin Gump to provide “…general counsel to the foreign principal and contacted Congressional U.S.-China tax treaty [sic],” paid Jones Day (formerly Surrey & Morse) $30,924.50 to “[advise] the foreign principal on matters of interests, and contacted U.S. Government officials…” and paid an additional firm, Milbank, Tweed, Hadley and McCloy $20,000 to advise it on “trade regulations between the U.S. and the People’s Republic of China, including proposals involving the application of countervailing duties and antidumping proceedings.” These vague service reports provided paragraphs and financial figures, but did little to elucidate the significant event that occurred between 1984 and 1987. They indicate general areas of policy, such as countervailing duties and antidumping policy, and describe very general lobbying methods, such as contacting members of Congress, but the overall comprehensiveness of the reports is rather lacking. This holds true for the FARA reports that were released during the six subsequent spending trends as well, and the language in those reports—and in all of the FARA reports, for that matter—is just as nondescript as those from 1984, 1985, and 1986.

As it turns out, a comprehensive historical analysis is necessary in order to expound the events that resulted in these six spending trends of the Embassy People’s Republic of China and Chinese SOEs that are reflected in Figure 1. Using previous scholarship, historical research, governmental disclosures, and interviews with K Street professionals, I was able to provide some insight as to why some of these fluctuations in Embassy and SOE lobbying expenditures occurred between 1979 and 2010.

1) The Spending Surge 1984-1987
This period of time marks China’s formal initiation into both political and economic affairs on the international level. In 1984, the world was reaching out to China in a way it had not since the days of the Silk Road. Reagan visited Beijing for the first time, a Soviet vice-premier made agreements with CCP members to modestly advance the tepid Sino-Soviet economic relations, and the United Kingdom announced the Sino-British Joint Declaration, in which it promised to return Hong Kong over to Chinese sovereignty in 1997. Beijing reciprocated these engagements in hopes of attracting foreign investment, designating fourteen new “open cities,” deemed Special Economic Zones (or SEZs), where foreign corporations would be allowed to invest in factories and other labor pools.

In 1985, Chinese President Li Xiannian paid a visit to the United States—the first time a modern Chinese head of state had done so—likely in anticipation of the power play that lay ahead. In 1986, China applied for full membership to the General Agreement on Tariffs and Trade (GATT), the international agreement that guaranteed fair trade policies among member states and was later developed into the World Trade Organization (WTO). As post-Mao China was just coming into its industrial and economic capacities in 1986, accession to GATT marked a significant geopolitical stepping stone for the burgeoning economic power.

The push for accession into GATT explains the impetus for the Embassy of the People’s Republic of China to spend $378,539 contracting the aforementioned lobbying firms to reach out to representatives within the United States. As Interviewee 3 described, at this period in time, China focused most of its lobbying efforts on the executive branch, because it considered Congress as nothing more than a collection of provincial figureheads with a mercurial base of power. Furthermore, as this was of specific interest to the economic health and development of the nation, agents
within the Chinese lobbying apparatus presumably compelled SOEs to spend $897,838.79 in the pursuit of interests similar to those of the Embassy.\(^4\) It is also notable, as Figure 1 indicates, that the Embassy and SOEs’ application of funds were out of step on this issue. Instead, SOE expenditures reached an almost identical peak to that of the Embassy almost a year later. It seems most tenable that this was due to heavier allocation of SOE expenditures toward China’s newly opened SEZ, leaving Embassy-based expenditures to compensate in order to maintain China’s efforts to attain GATT accession.

2) The Spending Buildup of the 1990s-2000

The most salient event during this period was the ten-year long political struggle leading up to the passage of legislation in 2000 that granted China Most Favored Nation (MFN) tariff status.\(^4\) In response to the human rights violations at the hands of the CCP during the Tiananmen Square Massacre, the Clinton Administration issued harsh sanctions against China and threatened to discontinue its MFN tariff status unless it agreed to refrain from its militaristic tendencies.\(^4\) The loss of MFN status would mean that goods and services exported to the United States from China would suffer a significant increase in tariffs, making it almost impossible for Chinese businesses to access the U.S. market and discouraging corporations based in the U.S. from investing in China. This led to a series of political firestorms that occurred every June during the 1990s as Congress battled over whether or not it should renew China’s MFN status. Then, a new actor joined the political fray – the business lobby.

In 2000, major U.S. multinational corporations and U.S. advocacy groups championed a successful effort to pass a bill that granted China permanent MFN status. As Jian Yang explains, multinational corporations, heralding China as the new frontier of industry in 1990s, “fought doggedly
for renewal...afraid that they might lose the huge China market...[believing] that their economic future depended on preserving trade with China.”

In 1993, 298 U.S. multinational corporations and 37 trade groups sent a letter to President Clinton urging him to support an unconditional extension of China’s MFN status. Some of the brand names at the bottom of the letter were AT&T, American Express, Boeing, General Electric, General Motors, I.B.M., and Xerox. Moreover, in 1996, multinationals with substantial business ties to China spent an estimated $20 million on a “state-of-the-art lobbying drive” to push forward legislation on China’s MFN status. At that time, U.S. corporate lobbying on China’s MFN status renewal greatly exceeded amounts spent by U.S. businesses on any other issue.

The Clinton administration took China’s continuing human right’s abuses very seriously and intended to use MFN-renewal as a bargaining chip to pressure China into altering some of its citizen-policing practices. However, after an unprecedented effort funded by the largest multinationals and spearheaded by the U.S. Chamber of Commerce—the largest advocacy group in the United States—Congress and the Clinton administration finally caved to political pressure and passed a bill ensuring China permanent MFN status in 2000.

However, it would appear improper for the Chinese government to be perceived as the champion of its own lobbying efforts, and instead utilized its state-owned enterprises and U.S. embassy to funnel money into Washington. Between 1979 and 2010, through its SEO and embassy channels, China spent just under $24 million (in 2010 dollars) to cast its influence into a myriad of different U.S.–China policy debates and discussions on the Hill.

The registrant rendered legal services to the foreign principal in analyzing and monitoring developments of interest to the foreign principal in both the legislative and executive branch of the U.S.
Government. The registrant contacted U.S. Government officials to obtain information concerning the views of the U.S. Government and the status of potential and proposed legislation in regard to trade and tariff issues...and U.S. sanctions pertaining to the People’s Republic of China.\(^{49}\)

This FARA disclosure, given the political context of the MFN effort, evinces that most of China’s spending during this time was targeted towards monitoring the progress of H.R. 4444, the bill that proposed permanent MFN status for China. Rather than explicitly referring to specific pieces of legislation, China generally describes its involvement in order not to draw attention to its actions. As Interview 3 explains, “[They were] aware that they couldn’t look integrated in the effort—it wouldn’t look proper for a foreign nation to do that—so instead they were spending money trying to put a good face on China.”\(^{50}\) As for what the SOEs were up to during this time, we must turn to the next trend.

3) The Inverse Correlation Between Embassy and SOE Spending 1998-2003

In order to understand this period, we must first look back to 1995, the year during which Chinese lobbying tactics underwent a complete game-change. In May of 1995, Lee Teng-hui, then president of Taiwan, was granted a visa to attend his reunion at Cornell University after a successful lobbying endeavor executed by the politically formidable Taiwan lobby.\(^{51}\) Mainland China and Taiwan had been adversaries ever since the Communist Party drove the Nationalists to Taiwan in 1949, and therefore, the People’s Republic of China saw this as a great offense on the part of the United States. As a Congressional report on the issue explains, “Beijing was quick to voice its outrage and to engage in a series of overt retaliatory measures.”\(^{52}\) China suspended arms control talks with Washington, postponed
cross-strait talks with Taiwan, canceled official visits to and from the United States, amassed troops along the coast facing Taiwan, and recalled its ambassador to the United States back to Beijing.\(^5^3\)

However, this was an instance during which the upper echelons of the Chinese Communist Party were reminded of the power of the United States Congress. It was the first time that they ever discerned that there was use in lobbying the branch of government that they had, for the most part, written off as talking heads. As the report goes on to explain:

But not all of China’s reactions were overt. Secretly, Beijing worked to prevent similar diplomatic surprises from occurring in the future. After President Lee’s visit, high-level PRC government officials devised plans to increase China’s influence over the U.S. political process and be implemented by PRC diplomatic posts in the U.S.\(^5^4\)

According to a C.I.A. report that was likely written in 1995 and declassified in June of 2006, after the Lee incident, “Chinese Leaders created the Central Leading Group for U.S. Congressional Affairs to oversee the task of increasing support for Chinese objectives.”\(^5^5\) While some of this new lobbying activity amounted to nothing more than traditional advocacy, some of it was more ethically questionable. In 1998, a Congressional investigation discovered that China was garnering political influence by illegally funneled money from its SOEs to wealthy Chinese businessmen and women who were, in turn, making contributions to Democratic National Committee campaign coffers.\(^5^6\) The disclosure of what essentially amounted to corruption “had the effect of dampening somewhat congressional enthusiasm for...organizations with an interest in U.S.-China relations.”\(^5^7\) In effect, China had taken the wind out of its own sails with the political waves already crashing against it.
The unearthing of this political scandal tenably explains the inverse correlation between Embassy and SOE spending between 1998 and 2003 and the $201,290.96 increase in SOE spending between 1996 and 1997. Subsequently, when a campaign financing scandal came to light, the high-level officials at the CPP were conflicted as to what to do. They were interested in continuing their cultivation of their Congressional contacts, while also aware of mounting Congressional opposition to their presence in Washington. With the prospect of PNTR looming in the distance, they knew the best course of action would be to avoid drawing attention to the efforts of the Embassy. Therefore, the FARA data suggests that the CPP resolved to siphon funds away from the Embassy and disperse them among the SOEs who would continue to contract lobbyists to further the PNTR campaign. There is not enough data to completely corroborate this supposition, but since the 1998 Congressional report indicated that the CCP had already been funneling money through SOEs in order to make contributions to DNC candidates—and given the historical context—this appears to be the most likely explanation.

4) The 2005 Event

In 2005, the Chinese National Offshore Oil Company (CNOOC), one of the nation’s largest SOEs, attempted to purchase the United States’ fifth largest energy company, the California-based Unocal, for roughly $17 billion. Between the Embassy and the SOEs—primarily CNOOC—China spent roughly $7.3 million trying to get Congress to approve the acquisition. Congress was alarmed by the prospect of a Chinese takeover of the prominent U.S. company and deemed preventing it a matter of “national security.” Chevron was also bidding on the company while pushing forth an extensive lobbying effort that eventually landed the approval of the CNOOC bid on the desk of president George W. Bush for review. In reaction to this, CNOOC’s stock
plummeted, and it ultimately withdrew its bid, forfeiting its $500 million initial payment. Unocal went on to merge with Chevron.

This quite decisively explains the vast amount of wealth spent by the Embassy and the SOEs during the buildup to CNOOC’s bid for Unocal in 2004, the comparatively astronomical peak in 2005, and the wind-down in 2006 (see Fig. 1). CNOOC was attempting to combat Chevron’s effort to block the deal by greasing the Congressional wheels, with the Embassy following suit. Yet, returning to the efficacy of the FARA disclosures, while the SOE reports do make mention of the Unocal deal, the Embassy service produced paragraphs that make no reference, leaving the $458,006.76 increase in spending between 2003 and 2005 unexplained.

5) The 2008 Spike

This trend is one of the more difficult to explain. The most pressing event in the geopolitical context of 2008 was incontrovertibly the worldwide financial crisis. During that period, the value of the United States’ economy had depreciated significantly, in what has almost become a five-year economic slump. Because 23.3 percent of China’s foreign holdings consist of roughly $1.26 trillion worth of U.S. Treasury securities—essentially U.S. debt—the nation had a pressing reason to push the U.S. government toward a position that would keep the value and credit rating of these U.S.-issued securities intact.62 If their values or ratings were to fall drastically, the effects could be cataclysmic for the People’s Republic of China.

This aptly explains the $1.2 million spent by the Embassy in 2008 on lobbying. It was advocating that Congress, and very likely the Obama Administration, take a position that ensured that China’s debt holdings in the United States would not depreciate.63 The $282,264.40 increase in SOE lobbying also corroborates this theory. It seems tenable
that the Central Leading Group for U.S. Congressional Affairs instructed the only SOE that lobbied that year, the China Ocean Shipping Company, to lobby in tandem with the Embassy. As the two spending trends diverge greatly, it seems that this was an issue that was considered more important to the interests of the political leadership of China than to the SOEs.

6) The 2009-2010 Decline

There is no empirical data that suggests why Embassy and SOE spending dropped $859,390.80 between 2008 and 2010. This is most likely a return to normal spending rates after two events that required considerable amounts of spending. Future research will hopefully be able to more decidedly determine the cause of this trend.

Section IV C. – Implications of Lobbying by Proxy Through LDA Disclosures

Table 1 (see online) represents a limited selection of U.S. multinational corporations’ LDA database’s disclosures in which the registrants listed an issue related to China as a reason for lobbying. These are by no means all of the LDA disclosures that referenced China. As alluded to in the methodology section, querying the LDA database with the term “China,” “Chinese,” “PRC,” and “People’s Republic of China” returned 4,853 reports, implying that there are, at least, several hundred company reports that indicate Chinese policy as an impetus for lobbying. Additionally, the values represented in the “Money Spent” column do not necessarily directly correlate to financial resources spent on lobbying specific to China-related policy. One of the many flaws of the LDA system is that it allows registrants to disclose a single monetary figure without specifying how much it allotted to particular pieces of legislation or policy issue.
The first six entries on Table 1 corroborate the aforementioned finding that U.S. multinational corporations exerted substantial financial resources in order in ensure the passage of H.R. 4444—the bill signed in 2000 that granted China PNTR. The sum of the $8.21 million spent by just these six companies already dwarfs the $814,539.32 spent by the Embassy and SOEs by almost ten-fold.64 This is only the spending done by six companies out of the 298 U.S. multinational corporations and thirty-seven trade groups that were part of China’s PNTR effort, for it is evident from Yang’s calculations that companies spent an estimated $20 million on lobbying for the passage of H.R. 4444.65 These figures unquestionably suggest that U.S. multinational corporations play an incredibly significant role in pro-China policy advocacy, despite the fact that their lobbying activities go completely unreported to the FARA lobbying transparency system.

The latter four entries on Table 1 demonstrate that the PNTR campaign waged by U.S. companies was not the only incident in which U.S. multinationals weighed in on China policy. As one can see by the timeframes indicated, U.S. corporations attempted to influence Chinese policy well after the passage of H.R. 4444. Two corporations in particular, Boeing and Caterpillar, are quite interesting in this regard. Between 2006 and 2011, Boeing tended to only list three lobbying areas of interest on its LDA disclosures, two of which were always “U.S. – China Relations” and “China Trade Issues.”66 Moreover, as shown in the “Money Spent” column, Boeing spent roughly $162 million a year on such lobbying activities between 2006 and 2011.67 Interviewee 3 says that Boeing is probably the company that most often lobbies Congress to take pro-China positions, saying that, behind closed doors, Boeing has earned the nickname “Beijing West.”68 This person says that, when Boeing is unable to deliver China’s policy goals, China has been known to say, “Fine, we’ll go buy from Airbus instead,” making reference to Boeing’s main European competitor.69
Caterpillar, on the other hand, is one of the corporations that spend heavily on anti-China policy. As demonstrated on Table 1, Caterpillar spent $13.73 million dollars on lobbying between 2006 and 2011, some of which went towards advocacy on S. 14, S. 295, S. 337, S. 984, and H.R.2208—all of which are Chinese currency bills, calling for China to allow its currency to appreciate naturally in order to put a stop to its dumping practices. I was never able to make direct contact with a representative from Caterpillar, but indirectly obtained information through a contact in Washington D.C. In an e-mail, my contact, a lobbyist for Caterpillar, explained: “Getting China to change its monetary policy is a huge issue and the U.S.—from government to businesses—is lobbying China to fix what they see as a major inequality that affects trade.”

This exchange indicates that a cleavage of U.S. multinational corporations have turned against China in some regard. Caterpillar was one of the 298 companies lobbying for the passage of H.R. 4444. This anti-China corporate insurgency is something that this thesis will discuss in greater detail in the next section.

Section IV D. – Corroborating and Elaborating on Findings Through Interviews

I conducted three formal phone interviews with K Street professionals intimately familiar with China’s lobbying apparatus. Two respondents, Interviewee 1 and 3, were in highly regarded positions within Washington’s most coveted lobbying organizations and the third, Interviewee 2, was in a top position within a firm that focuses specifically on U.S.–China policy. For their own professional protection, all interview subjects requested to have their name and organizations kept anonymous.

All three of the respondents agreed that China’s lobbying methods have evolved drastically over the past 20 years. Interviewee 1 explained:
China lobbying has become much more sophisticated; they have a better understanding of how to use our political system. They used to get frustrated when a presidential administration wasn’t able to get things done with a snap of their fingers, but now they now understand the role of Congress and the President. And now they’re better staffed with people more savvy with U.S. affairs—they have law firms and pay them large retainers. Sometimes they can still be a little heavy-handed or tone deaf, but they play their cards a lot better than they used to in the past.72

Interviewee 3 adds that, “China used to squawk loudly when they didn’t get their way, but now they realize it’s politically intelligent to keep quiet—they don’t fly off of the handle so much anymore. They’re getting more nuanced and savvy about Congress by contracting external help like Patton Boggs [a Washington D.C. law and lobbying firm].”73

As for the notion that China had been using U.S. multinational corporations to lobby by proxy, the interviewees had differing insights. Interviewee 2 rebuffed the idea, claiming that the Chinese often reached out to companies that this person’s organization represented, but asserting that none of the contacted companies have ever complied with a Chinese diplomat’s requests to lobby on China’s behalf.74 Interviewee 1 said they had seen evidence of lobbying by proxy in the field. This person explained that, “China is still able to call in a core group of companies and tell them to weigh in in some way.”75 Interviewee 3 agreed, stating, “The business community has always been the tip of the spear in terms of keeping the U.S.–China relationship on a good track.”76 This person went on to say, “There is a lot of interaction between the government officials in China and U.S. companies.”77 But both Interviewee 1 and Interviewee 3 said that the motivation for U.S. multinational corporations...
to lobby on China’s behalf usually did not result from direct communication or orders from Chinese governmental officials. They explained that it was more of an unspoken understanding.

Interviewee 1 said, “The pressure is implicit, but companies get the joke—the Chinese keep score. And if in the future, if you want them to do something for you, they’re going to look back and see what you’ve done for them.”

Similarly, Interviewee 3 added that, “There is a quid pro quo; the Chinese are implying to corporations within their bounds that, ‘if you’re going to be successful in our market, you’re going to be playing a part in U.S.-China relations.’”

Interviewee 3 said that U.S. multinational corporations often advocate for China’s position in Congress because they stand the most to lose if China decides to resort to economic retaliation. He/she related:

In China, there is a lot of governmental regulation; they control factory approval, purchasing approval, investment approval—city-by-city—so corporations have an interest in showing that they’re allied of the Government. On commercial issues like PNTR, CEOs were making it very known that they were being active on the Hill. And the Embassy was keeping track of who was testifying before Congress, who was making trips to the Capital Building, who was signing the letters. That’s just the way it is for companies that invest in China—their CEOs are constantly engaging with the Embassy.

SECTION V – DISCUSSION

Implications for FARA
This study levels another blow against the lobbying transparency framework by demonstrating the inadequacy of the FARA reports. As this work has shown, data mined from FARA disclosures can quite effectively complement other methods of research in elucidating Chinese lobbying practices and deriving spending trends of Chinese foreign agents, but as a stand-alone system, the foreign lobbyist registration statute fails in multiple respects. Additionally, as evidenced by the LDA disclosures and scholarly research, FARA misses an entire universe of corporate lobbying that is conducted on China’s behalf—a universe that often spends more than the very small universe that FARA documents. Corporate lobbying by proxy is clearly the method that dominates the Washington lobbying landscape, as corporations have often shelled out millions of dollars a year to lobby for China in order to endear themselves to Chinese representatives. And while the thought of corporations lobbying on behalf of their own economic interests is neither new nor novel, the phenomenon of quintessentially U.S. multinational companies working with a foreign government to subvert the economic interests of the United States absolutely is.

As China transforms into the world’s next superpower, it appears that U.S. corporations may chase it with profligate sycophancy. Either compelled by profit margins, or by an altruistic sense of cosmopolitanism, it seems that the great torrents of U.S. ingenuity will come to disentangle their interests from that of the United States. Therefore, in order for the United States to create a bulwark against a manifesting Fifth Column, it should revise FARA in a way that forces these corporate proxies to disclose their communications with the Chinese government. The efficacy of this change is somewhat dubious, but as Chinese interests have already demonstrated, the notion of public stigma might be enough to forestall the growing ties between a rising China and U.S. multinational corporations. This is unless
what appears to be a mounting corporate rejection of China’s goals—as evidenced by Caterpillar’s lobbying efforts—begins to take sway. It is possible that, during the 1980s and 1990s, U.S. companies viewed China as the new business frontier where the next trillion dollars would be made. However, through its abusive business practices that castigate U.S. companies, China has demonstrated little to no regard for the health of U.S. corporations. Therefore, it seems likely that a backlash, orchestrated by Congress and backed by U.S. corporations, might come to bring China’s lobbying by proxy efforts within Washington to light and keep them at bay.

Plausibility of Lobbying by Proxy

The results of this study paint a partial picture of how China’s lobbying by proxy occurs. The findings seem to suggest that there is often some form of communication that goes on between Chinese officials and leaders of U.S. corporations. Even the aforementioned C.I.A. disclosure on Chinese espionage reported that “…the Chinese Government continues to seek influence in Congress through various means…including engaging U.S. business interests to weigh in on issues of mutual concern.” Interviewees 1 and 3 corroborated this finding.

Yet as Interviewee 3 demonstrates, this understanding between China and the U.S. multinational corporations is a very implicit one. Moreover, the underlying factor of this phenomenon of lobbying by proxy is the fact that U.S. companies fear Chinese economic excommunication. Interviewee 3 explained that the U.S. Trade Department has been looking for instances in which China violated international trade laws in the hope of taking them to a WTO court, but corporations—against their own interest—refuse to comply for fear of retaliation by the Chinese government. “If they go along with the case, China’s going to figure out who’s going up against them, and they’re
bound to retaliate,” says Interviewee 3.82 Ultimately, it appears that China is implicitly pressuring corporations into lobbying on its behalf through fear of sanctions, not mutual advancement of policy goals.

The Future of Chinese Lobbying Efforts

Based on the accounts of all three of the interviewees, it appears that China quite recently has altered the ways in which it goes about lobbying the United States Congress. As the three explain, China has set up its own mini-lobbying firm within the Embassy of the People’s Republic of China, contracting firms such as Patton Boggs to meet with members of Congress on its behalf. As China expert John Pomfret says in an article in the Washington Post, “For years, as China steadily rose to global economic and political heights, it all but ignored the U.S. Congress, with outreach to American lawmakers left to friends in the business community. But now China has launched a multimillion-dollar lobbying effort so effective that it is challenging the heralded efforts of nemesis Taiwan.”83 The journalist goes on to quote Representative J. Randy Forbes (R–VA), the head of the Congressional China Caucus, who explains: “The Chinese have for years been wielding a lot of influence. They’ve liked to do it under the radar. But as there’s been more light shed on it, they’ve had to change their ways.”84

This beckons the question: have research methods from this report managed to capture what this change of ways has entailed, or has it stayed completely out of the reach of data collection techniques of this thesis? Can this new form of Chinese advocacy explain why Embassy and SOE spending drop off so drastically after 2008? Findings seem to indicate that 2009-2010 marked the beginning of a new era of Chinese lobbying efforts, an era that future research will hopefully seek to elucidate.
SECTION VI – CONCLUSION

This study is the first of its kind to grant a glimpse into the backdoor dealings of Chinese lobbying efforts. It is the first non-journalistic piece to describe the interconnected nature of lobbying efforts made by multinational corporations and the Embassy of the People’s Republic of China. Furthermore, it applies the lobbying by proxy model to Chinese advocacy efforts, suggesting that Chinese official or other agents functioning on the government’s behalf actively or implicitly compel multinational corporations to lobby the United States Congress with the intention of delivering China’s own policy goals. It describes the capacities of the China Lobby of the twenty-first century and demonstrates another shortcoming of the FARA framework.

Furthermore, this research sets the stage for a comparison between Chinese lobbying tactics and those of other foreign sovereigns. Potentially interesting future research could be a comparison between China’s tactics and India’s. Is there a possibility that India, as a burgeoning superpower, is also practicing a similar lobbying by proxy method? Is it the case that U.S. multinational corporations are also lobbying on India’s behalf for fear of economic excommunication? Or is it possible that India’s more hospitable foreign investment policies make it an entirely different lobbying animal? Lastly, future research should make an effort to determine the fate of what appears to be a mounting corporate insurgency against China’s economic interest in the United States. Will U.S. corporations reject China’s implicit calls to lobby on its behalf, or will fear of economic sanctions intimidate U.S. multinationals into toeing the party line?

Endnotes
1 The Foreign Agents Registration Act of 1938 (22 U.S.C. §611). Passed in response to propagandist efforts made by the German Nazi party in the U.S.—requires agents representing interests of foreign powers to be properly identified to the American public. A database managed by the Justice Department tracks the value of payments made from foreign sovereigns to U.S. lobbying firms, the number of times lobbyists meet with Congressional representatives on the behalf of foreign nations, and the specific lobbying firms retained by a foreign power.


6 Ibid.


9 See page 11 for a list of the exemptions.

10 H.R. REP., supra.


12 Ibid., 1058.

13 Ibid.


16 The Foreign Agents Registration Act (FARA) [22 U.S.C. §611 et. seq.]


18 Ibid.

19 The Foreign Agents Registration Act of 1938 [22 U.S.C. §611 (o)]

20 “Lobbying for Foreign Interest,” Ibid.

21 Ibid.

22 Ibid.

23 Ibid.


25 Baker, 32.

26 Atieh, 1060.

27 22 U.S.C. § 621 stipulates, “The Attorney General shall every six months report to the Congress concerning administration of this subchapter, including registrations filed pursuant to the subchapter, and the nature, sources and content of political propaganda disseminated an distributed.”
30 2005 was the year that the China National Offshore Oil Corporation (CNOOC), an SOE, attempted to buy the California-based energy giant Unocal. This will be discussed in greater detail later in the Discussion section.
33 U.S. Department of Justice, 1986.
34 Countervailing duties, known as anti-subsidy duties, are tariffs imposed on trade imports subject to rules under the WTO that are intended to negate the effects of another nations governmental subsidies. Antidumping policy targets nations whose companies utilize unnaturally low pricing structures in order to force out competition in a foreign domestic market in order to establish monopolies in one of this foreign domestic market’s industries.
37 Sutter, supra.
39 Interview with lobbyist with knowledge of Chinese advocacy tactics, March 4, 2012.
40 U.S. Department of Justice, *supra*. The SOEs that disclosed spending money on lobbying activity were the China National Textiles Import and Export Corporation, the China Ocean Shipping Company (COSCO), and the U.S. China-Shantou Technology Trade Investment Resources, Ltd, which was charged with the administration of some of the newly opened SEZs.
41 A nation that receives Most Favored Nation Status, known as MFN status, receives the same low tariff rates or high import quotas granted to a nation that currently enjoys the lowest rates and highest quotas. It’s a proclamation made by a trading nation to treat the nation it is granting this status to no less advantageously than the majority of other nations it trades with.
42 A three-day span in 1989 during which hundreds of civilians were killed and thousands wounded as they were driven from their protesting grounds in Beijing by Chinese military forces. It was a movement primarily made up of students and intellectuals, protestors, who were criticizing the cultural and political direction that China was moving in.
44 Ibid., 248.
45 Ibid.
46 Ibid.
47 Ibid.
48 Washington D.C. Contact, e-mail message to author, December 1, 2011.
49 Ibid.
50 Ibid.
53 Ibid.
54 Ibid.
57 Ibid., 86.
59 U.S. Department of Justice, 2005.
60 “China’s Unocal Bid Ran out of Gas,” supra.
61 Ibid.
63 U.S. Department of Justice, 2008.
64 U.S. Department of Justice, 2000.
65 Jian Yang, Ibid.
67 Ibid.
68 Interview with lobbyist with knowledge of Chinese advocacy tactics, March 3, 2012.
69 Ibid.
70 Caterpillar lobbyist, e-mail message to Interviewee #4, February 28, 2012.
71 Ibid.
72 Interview with lobbyist with knowledge of Chinese advocacy tactics, January 13, 2012.
73 Interview with lobbyist with knowledge of Chinese advocacy tactics, March 3, 2012.
74 Interview with lobbyist with knowledge of Chinese advocacy tactics, January 27, 2012.
75 Interview with lobbyist with knowledge of Chinese advocacy tactics, January 13, 2012.
76 Interview with lobbyist with knowledge of Chinese advocacy tactics, March 3, 2012.
77 Ibid.
78 Interview with lobbyist with knowledge of Chinese advocacy tactics, January 13, 2012.
79 Interview with lobbyist with knowledge of Chinese advocacy tactics, March 3, 2012.
80 Ibid.
81 U.S. Central Intelligence Agency, Ibid.
82 Interview with lobbyist with knowledge of Chinese advocacy tactics, March 3, 2012.
83 John Pomfret, Ibid.
84 Ibid.
I. INTRODUCTION

This paper attempts to study the impact that foreign education has on corruption. Over the past decades there has been a wave of globalization that has resulted both in greater economic and trade interdependence and in the confluence of cultures and ideologies. One of the evidences of this globalization is the increase in the number of students that are educated in a foreign country. Despite the increasing resources dedicated to financing foreign education, little research has been done on the impact that foreign-educated individuals have on corruption in their home countries. Do these students play a role in reducing corruption at home? This paper attempts to fill this gap in the literature by using a unique dataset that includes information for recipient and sending countries for a ten-year time frame.

The increasing number of scholarships and fellowships that are dedicated to funding foreign education is a testament to the increasing importance of this type of education worldwide in the past few decades. Numerous institutions in the United States were founded under the belief that foreign education fosters multicultural understanding and democratic values. The Fulbright program was created in 1946 in order to “increase mutual understanding and promote leadership development through learning and international cooperation.” Since then, thousands of foreign and U.S citizens have been able to study and do research abroad. However, the impact of this program on the students’ home corruption levels has never been studied.

Leticia Ferreras studied international political economy at Georgetown University, where she graduated in 2012.
The American efforts to promote foreign education are supported by other Western countries like Germany. The German Academic Exchange Service (DAAD) is the largest grantor of academic support in the world. They offer financial assistance to more than 55,000 students that belong to academic elites to experience education abroad and be exposed to other cultures and ways of thinking.\(^2\)

Non-Western countries have also shown an interest in promoting foreign education among their citizens. For instance, the governments of Saudi Arabia, Bahrain and Singapore have created scholarship programs to grant their top students access to the most prestigious universities around the world.\(^3\)

However, despite the increase in scholarship programs for education abroad, there is little to no statistical evidence that they have the desired impact within the host or origin countries. This paper attempts to provide empirical evidence that reinforces the importance of foreign education. The purpose of the present study is to identify the impact that foreign students have on the levels of corruption in their home countries. That is, I seek to investigate whether being exposed to a more transparent business environment and better business ethics allow students to reduce corruption at home. The model used in this analysis uses corruption in the sending countries as the dependent variable. To capture the impact of foreign education on corruption, I create an interaction term with the percentage of students abroad normalized by the total number of individuals receiving tertiary education in the sending countries and an index of host country corruption. This index is calculated as a weighted average of corruption in the recipient countries, where the weights are the number of students that go to from country A to country B at time t.

I find that the coefficient for the interaction term is positive and significant in all the specifications of the main model. These findings suggest that sending students to receive tertiary education in countries with lower corruption
than their own might lead to lower corruption levels in their own country. For instance, students from Somalia who receive a foreign education in the United States (where corruption levels are much lower) seem to help reduce the corruption levels in Somalia. Investigating the modes through which this influence may take place is beyond the scope of this paper, but I will provide a possible hypothesis that is compatible with the available findings.

The remainder of the paper is organized as follows. Section II provides an overview of the literature with a focus on the importance of education to combat corruption. Section III provides a description of the data and the theory. Section IV presents the empirical analysis and model specification. Section V analyzes the results. Section VI presents the sensitivity analysis. Section VII concludes.

II. LITERATURE REVIEW

The literature on corruption is very extensive and there are existing debates on its definition, its determinants, and ways to prevent it. Many researchers have focus their analysis mainly on political corruption. However, in this paper, I adopt a more holistic interpretation by using the definition provided by the PRS group when calculating the International Country Risk Guide index. Corruption is a threat to foreign investment that distorts the economic and financial environment, negatively impacts the efficiency of the government and businesses through nepotism and ultimately introduces an inherent instability into the political process. Some forms of corruption include: bribe payments in financial transactions, secret party funding in the political sphere, [please add at least one more form of corruption].

Danila Serra develops a study on corruption determinants that uses the Leamer’s Extreme Bounds Analysis. Her paper analyzes economic, socio-cultural and institutional variables that can affect corruption. Serra concludes that variables such as ethno linguistic
fragmentation and colonial heritage are significant corruption determinants in addition to the already established ones that refer to political regime, economic freedom or regulatory quality. This paper will follow Serra’s multidisciplinary approach to corruption by factoring in the determinants she identifies.

On the other hand, the negative correlation between education levels and corruption is very well documented. Munzert develops a multidisciplinary approach to corruption. In his paper, he demonstrates that countries with a highly educated populace (defined as university level and above) have lower levels of corruption. That is, more education leads to less corruption. In addition, he adds that a decrease in the education gap between the higher and the lower classes in society also alleviates corruption.

Ellie Keen also addresses the relationship between education and corruption. Her report establishes a negative correlation between these two variables and it convincingly advocates for stronger educational programs. In addition to this, she defends the idea of including more anti-corruption-specific lectures within the study of philosophy, civics, and human rights.

In-classroom education is not the only important determinant. Ponzetto and Schliefer focus their study on the necessary conditions for the development of democracy. When referring to education, they conclude that the content of education is not as important as the socializing experience of studying with other students and learning to interact.

The conclusions in Glaezer, Ponzetto and Schliefer on education are particularly important to the theory I present in this paper: that students receiving a foreign education help reduce corruption back at home. This hypothesis relies on the idea that the general educational experience, the interaction with other individuals with different mentalities, and the exposure to other business environments are more valuable than anti-corruption-specific education.
As demonstrated by the literature, there is common agreement on the ability of education to reduce corruption. When focusing specifically on foreign education, however, the existing literature is far more limited. The majority of such studies focus on the impact of international student mobility on the host countries, as opposed to on the sending countries. Altbach developed a comprehensive study that emphasizes the value of foreign education. He alludes to the scholarship program created by the Chinese government during the Cold War. This program allowed students to receive an education in the former Soviet Union, where they would learn about the communist system and its structure to later help China with its implementation.  

More recent studies of foreign education include Antonio Spilimbergo’s analysis of impact of foreign education on democracy. He concludes that an increase in the number of students receiving tertiary education abroad (in more democratic countries) has a positive impact on the democracy levels of their home countries. The present study develops a similar model to that of Spilimbergo.

This paper attempts to contribute to the growing body of literature on foreign education by analyzing its impact on corruption in the sending countries. This will provide support for the establishment of more scholarships and fellowships to finance study abroad as a way to foster intercultural communication and prevent the spread of corruption.

III. DESCRIPTION OF THE DATA

III.1 Data sources

In order to carry out my study, I created a dataset using three independent datasets that measure corruption, the number of students receiving a foreign education, and a number of other control variables such as GDP, democracy, and education, which are relevant to the model. Below I
provide a more detailed description of each of the datasets used.

Corruption

For the purpose of this study I use the International Country Risk Guide (ICRG)’s measure of corruption developed by a private institution called the PRS Group. It is one of the most comprehensive corruption datasets and has often been used in the literature.\textsuperscript{11}

The dataset includes corruption for all countries from 1998 to 2010. The ICRG measure of corruption ranks countries on a scale of one to six, where six is least corrupt. This index primarily looks at corruption within a political system by focusing on nepotism, secret party funding, and other such factors, but it also tackles forms of financial corruption that can potentially force the withdrawal of foreign investment from a country. This includes special payments or bribery related to trade licenses, exchange controls, police protection, tax assessments, and loans.\textsuperscript{12}

Students studying abroad

The data on the number of students studying abroad is obtained from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Statistical Yearbook. The database is selected for the period between 1998-2010 and it provides information on the international mobility of students in the third tier of education (university education and higher). The data are produced by the host countries and for each one there is information on the number of students they received from a total of approximately 140 sending countries.

For the purpose of this study, I designated 31 countries as the host countries (recipient countries). Table 1 presents the selected countries.
Table 1. Host Countries

<table>
<thead>
<tr>
<th>European Union Countries</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Belgium</td>
<td>Germany</td>
</tr>
<tr>
<td>Portugal</td>
<td>The Netherlands</td>
</tr>
<tr>
<td>Spain</td>
<td>Denmark</td>
</tr>
<tr>
<td>France</td>
<td>Slovenia</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Italy</td>
</tr>
<tr>
<td>Ireland</td>
<td>Malta</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Greece</td>
</tr>
<tr>
<td>Romania</td>
<td>Cyprus</td>
</tr>
</tbody>
</table>

* The Czech Republic is not included as part of the recipient countries due to complications with the data.

The United States, Canada, and the European Union have traditionally been top recipients of foreign students due to the quality of their education, their history, and their culture. In addition, the selected countries have relatively low levels of corruption compared to the foreign students’ countries of origin. Using this selection allows me to better interpret the results of the analysis by looking at countries where the corruption differential between recipient and origin countries is above zero in the majority of the cases. This selection keeps the results unbiased because these countries concentrate the vast majority of foreign students from everywhere in the world. All countries for which information is provided in the UNESCO dataset are included as sending countries.\(^\text{13}\)
Quality of Governance

The additional control variables included in these regressions are obtained from the Quality of Governance dataset. This comprehensive time-series dataset is collected by the Quality of Governance Institute at the University of Gothenburg in Sweden and it comprises information from other individual datasets. The dataset includes information for 192 countries and it has approximately 202 variables with data ranging from 1946 to 2010. For the purpose of this study the years are limited from 1998-2010.

III. 2 Description of variables

Dependent Variable

(1) Corruption levels (scaled). “Levels of corruption in the sending countries as measured by the International Country Risk Guide (ICRG).” The initial measure ranks countries from zero to six. However, for the purpose of this study this variable is on a zero to one scale, where zero is most corrupt and one is least corrupt.

Main Independent Variables

In order to arrive to robust conclusions, I include three main independent variables.

(1) Share of students going abroad over the total number of students receiving tertiary education. “Share of the number of students that go study abroad from country A at time t over the number of students in country A at time t that receive tertiary education (for every sending country)”: 

\[
\text{Share of students going abroad} = \frac{\text{Number of students receiving a foreign education}_{\text{at time } t}}{\text{Total number of students receiving tertiary education}_{\text{at time } t}} \times 100
\]

The information of the number of students receiving a foreign education from every sending country is obtained from the UNESCO Statistical Yearbook. The tertiary
education data is obtained from the quality of governance data. This variable alone will account for the impact that an increasing share of students going abroad has when they go to countries where the difference in corruption is zero—that is, to countries where the levels of corruption are equal to those in the sending country.

(2) *Corruption index in recipient countries.* “Index of corruption of the host countries where students receive foreign education”

For this model, thirty-one countries have been selected as recipient (host) countries, all of which have low but varying degrees of corruption. To account for this heterogeneity in the corruption levels of the host countries, I have created an index for the average level of corruption in the host countries. This index is calculated as the sum of the weighted average of the difference in corruption between host country A and sending country B at time t (for every sending country and time from 1998-2010). The weighted averages are determined by the number of students that go from B to A at time t.

\[
\text{Corruption Index} = \sum_{c} \frac{\text{Students}_{AB}}{\text{Students}_{A}} \times (\text{Corruption}_{B} - \text{Corruption}_{A})
\]

Where \( \text{Students}_{AB} \) is the number of students from country A to B at time t over the total number of students that go abroad from country A at time t. This share is multiplied by the difference in corruption between the recipient country (B) at time t and the sending country (A). This coefficient measures the corruption in isolated countries that do not send any students to study abroad.

(3) *Foreign students and recipient country corruption.*

“It is an interaction variable that measures the impact that students have on corruption when they receive an education in a less corrupt foreign country”
For this paper, this interaction term is the most important variable. It represents the impact that an increasing number of students receiving education in less corrupt countries has on the levels of corruption in their home countries. The direction and the significance of this impact will lead to the main conclusion of this paper.

Table 2 provides summary statistics for the main independent variables previously described.

### Table 2. Summary Statistics Of Main Independent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index of corruption in recipient countries</td>
<td>1767</td>
<td>.2473653</td>
<td>.204311</td>
<td>-.360574</td>
<td>.976666</td>
</tr>
<tr>
<td>Share of students studying abroad*Index of corruption in recipient countries</td>
<td>1101</td>
<td>.7274081</td>
<td>4.01211</td>
<td>2</td>
<td>52.0878</td>
</tr>
</tbody>
</table>

Other Independent Variables

The remaining independent variables are control variables that help establish causation between the independent and the dependent variables. These are variables that the corruption literature has established as significant corruption determinants and therefore need to be included in the model specification in order to avoid omitted variable bias.

There is abundant literature on the determinants of corruption. For the purpose of this study, I will use Serra as a model of the control variables to include in my analysis. She develops a study on the determinants of corruption and classifies them into institutional, economic and socio-cultural
variables.\textsuperscript{15} Table 3 show the control variables I use, classified according to these three categories.

Table 3. Control Variables

<table>
<thead>
<tr>
<th>Economic variables</th>
<th>Institutional Variables</th>
<th>Socio-cultural variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP per capita</td>
<td>Levels of democracy</td>
<td>Colonial heritage</td>
</tr>
<tr>
<td>Levels of Economic Freedom</td>
<td>Percentage of the population receiving tertiary education</td>
<td></td>
</tr>
<tr>
<td>Regulatory Quality</td>
<td>Freedom of press</td>
<td>Political instability</td>
</tr>
</tbody>
</table>

Because these variables are obtained from the Quality of Governance dataset that combines other individual datasets, Table 4 offers a more detailed description of the control variables, including their sources and how they are measured. Finally, Table 5 provides the summary statistics for the eight chosen control variables.

Table 4. Description of control variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Code name</th>
<th>Database source</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP per capita</td>
<td>Wdi_gdpc</td>
<td>World Development Indicators (World Bank)</td>
<td>GDP per capita converted to constant 2005 international dollars using purchasing power parity rates.</td>
</tr>
<tr>
<td>Economic Freedom</td>
<td>Hf_efiscor</td>
<td>Heritage Foundation</td>
<td>Weighted average from 0-100 (highest) of 10 different freedoms including (business, IPR, labor). All freedoms have the same weight.</td>
</tr>
<tr>
<td>Regulatory Quality</td>
<td>Wbgi_rqn</td>
<td>World Bank Governance Indicators (World Bank)</td>
<td>Incidence of market-unfriendly policies and perceptions of the burdens imposes by excessive regulations in trade, business</td>
</tr>
<tr>
<td>Category</td>
<td>Code</td>
<td>Source</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------</td>
<td>---------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Democracy Levels</td>
<td>Fh_polity2</td>
<td>Freedom House</td>
<td>Levels of democracy measured on a scale 0-10 (most democratic).</td>
</tr>
<tr>
<td>Share of population with tertiary education</td>
<td>Pop_terced</td>
<td>World Development Indicators (World Bank) and UNESCO Statistical Yearbook</td>
<td>Percentage of students receiving tertiary education over the total population.</td>
</tr>
<tr>
<td>Freedom of Press</td>
<td>Fh_press</td>
<td>Freedom House</td>
<td>Index created adding 4 component ratings: laws and regulations, political pressures and controls, economic influences, and repressive actions. Index from 0-100 (least free).</td>
</tr>
<tr>
<td>Political Stability</td>
<td>Wbgi_psn</td>
<td>World Bank Governance Indicators (World Bank)</td>
<td>Combines several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown.</td>
</tr>
<tr>
<td>Colonial Heritage</td>
<td>Ht_colonia1</td>
<td>Henisz – The Political Constraints Index</td>
<td>Classification of former colonial ruler of the country. It is focused on Western “overseas” colonialism. The ranking goes from 0-10. 0 is never colonized. Colonial powers include Italy, Spain, Portugal, France, The Netherlands, US, UK, Belgium, Australian and, British-French.</td>
</tr>
</tbody>
</table>
IV. EMPIRICAL MODEL

The present study attempts to show that sending students to receive tertiary education in a foreign country with comparatively less corruption reduces corruption in the students’ home country. When studying abroad, students have the opportunity to receive an education (regardless of the subject) in countries where transparency and honesty are potentially more valued than at home. In addition, the students network and interact with other classmates and are potentially exposed to better business ethics and a generally
more transparent business environment. Living abroad and being exposed to less corrupt environments give students the opportunity to reduce the levels of corruption in their home countries. Investigating the ways through which this might take place is beyond the scope of this paper; however potential hypotheses will be provided in the concluding remarks.

In order to study the correlation between corruption and foreign education, I mainly use Pooled and Fixed Effects Ordinary Least Squares (OLS) estimations. As explained above, the main dependent variable is the ICRG measure of corruption and the main explanatory variables are the share of students studying abroad over the total population receiving tertiary education, a corruption index of recipient countries and the interaction between these two variables. The basic specification is as follows:

\[ C_{it} = \alpha \text{Share of Students Abroad}_{it} + \beta \text{Index of Corruption in Receiving Countries}_{it} + \gamma (\text{Students Abroad}_{it} \times \text{Index of Corruption in Receiving Countries}_{it}) + \delta \text{Control Variables}_{it} + \text{Country Fixed Effects}_{i} + \text{Time Fixed Effects}_{t} + \epsilon_{it} \]

Where \( C_{it} \) is the level of corruption in time \( t \) and country \( i \) is measured by the International Country Risk Guide. Control Variables include other corruption determinants that are listed in section III including GDP per capita, levels of economic freedom, freedom of press and democracy levels. The interpretation of the coefficients of the control variables will be presented in the following section along with other results of the regression analysis.

V. RESULTS

V.1 Primary Model Specification

This section provides a thorough analysis of the results obtained from the different regression specifications. I use two different estimation techniques: pooled OLS and fixed effects OLS. The pooled OLS gives an estimate of how the
variables are correlated while the fixed effects OLS controls for country and time-fixed effects. I run ten different regression specifications ((I)-(IX)) for each technique that progressively incorporate the different corruption determinants discussed above. For a clear and successful interpretation, it is worth restating that corruption as a dependent variable is measured on a zero to one scale where one is least corrupt. That is, a positive correlation in this case is translated as causing a decrease in corruption.

Corruption and Foreign Education

Table 6 presents the regression results without controlling for country or time-fixed effects. The variable for the share of students studying abroad is negative and significant in the majority of regression specifications. The coefficient remains highly significant at the 1 percent level in the majority of specifications. The index of corruption in recipient countries is very persistent; the coefficient is small but it remains negative and highly significant at the 1 percent level (p-value of 1.29E-126 with all determinants included) all throughout the specifications. On the other hand, as hypothesized, the interaction variable between the share of students abroad and the corruption index in recipient countries remains positive and significant (at the 10 percent level) in all but one specification.

Table 7 shows very similar results for the main independent variables. Here the type of estimation used is fixed effects OLS, which controls for country and time. The results of these estimations are therefore robust to country-specific, time-invariant characteristics, including ethnic composition, colonial ties (this is why the colonial heritage variable is dropped), geographical variables and many other unobservable characteristics. In this case, the share of students abroad remains negative and significant in all but one of the regression specifications. The index of corruption in recipient countries is also persistent with very low p-
values (5.88859E-32 in specification (VIII)) and thus very significant at the 1 percent level. In addition, the interaction variable remains positive in all specifications as well as highly significant at the 1 percent level. The interaction has a p-value of 0.00028 in the complete model that includes all corruption determinants showing the strength of the results.

The share of students is interpreted as the impact that sending students abroad to receive tertiary education has on corruption when the corruption differential index is zero. That is, when the corruption difference between country A (sending) and country B (recipient) is zero, the effect that sending students from country A to country B is negative. One of possible reason for this result is that students going to study abroad to countries with the same levels of corruption are exposed to a similar type of environment and business ethics. This education would be no different from the one they receive at home in terms of transparency of the environment. Students might then be encouraged to behave in the same way as the officials and/or businessmen in their home countries. In the case of very corrupt countries, this leads to the perpetuity of corruption and a worsening of the conditions. In addition, one needs to take into consideration the impact of “brain drain.” Students that go abroad are within those who receive tertiary education in the sending country. They are usually the best and brightest. When they go abroad, this signifies a big loss for the country and a slow down in the potential for development and economic growth and an increase in the chances for corruption. This could explain the negative coefficient for this variable, which fulfills the expectations of my hypothesis.

The index of corruption in the recipient countries remains negative and significant in all specifications. This coefficient measures the impact that not sending any students abroad has on the levels of corruption in the home country. That is, if country A does not send any students abroad, corruption in country A will increase. A potential reason for this finding is that a country that does not send any students
abroad is more likely to be very isolated from the world economy, globalization and progress. It is therefore reasonable to predict that this isolation and lack of interaction with other nations will lead to increasing levels of corruption in the country, since there is very limited development and growth. This isolationism principle can provide a good explanation for the persistent negative but significant coefficient of the corruption index variable which is consistent all throughout the analysis.

The interaction term between the share of students and the corruption index of recipient countries captures the essence of this paper. This coefficient explains the impact of an increasing share of students going abroad to receive tertiary education to countries where there are lower levels of corruption. In this case, the coefficient for this variable is consistent; it remains positive in all the regression specifications as well as relatively highly significant. This possibly indicates that an increase in the share of students from country A that go to country B where B is a less corrupt country that A, leads to lower levels of corruption in A. That is, there is evidence that foreign education in less corrupt countries reduces corruption in the home country.

As hypothesized, there is evidence that sending students to study abroad in less corrupt countries leads to a decrease in corruption in the home country. The persistence of the positive and statistically significant coefficient throughout the different specifications shows the robustness of this finding.

Other corruption determinants

The control variables included were added on the basis of the literature that focuses on corruption determinants. In the Pooled OLS estimation regressions, the economic variables "GDP per capita" and "Economic Freedom" are both positive and significant. This means that richer countries are less subject to corruption. Also an increase in
economic freedom, which comprises trade, business, investment, and property-rights freedom, also leads to lower levels of corruption.

On the other hand, democracy levels seem to be consistently significant and positively correlated with corruption (p-value of 0.043 when all determinants are included). This result is widely accepted in the literature, where higher levels of democracy are often associated with lower corruption. The variable for the regulatory environment has both a negative and significant impact on corruption. That is, more regulations lead to more corruption. This could be a consequence of the increased opportunity for bribery and rule transgression in a highly-structured system. Despite the positive impact of foreign education and the general trend observed in the literature, the variable for tertiary education remains negative and significant. An argument could be made that higher levels of education lead people to have higher positions of power, and thus more opportunities for corrupt behavior. Researchers Peñalosa and Van Ypersele study corruption, education, and output. They point out that, although education is not necessarily detrimental for corruption, more education leads to higher output and thus more rents that can be obtained from corrupt behavior.\(^{16}\)

The variable "Freedom of Press" is negative and significant in all the specifications. This variable is measured on a zero to one hundred scale where one hundred is least free. That is, a negative coefficient indicates that more media freedom is correlated with lower levels of corruption, which is consistent with the literature findings. "Political Stability" is also positively correlated with corruption (p-value of 0.041), which means that a country with a stable government, that is, one unlikely to be overthrown or threatened by terrorism, has lower levels of corruption. The possible mechanism behind this result is that more stability allows for better business practices, less risk of investment, and more
social stability. All of this contributes to the reduction in corruption.

Lastly, "Colonial Heritage" remains positive and significant at the 10 percent level. Countries that used to be colonies generally have lower levels of corruption. In his analysis, Daniel Treissman looked at the impact of colonial history and established that most British colonies have lower levels of corruption. Serra corroborates the significance of the variable by including a control for former British colonies.

The fixed effects estimation in Table 7 shows the same signs for all coefficients. "Economic Freedom" and "Democracy" remain significant and positive. "GDP per capita" shows a negative sign but remains insignificant in five out of seven regressions. "Political stability" remains positive and significant while "tertiary education" loses all significance. When controlling for time-invariant fixed effects, some of the changes in these variables might already be partially accounted for. This would explain the loss of significance.

The additional variables included generally behave according to what the literature has already established. This emphasizes the validity of the data, and it supports the main conclusion of this paper. That is, the interaction term between the share of students and the corruption index of recipient countries is a statistically significant determinant of corruption. Therefore, receiving a foreign education appears to be relevant to reduce corruption.

V.2 Lagged regressions

An additional hypothesis about education and corruption is that the effect of receiving a foreign education can be lagged. That is, the impact that students may have on their home countries may be delayed. Students may need time to set up businesses, become important officials in the government or other institutions through which they could
potentially influence corruption in their home countries. In order to account for this effect, I develop a model that includes lags of the aforementioned independent variables. In this case, I selected a five year lag since I considered this to be enough time for a business to flourish or for a person to gain enough work experience to be promoted to a more influential position. In addition, the limitation of a ten year time series dataset prevents me from lagging for more than five years without losing a significant amount of observations.

Table 8 presents the results of the regressions specifications with a pooled OLS estimation including the lagged independent variables for five years. In this case, the main independent variables lose most of their significance. The share of students studying abroad remains mostly negative but loses its significance in seven of the eight specifications. The interaction variable between the share of student abroad and the index of corruption in the recipient countries also remains positive in the majority of specifications but statistically insignificant with high p-values reaching 0.746. However, the index of corruption in recipient countries is persistent; the coefficient is negative and significant in all specifications, which confirms that the isolationist argument prevails even in the lagged model.

In terms of the other independent variables, the economic variables (GDP per capita, economic freedom and regulatory quality) are all positive and significant. Levels of democracy appear to be positive and significant in two of the five regressions where it is included. The variable reflecting tertiary education levels loses all significance with colonial heritage. Political stability remains positive and significant, reinforcing the argument that countries where there is historical political stability have lower levels of corruption. The majority of these results match those obtained in the general regression models without lags included.

However, when analyzing Table 9 the results change dramatically. Table 9 uses a fixed effects OLS estimation and
includes lagged variables for five years. The results show that the share of students studying abroad is mostly positive but completely insignificant. In addition, the index of corruption in recipient countries now shows a positive and significant coefficient. This would indicate that having been in an isolationist state at time $t-5$ reduces corruption five years later. A potential interpretation is that countries in isolationism have the capacity for strong development and growth once they join the global economy. In this case, it may be that a country that was in an isolationist position in the year $t-5$, abandons this state and joins the global economy. Through new regulatory methods, increasing investment, and more democratic regimes, its corruption then decreases at time $t$. Surprisingly enough, the coefficient for the interaction is significant in the majority of the regressions (p-value of 0.054), but it shows a negative sign. This means that when controlling for fixed effects, an increase in the number of students studying abroad at time $t-5$ has a negative impact on the corruption at time $t$. This might be due to a reversal in the education ideals obtained abroad after being exposed once again to the lack of transparency (assuming they return to the home country). More specifically, one could interpret this negative coefficient as representing the resignation of individuals following the established system as opposed to fighting against it. That is, they perpetuate corruption because of the hardship of working for a change and the ultimate benefits one can obtain from corrupt behavior. On the other hand, there is an immediate loss of significance in all control variables. This indicates that when we control for time invariant changes, the impact of all variables including GDP per capita or levels of democracy lose all effect on the levels of corruption. For instance, the GDP per capita in the year 2000 in country A does not have an impact on the corruption levels of country A in 2005. The same rationale applies to all the control variables. It is worth pinpointing that the regressions in Table 9 have an unusually low adjusted R squared, ranging between 0.09 and 0.13. This
might be a sign of omitted variable bias that indicates that when testing for lags one needs to consider other variables outside of the previous specification. This may be skewing the results from this model specification, which cannot be considered robust.

Based on Table 8 and Table 9, there is robust evidence that the effect of sending students to receive tertiary education abroad on corruption is relatively immediate given the insignificance in most of the variables in the lagged regressions and the potential for a reversal in educational values.

In conclusion, the results that prove to be the most robust are those presented in Table 6 and Table 7. These indicate that the share of students studying abroad (normalized by the number of students that receive tertiary education) has a negative impact on the corruption at home. The corruption index of recipient countries, which is a weighted average of the differences in corruption between sending country and recipient country at time t, is also negative. However, the interaction between these two variables, and the key variable under study, remains positive and significant throughout the pooled and fixed effects specifications. This provides robust evidence that, as hypothesized, promoting foreign education in countries where the corruption levels are lower than at home, leads to less corruption in the home country. Foreign education appears to have a relatively immediate effect on corruption.

VI. SENSITIVITY ANALYSIS

In order to strengthen my results, I address potential issues of endogeneity and the concern over stay rates that might affect the strength of the impact of foreign education on corruption.
VI.3 Endogeneity

The existent debates on the determinants of corruption and the rationale for foreign education give rise to concerns about endogeneity.

*Omitted Variable Bias*

Omitted variable bias as a form of endogeneity is addressed in this paper with the inclusion of control variables the literature has proved to be significant determinants for corruption. As mentioned above, I include the variables that Serra, in her study on corruption determinants, establishes as significant when measuring corruption. These variables are GDP per capita, levels of economic freedom, quality of regulations, level of democracy, freedom of the press, level of political stability, and colonial heritage. The percentage of tertiary education over the total population is also added because of its importance for foreign education.

While the existence of other country-specific, time-varying omitted variables cannot be ruled out, these variables prove to be overall robust and explanatory of corruption.

*Reverse Causality*

Reverse causality is the other potential source of endogeneity in this analysis. Overall, corruption has often been referred to as a push factor for migration. People decide to leave their home countries because of economic and political lack of transparency that often lead to higher unemployment, low economic growth, and other similar factors. Marie Hadamovsky develops a study in which she empirically analyzes the determinants of migration. She concludes that countries with higher levels of corruption have greater labor outflows. That is, corruption leads to more immigration.\(^\text{19}\)

However, overall in the literature of migration and corruption there is no reference made to international student mobility. Given the increasing number of students able to
receive a foreign education, literature emerged on both the value of this education for home and host countries, as well as the rationale for this migration. In his book on the internationalization of higher educational, Kemal Guruz establishes several reasons why students might decide to go study in a foreign country. He determines both pull and push factors for this phenomenon. As pull factors, he states that the quality of education abroad is a major consideration. Students tend to attend universities that are known for providing a high quality education. Spoken language and colonial ties with countries like Spain, France, or the United Kingdom are also prime factors that affect a student’s decision to study abroad. Networking has recently been appointed as a new consideration that contributes to the increase in international student mobility. More importantly, countries in Europe are now offering packages to attract international students to their institutions, which constitutes powerful pull factor.\textsuperscript{20}

On the other hand, push factors seem to be less relevant. The quality of the educational system at home is possibly one of the major push factors that drive for the internalization of education. Political and economic conditions, however, are hardly mentioned as a determinant to receive foreign education. Even though these may also be influential, according to the literature, they are not the prime drivers. Behind the argument of seeking good quality education is the understanding that education potentially leads to better jobs and thus a better life.

Spilimbergo also develops a brief empirical model for the determinants of international student mobility.\textsuperscript{21} Like Guruz, Spilimbergo identifies the quality of education as being a highly significant consideration for foreign education. Colonial ties and spoken language are also very strong factors.

Overall, there is no substantive evidence that indicates that international education is majorly driven by corruption. Other considerations such as quality of education, spoken
language, and networking are more important in the decision to go study in a foreign country.

The support of the literature decreases the risk of endogeneity due to reverse causality and therefore strengthens the conclusion that foreign education helps decrease corruption.

VI.4 Stay rates

Foreign-educated students may have an impact on the corruption of their home countries both if the stay abroad and if they return home. There has been abundant literature that looks at the influence of diasporas on trade and investment between countries where there is abundant bilateral migration. However, the effect on corruption is likely to be greater if the student returns to the home country and is able to start a business, become a government official, or otherwise assume a position of power.

Measuring stay rates has proven to be very complicated because there is no systematic dataset on the number of students that return to their home countries. George Borjas reports that between 1971 and 1991, over three million people received student visas for the United States but only 393,000 received permanent visa status at the end of their studying period. This indicates that stay rates are not as high as is often believed. In his study, Michael Finn states that stay rates were increasing until the 1990s and then they started going down. According to William Glaeser, students maintain a strong attachment to their home countries that ultimately forces them to return.

In his analysis, Spilimbergo provides a table that shows the stay rates for foreign doctorate recipients in the United States. The following table reproduces the results.

Based on this table, large countries like China and India have the lowest return rates, while smaller countries like Spain have low stay rates. Perhaps students coming from less populous countries have an incentive to go back home
Table 12. Stay rates of foreign doctorate recipients in the United States

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwan province of China</td>
<td>2,268</td>
<td>42.4</td>
<td>57.3</td>
</tr>
<tr>
<td>India</td>
<td>1,995</td>
<td>87.5</td>
<td>88.2</td>
</tr>
<tr>
<td>South Korea</td>
<td>1,943</td>
<td>15.1</td>
<td>59.0</td>
</tr>
<tr>
<td>China</td>
<td>1,649</td>
<td>91.1</td>
<td>90.8</td>
</tr>
<tr>
<td>Brazil</td>
<td>255</td>
<td>21.1</td>
<td>36.0</td>
</tr>
<tr>
<td>Mexico</td>
<td>223</td>
<td>30.8</td>
<td>39.8</td>
</tr>
<tr>
<td>Chile</td>
<td>57</td>
<td>26.1</td>
<td>54.4</td>
</tr>
<tr>
<td>Turkey</td>
<td>252</td>
<td>43.7</td>
<td>55.3</td>
</tr>
<tr>
<td>Indonesia</td>
<td>119</td>
<td>16.4</td>
<td>...</td>
</tr>
<tr>
<td>Italy</td>
<td>106</td>
<td>37.1</td>
<td>62.0</td>
</tr>
<tr>
<td>Greece</td>
<td>276</td>
<td>49.1</td>
<td>70.0</td>
</tr>
<tr>
<td>Spain</td>
<td>87</td>
<td>34.0</td>
<td>62.0</td>
</tr>
<tr>
<td>Canada</td>
<td>430</td>
<td>55.1</td>
<td>64.2</td>
</tr>
<tr>
<td>Argentina</td>
<td>67</td>
<td>44.7</td>
<td>62.5</td>
</tr>
<tr>
<td>Colombia</td>
<td>66</td>
<td>28.5</td>
<td>57.5</td>
</tr>
<tr>
<td>Total, all countries</td>
<td>14,189</td>
<td>53.5</td>
<td>69.1</td>
</tr>
<tr>
<td>(Without India and China)</td>
<td>10,545</td>
<td>38.8</td>
<td>59.5</td>
</tr>
</tbody>
</table>

*Source: Finn (2001), Table 32 from the doctorate recipients from U.S. universities (2005), and Spilimbergo (2009)
because they have a better chance to having impact on the political and business methods of their home countries, while students from countries with large populations do not.

In conclusion, there is evidence that stay rates for the majority of countries do not surpass fifty percent. This means that students are very likely to go back to their home countries, providing opportunities to impact corruption directly.

VII. CONCLUSION

Abundant private and public funds are now being directed towards scholarships and fellowships that promote foreign education all over the world, not only in Western countries, but also in Asian and Arab countries. Are their resources being well spent?

This paper addresses this question by examining the impact that foreign-education has on the levels of corruption in a students' home country. To evaluate this relationship, I use a comprehensive data set that includes data on international student mobility since 1998 and covers the majority of the countries in the world. In addition, I use a robust index of corruption compiled by the International Country Risk Guide. Using this dataset, I have shown that an increase in the share of students going abroad to less corrupt countries appears to reduce corruption in the sending country. This study presents strong evidence for a negative correlation between foreign education and corruption.

When running lagged estimations, I find that there is no significant impact of foreign education on corruption after 5 years, which indicates that any relationship between international education and corruption appears to take place within the first two years of studying abroad. However, the issue of lagged regression estimation due to potential omitted variable bias reduces the robustness of this particular regression estimate.
The robustness of the correlation between foreign education and corruption suggests that there might be a causal relationship between the share of students studying abroad in less corrupt countries and the reduction in corruption at home. This paper contributes to the literature on the value of foreign education and provides empirical evidence that supports the development of scholarship programs and institutions dedicated to international education to promote intercultural understanding as well as to develop more transparent systems in every country.

In addition, this paper makes a contribution to the corruption literature by suggesting a new anti-corruption strategy that relies on the promotion of foreign educational programs. This finding is particularly beneficial for countries like the United States, where anti-bribery laws have been seen as a threat to the competitiveness of certain industries in the global market. In the United States, the Foreign Corrupt Practices Act, passed in 1977, makes it unlawful for U.S. citizens to participate in any type of bribery or corrupt behavior. This includes the bribing of foreign officials. The fact that this type of laws only affects some businesses has put many American and European multinationals at a disadvantage since they can be accused and charged if they are suspicious of corrupt behavior. Given the robustness of my findings, the United States should consider treating foreign education as a tool to reduce corruption in the world. The funding of scholarship programs such as Fulbright will not only improve multicultural understanding but it can prevent and reduce corruption and thus potentially benefit American corporations. With the reduction in corruption, companies will be able to do business in countries where they were previously uncompetitive due to anti-bribery laws. The same prescription applies to other countries, particularly countries in the European Union, where anti-bribery laws have also been approved.

Ultimately, the mechanisms by which foreign education may reduce corruption remains uninvestigated. As
mentioned before, this analysis is beyond the scope of this paper. However, I have proposed one such mechanism that is compatible with the available evidence. Students who receive an education abroad tend to be the academic elite in their countries, and are therefore most likely obtain top positions in both the public and private sectors in their home countries. This gives these foreign-educated individuals the opportunity to exercise their power and progressively change the corrupt system towards more transparent practices. Future research should focus on investigating the channels through which foreign education may reduce corruption.

Finally, this paper has provided statistical evidence that foreign education may impact levels of corruption. This finding suggests that countries should consider encouraging more students to attend higher education in a foreign country. This will not only promote intercultural understanding and a more cosmopolitan society, but it appears that it may also foster the more transparent environment necessary for economic growth and development.

Endnotes

1 United States State Department “Fulbright Scholarship.” www. Fulbright.state.gov.
   Among world leaders that have benefited from a Fulbright are Ingvar Gosta Carlsson (Sweden), Alejandro Toledo Manrique (Peru) or Moeenuddin Ahmad Qureshi (Pakistan)
2 DAAD (Deutscher Akademischer Austausch Dienst, German Academic Exchange Service). https://daad.org/page/about/index.v3page;jsessionid=r3fi1dqon3j.
   Several world leaders have received a DAAD funds: Luc Ferry (France), Wangari Maathai (Kenya) or Amin Farhang (Afghanistan).
   This scholarship gives outstanding students the chance to study in the most prestigious universities in Europe, Canada and the United States. After their education is complete, these students join the government as part of the public administration, military service or professional service.


Available at SSRN: http://ssrn.com/abstract=954588


http://www.prsgroup.com/ICRG_Methodology.aspx#EconRiskRating

13 United Nations. “UNESCO.”


14 The Quality of Governance Institute. “The Quality of Governance Dataset.”

http://www.qog.pol.gu.se/data/qogstandarddataset/


Available at SSRN: http://ssrn.com/abstract=954588


Available at SSRN: http://ssrn.com/abstract=954588
THE POLITICS OF THE MICROFINANCE CRISIS
IN ANDHRA PRADESH, INDIA
Pooja Yerramilli

INTRODUCTION: THE MEDIA WAR

In December 2010, reporters around the world declared that Andhra Pradesh, the fifth largest state in India, was facing an unprecedented suicide epidemic. The alleged cause of the spike in suicides was malpractice on the parts of microfinance institutions (MFI). The media rapidly became saturated with stories of individuals whose excessive debt burdens were composed of multiple MFI loans, and whose deaths were prompted by the coercive practices of MFI employees. The accusations were explicit, as the New York Times, BBC News, and Bloomberg ran articles entitled “India Microcredit Faces Collapse from Defaults,” 1 “India's Micro-finance Suicide Epidemic,” 2 and “Suicides in India Revealing How Men Made a Mess of Microcredit.” 3

By December 2010, the Society for Elimination of Rural Poverty (SERP), a governmental agency, reported at least 70 MFI-related suicides. 4 Hence, the financial service, which had once been hailed as the silver bullet against poverty, became the target of public and governmental outrage. Faith in microfinance deteriorated around the world as the deaths unfolded.

Yet the causes behind the MFI crash, measured by the high default rates that rendered these institutions unsustainable, remain unclear. Following the suicides, the government of Andhra Pradesh passed the Micro Finance Institutions Ordinance in October 2010, which substantially limited the growth and operation of MFIs in the state. According to Reddy Subrahmanyam, the rural development

Pooja Yerramilli studied political science at Yale University, where she graduated in 2012.
official who drafted the law, MFIs’ sole focus on making “hyperprofits off the poor” justified such regulations. Subrahmanyam claimed that MFIs awarded loans to “rural people without checking whether they had the capacity to repay,” and thereby caused their own demise.

However, as argued in this paper, the incompatibility of MFIs with the political system in Andhra Pradesh was the true driving force behind the crash. The portrayal of the crisis as entirely the fault of the MFIs prompted skepticism among microfinance scholars and practitioners regarding the role and culpability of the government itself. Elizabeth Rhyne, the Managing Director of the Center for Financial Inclusion, argues that the passage of the Andhra Pradesh Micro Finance Institutions Ordinance (2010) was based on the state government’s ulterior political motives. She suggests that the government capitalized on the increasing dissatisfaction with MFIs to suppress private competition with the government’s self-help group (SHG) programs. Therefore, the ordinance, not the farmer suicides, signaled the beginning of the MFI crash, as it impeded the operation of MFIs and increased banks’ reluctance to provide liquidity.

The polarized media war between those who blame the MFIs and those who find fault with the government has raised several questions. Firstly, is for-profit microfinance, a model prevalent in rural Andhra Pradesh, inherently at odds with social development? Secondly, was the Andhra Pradesh Micro Finance Ordinance (2010) necessary? Finally, what are the impact and implications of the crisis on microfinance and development policies in Andhra Pradesh and around the world?

This paper aims to answer these questions through a discussion of the economic and political aspects of microfinance expansion in Andhra Pradesh. Superficially, the crash appears to be a manifestation of the controversy regarding best practices in poverty alleviation strategies. However, the story actually centers on the competition among various actors to gain political power through the
installation of development programs. The intense conflict between political parties and their struggle to gain votes through clientelism contributed to a politically tense environment. By providing a service that overlapped with those extended by the government, private MFIs interfered with political parties’ strategies to establish power and thus served as the perfect scapegoats to further each player’s ulterior agenda. Therefore, while financial motives may have encouraged MFI growth and misconduct, the threat that these organizations posed to Andhra Pradesh’s political system is the primary factor that precipitated the crisis.

This article supports the thesis through a critique of the government’s fundamental arguments against profit-seeking MFIs. The first section provides the historical background surrounding government regulation, particular in regard to development projects and the banking system. The paper then focuses on the relationship between the World Bank and the central government of India, and the effects of political competition on welfare and development programs in Andhra Pradesh. The final sections discuss the competition between the government and private actors, and analyze the factors that differentiate MFI outcomes in Karnataka and Andhra Pradesh. These comparative analyses reveal that the difference between the microfinance markets in Andhra Pradesh and those in other states and countries was not due to the MFIs’ operations but rather the political context in which these MFIs functioned.

THE GOVERNMENT’S JUSTIFICATION OF THE ORDINANCE

The primary purpose of microfinance in India is to provide a means through which impoverished families who are generally excluded from financial systems may access credit. Prior to the introduction of microfinance institutions (MFIs) in India in the 1980s, the poor predominantly relied on informal commercial lenders, as formal banks were
unwilling to provide credit to those who were insolvent or could provide no collateral. These moneylenders were easily accessible and unregulated, and were thus able to charge exorbitant interest rates. MFIs provided a seemingly preferable form of credit. Microcredit, as originally conceptualized by Muhammad Yunus, consists of small loans that primarily “support income-generating businesses aimed at lifting the poor out of poverty.” Most MFIs in India grant loans to individuals, though some encourage clients to form joint-liability groups (JLGs). The latter scheme allows members to guarantee each other’s loans. The microfinance industry, composed of both government-sponsored and private institutions, aimed to meet the poor’s unfulfilled demand for financial services and rapidly burgeoned, reaching a year-over-year growth rate of 7 to 8 percent from 2005 onwards.

The microfinance which emerged in Andhra Pradesh significantly differed from that proposed by Muhammad Yunus. According to Yunus, MFIs should charge the minimum interest rates required to sustain functionality. Unlike Yunus’ model, however, some Indian MFIs such as SKS Microfinance Limited sought profits. SKS was first founded in 1996 as a non-profit NGO. The organization rapidly grew with the financial support of Yunus’s Grameen Bank and ICICI, one of the largest banks in India. In an attempt to increase the growth rate of his MFI, Vikram Akula transformed SKS into a for-profit Non-banking Financial Company (NBFC), which enabled him to access to new and larger sources of funding through the banking sector. As a result, the institution’s branches, staff, and money disbursed increased more than ten-fold from 2007 to 2010. Thus, SKS received innumerable accolades and was ranked the number one MFI in India and the number two MFI in the world, according to MixMarket. SKS is merely one of many for-profit MFIs headquartered in Andhra Pradesh.

What incited controversy among development experts was the extent to which MFIs in Andhra Pradesh
appeared to prioritize profits. In an attempt to further accelerate growth, SKS launched an initial public offering and raised over $350 million only four months before the crisis. This action garnered criticism from Akula’s former supporter and financier, Muhammad Yunus, who argued that this transformation would pressure the MFI to prioritize the interests of shareholders over the interests of clients. In catering to profit-seeking investors, SKS would, Yunus feared, support the prospect of “making money out of poor people.”

Indeed, both government officials and microfinance executives, including BASIX chairman Vijay Mahajan, agree that MFIs’ sole focus on this “quest to grow” compromised ethical standards and thereby contributed to the crisis. Profit-driven expansion of services pushed MFIs into overlapping geographical regions. Due to the absence of a unified microfinance regulatory authority, complete data on the extent of this overlap are unavailable. Regardless, the Institute for Financial Management and Research (IFMR) has managed to construct a map of microfinance penetration in India based on limited data. According to IFMR, Andhra Pradesh has the highest MFI/SHG penetration of all of the states in India. Additionally, Sa-Dhan, an association of over 200 Community Development Finance Institutions (CDFIs), has generated a Microfinance Map of India based on the data reported by its members. Although the data are gross underestimates of MFIs’ true reach, as many do not regularly submit and monitor their finances, these maps provide important insights. For one, compared to other states in India, the MFI market in Andhra Pradesh is relatively saturated.

Based on this broad conclusion and the anecdotes relayed through the media, the government publicly concluded that the geographic concentration of MFIs led to intense competition and inappropriate practices within the sector. According to Reddy Subrahmanyam, Principal Secretary of the Department of Rural Development in the
Andhra Pradesh Government, MFIs engaged in “irresponsible lending leading to multiple loans without due diligence, unproductive loans for consumption and consumer durables, lack of transparency in operations, usurious interest rates, and coercive recovery practices.” Prabhu Ghate, author of *Microfinance in India: State of the Sector Report* (2007), further asserts that in order to attract clients, many MFIs relaxed previously stringent deadlines and fines. Taylor (2011) provides further descriptions of misconduct and asserts that MFIs additionally obscured the high interest rates that they would ultimately charge on the loan repayments. This prioritization of profits over social development appears to be supported by the finances of the MFIs—such institutions as SKS, BASIX, and Spandana charged interest rates as high as 30 per cent on loans, while they borrowed funds from banks at interest rates as low as 11 per cent.

Due to the large number of MFIs, clients began to simultaneously take loans from multiple institutions, and often used one loan to repay another. Cases such as these were widely documented in the media, as households that engaged in such practices became saddled with insurmountable debts. MFIs essentially partook in subprime lending, as they primarily lent to marginal farmers who already faced extreme financial pressures. The clients were generally agrarian families who were susceptible to the financial stresses of irregular weather patterns and poorly developed infrastructure. This aggressive growth created a bubble in the microfinance industry that, according to the foresight of Ashish Lakhanpal, Managing Director of Kismet Capital LLC, and Monica Brand, Principal Director at Accion International, was bound to burst.

The government’s accusations against profit-seeking MFIs imply that for-profit microfinance is inherently doomed to fail. As asserted by Reddy Subrahmanym, the MFIs’ focus on profits pushed them to award loans to “rural people without checking whether they had the capacity to
repay,” and thereby caused their own demise.\textsuperscript{29} These statements suggest that such profit driven microfinance is unsustainable and inconsistent with the ultimate goal of poverty alleviation. If the government’s argument were true, it would imply that similar MFI crises should be observed in for-profit dominated microfinance markets outside of India.

Yet a closer analysis of the ordinance reveals that the government’s actions do not resemble the legal frameworks established in any other microfinance-rich region. The legislation unmistakably favors banks over MFIs, as it states “No MFI shall extend a further loan to a SHG or its members, where the SHG has an outstanding loan from a Bank unless the MFI obtains the prior approval in writing in such manner as may be prescribed from the Registering Authority after making an application seeking such approval”.\textsuperscript{30} The MFI Ordinance (2010) also contains stipulations that are overly punitive and seemingly arbitrary. For example, the legislation broadly defines coercive actions as:

(a) obstructing or using violence to, insulting or intimidating the borrower or his family members, or
(b) persistently following the borrower or his family from place to place or interfering with any property owned or used by him or depriving him of, or hindering him in, the use of any such property
(c) frequenting the house or other place where such other person resides or works, or carries on business, or happens to be, or
(d) doing any act calculated to annoy or intimidate such person or the members of his family, or
(e) moving or acting in a manner which causes or is calculated to cause alarm or danger to the person or property of such other person
(f) seeking to remove forcibly any document from the borrower that entitles the borrower to a benefit under any Government programme.
Complaints that fall within any of the categories above warrant prosecution of the MFI and such punishment often led to revocation of registration. Given the potential consequences of such complaints, points (d) and (e) above appear exceedingly biased toward the client, as any minor annoyance may legally justify court proceedings. The severity of the state government’s view of and actions toward the microfinance industry contrasts the cultivation and treatment of for-profit microfinance in other countries such as Bolivia in which the sector remained healthy.

INDIA’S STATE-LED DEVELOPMENT AND ITS EFFECTS ON MFI EVOLUTION

The power dynamic between these different actors in the years immediately following India’s independence provides the context for the government’s regulation of the financial sector. Given that the Indian government’s ability to drive industrial growth has long pivoted on its “power to define and pursue its goals.” India’s government has made frequent use of the banking sector to implement the country’s broader development strategies. Such was the case when the government nationalized private banks in 1969 and 1980. Although some private banks were permitted to exist, the rules governing their operations were stringent. Moreover, the state mandated that all public and private banks expand into rural regions, which were generally excluded from financial systems. The government further demanded that all banks allocate at least 40 per cent of their net credit to priority sectors, such as agriculture and other such underdeveloped sectors.

The government attempted to further improve financial inclusion through the establishment of banks specified for this purpose. In 1976, for example, the Indian government established a system of regional rural banks (RRBs) with the intention of extending credit to the poor. Furthermore, in 1981, the government created NABARD, a
development bank intended to “provide and regulate credit and other facilities for the promotion and development of agriculture, small scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas with a view to promoting integrated rural development and securing prosperity of rural areas and for matters connected therewith or incidental thereto”.

According to Sa-Dhan, an association of MFIs, these attempts to meet the financial needs of the poor were insufficient. The main inefficiency of these government backed programs, particularly the Indian Rural Development Programme (IRDP), was the allocation of large subsidies to each participating family. The spending of these subsidies, essentially deemed loans handouts, were not closely monitored or supervised by the government and allowed for the misuse of the money received. Hence, such programs proved unsustainable, as they perpetuated dependence on the government, resulted in high bank losses, and resultantly came to be widely regarded as temporary rather than long-term initiatives.

It was precisely these conditions that prompted the introduction of MFIs in India. The demand for a secure and monitored credit scheme for the poor remained high in spite of the government’s attempts to address this neglected population while the priority sector lending (PSL) requirement pressured banks to find and extend loans to partnering service-providing organizations. As such, MFIs were convenient channels through which the PSL stipulation could be fulfilled. Thus, even such development banks as NABARD and Small Industries Development Bank of India (SIDBI) began lending to and encouraging the growth of MFIs as a way to reach larger segments of the poor population. The government’s initial financial support of MFIs is consistent with its early provision of subsidies and grants to capitalists for the sake of accelerated development. The increasing diversification of MFI structures enabled each institution to occupy a different legal
classification. Although initially, MFIs were viewed solely as non-governmental development agencies and were registered as either societies and organizations “for the promotion of literature, science or the fine arts or the diffusion of useful knowledge/political education or for charitable purposes,” public or private trusts with defined members, or Section 25 companies defined as “limited company[ies] for promoting commerce, art, science, religion, charity or any other useful object.” These classifications soon changed as the size of MFIs increased. With the growth of the MFIs, many legally transitioned from non-governmental organizations (NGOs) to non-banking financial companies (NBFCs), in order to access bank credit, as in the case of SKS (Taylor, 2011). According to the Reserve Bank of India (RBI) Act (1934), an NBFC is a “company…, which has as its principal business the receiving of deposits, under any scheme or arrangement in any other manner, or lending in any manner.” These companies are regulated by the nationalized RBI.

The evolution of MFIs in this manner allowed them to commercialize and make the transition from non-profit to profit-seeking organizations though for many MFIs this transition remained incomplete. The RBI requirements for NBFC-MFIs can be difficult to fulfill including, in one example, required minimum net owned funds of Rs. 50 million or roughly $1,000,000 for an MFI to attain NBFC status. Previously, in 1999, this particular requirement was less taxing though still unattainable for many MFIs, as the minimum net owned funds amounted to Rs. 20 million, or approximately $400,000. The MFIs’ inability to raise such funds may be partially attributed to RBI’s additional limitation that MFIs cannot accept deposits. The government’s strict rules, which are rooted in its long-standing desire to control development and maintain power, have thereby pushed MFIs to seek profits as a means to ensure sustainability.

In this fashion, he government’s interference with
MFI growth may have contributed to the Andhra Pradesh crisis. Even those MFIs registered as NBFCs cannot offer savings mechanisms, as the RBI explicitly defines an NBFC-MFI as a “non-deposit taking NBFC”.

These limitations reveal that Yunus’s denunciation of for-profit MFIs in India should be redirected toward the government. Yunus argues that the primary alternative to the for-profit structure is the acceptance of deposits. He contends that savings programs for the poor are currently unavailable, are in high demand, and may provide the capital required for the proper functioning of financial institutions.

Yet MFIs in India, through no fault of their own, are legally prohibited from restructuring their programs in this manner. Due to the restrictions imposed by the government, even NBFCs that gain access to bank credit may be forced to resort to high interest rates in order to sustain function. The Indian government’s regulations stand in stark contrast to the microfinance industry in Latin America, as many for-profit MFIs in such countries as Bolivia and Mexico are authorized to not only provide loans but also savings mechanisms.

The state’s attempts to regulate the industry through the Andhra Pradesh MFI Ordinance (2010) are consistent with the nation’s interference with all development programs. It seems that India’s history of heavy regulation not only encouraged profit-seeking behavior, but also established precedence for the government of Andhra Pradesh to enact a heavily biased and harsh mandate.

WELFARE POLITICS IN ANDHRA PRADESH

Although the government’s history of strictly regulating development explains why the microfinance market in India was vulnerable to crisis, it does not wholly elucidate why the crash specifically and so catastrophically occurred in Andhra Pradesh. Indeed, the severity of the restrictions on MFIs and the government’s apparent favoritism of MFI clients may only be fully explained by the
competition among national and state level political interests.

In 1982, the Telugu Desam Party (TDP) emerged in Andhra Pradesh politics with the primary purpose of challenging the Congress Party. The Congress Party’s constituency in each state of India differed depending on the local divisions. For example, “in Tamil Nadu conflict divided Brahmin and non-Brahmin, while in Rajasthan it was Rajput versus Jat, and in Andhra Pradesh the Kamma against the Reddy],” though the Reddy and Kamma castes comprised only 6.5 and 4.8 percent of the state’s population respectively.60, 61 The Congress Party in Andhra Pradesh was largely composed of Reddys and relied on the support of the backward castes, a diverse group of communities. Members of the latter cohort ranged from small farmers to washer men to landless laborers.62 The TDP was founded on the basis of caste rivalries and economic discontents against the Congress Party’s supporters. The Kammas, who had largely improved their economic status through assorted entrepreneurial activities and commercial activities, were eager to challenge the political legacy of the Reddys and increase their own power.63 Therefore, they supported N. T. Rama Rao (NTR), the Kamma film star who founded TDP.

The politics of Andhra Pradesh, like the national politics, were largely governed by the concerns associated with the fragmented-multiclass state. NTR’s support base was heterogeneous, as he attempted not only to appeal to Kammas, who occupied a range of economic classes, but also the rural poor, women, and the “backward” castes.64 65 which had traditionally served as the base of Congress Party’s traditional supporters. These factions were unified predominantly by dissatisfaction with the perceived corruption and inefficient practices of the Congress as well as their admiration of NTR’s apparent dynamism. Due to the diversity of the constituents, NTR’s promises ranged from economically and politically reforming the corrupt government to demanding increased state autonomy and implementing welfare programs to provide basic living needs
for the poor.\textsuperscript{66} The TDP thus became a party caught somewhere in between development-oriented and populist policies.

The TDP entered a second distinct stage under the leadership of NTR’s son-in-law Chandrababu Naidu. Naidu ousted NTR from the party in 1995 after his father-in-law’s command of the party proved too autocratic. He, too, drew support from a diverse base (Suri, 2004). Hence, Naidu’s rhetoric was carefully calculated to appeal to “the world outside AP, the urban middle classes, his own Members of the Legislative Assembly (MLAs), his rural party workers and the electorate”.\textsuperscript{67}

However, the TDP’s actual policies substantially differed from those proposed in its campaign platforms, due to the heterogeneity of its political constituency. Naidu was widely viewed as pragmatic relative to NTR, particularly in his apparent prioritization of development over populism. Specifically, he emphasized the need for fiscal austerity and a resistance towards implementing welfare programs the entire spectrum of proposed, citing the increasing need to balance the state’s budget as the top priority. He thereby gained the support of the higher socioeconomic classes who grew increasingly dissatisfied with NTR’s populist policies.\textsuperscript{68}

Yet socioeconomically and ethnically divided societies provide an environment conducive to clientelism (Medina & Stokes, 2002). According to Bardhan and Mookherjee (2011), “clientelism refers to strategic transfers made by political parties and governments to poor and disadvantaged groups as a means of securing their votes, in an effort to consolidate political power”.\textsuperscript{69} Indeed, in order to maintain support among all socioeconomic classes, Naidu tempered his promises of true development with new welfare policies such as “India’s largest public housing program, a widespread consumption subsidy on rice, cut-rate power provision, and even free clothing”.\textsuperscript{70}

The dichotomy between development and welfare populism in Naidu’s policies may therefore be viewed in two
lights. Naidu may have either genuinely planned his development strategy to gradually phase out the government’s history of handouts and/or may have intentionally engaged in clientelism. Much of the rationale for clientelism arises from the large agrarian population. Aside from the socioeconomic and caste based divisions, factionalism also exists between urban and rural populations. It is also important to note that Naidu was often hailed as a leader of technology, in part because he supported the booming Information Technology sector. While this earned him praise, it also raised alarm among rural populations, who feared he focused too heavily on urban development. 71 This rural discontent certainly concerned the TDP, as 67 per cent of the state’s population (and voters) resides in rural regions of the state. 72 With this in mind, Naidu was forced to consider the desires of the agrarian cohort. It is no coincidence, therefore, that the announcement and implementation of welfare programs coincided with election seasons. 73

While these rural communities’ distress was seemingly caused by apolitical factors, farmers often blamed the government’s inadequate attention for their woes. Although Andhra Pradesh is a drought-prone state, the large population of farmers relies on rainwater for profitable crop yields. This dependence on natural processes increases the agrarian populace’s vulnerability to extreme financial stress. As Cole, Healy, and Werker (2010) find, voters in India hold the incumbent party responsible for weather crises such as droughts. 74 The severity of this negative response declines as the party’s relief expenditures increase only in the season preceding the election. 75 The effects of financial stress on the rural population’s vote explains the increase in promises of welfare schemes prior to elections, and the trend that voters in Andhra Pradesh “express allegiance along party lines due both to an ideological commitment to parties and to the political biases in benefit allocations”. 76 In 2004, for example, the coincidence of a drought and a resultant
exponential increase in farmer suicides with local elections harmed the TDP, as it resulted in a significant farmer vote against the party.\textsuperscript{77, 78} The distress and blame apportioned by farmers thus promoted clientelism as political parties attempted to buy their favor.

Despite his clientelist tactics, Naidu earned his state the reputation as the poster child for economic and political reform during his reign as President of TDP and Chief Minister of Andhra Pradesh from 1995-2004. This is largely due to his focus on heavily publicizing his efforts to develop the state.\textsuperscript{79} The Chief Minister’s evident resolve and enthusiasm for reform, particularly with regards to technology, market-led processes, and the transition from welfare to true development, apparently impressed the Bank.\textsuperscript{80} Thus, Andhra Pradesh gained worldwide recognition.

The TDP’s gradual transition away from populist policies at the encouragement of the World Bank left a power void that was quickly filled by the Congress Party. According to Medina & Stokes (2002), clientelism is based on one party’s political monopoly over a particular good that may “reduce the risk entailed in variations in income from private sources”.\textsuperscript{81} Even while welfare programs initially proposed and implemented by the TDP are consistent with this definition as the TDP drifted away from populism and emphasized development policies it gradually released its grip on political monopoly and even unintentionally facilitated the rise of the Indian Congress Party. Against the wishes of the Bank, the ruling Congress Party insisted that free power be supplied to farmers following the drought in 2006.\textsuperscript{82} Hence, this political party earned itself distinction as the party of the poor, with a political its clientelism that was largely mistaken for pro-poor policies.\textsuperscript{83} The local political parties’ quest for increased political power necessitated the installment of welfare programs alongside development initiatives and created a politically tense environment on which national and international spotlight focused.
SELF-HELP GROUPS

One of the primary development projects funded by the World Bank is the Self-Help Group (SHG) model, an alternative to microfinance. The governance of SHGs is separated into multiple tiers.\(^8^4\) The SHG itself is generally composed of 10-15 “women whose primary purpose is to save and then to take loans, initially from their own funds but eventually from a bank”.\(^8^5\) The group as a whole must repay the loan.\(^8^6\) The emphasis of the SHG model is group savings. This contrasts the standard microfinance institution (MFI) model of individual or joint-liability loans.\(^8^7\)

The dominance of SHGs over other models of microfinance was in part facilitated by the SHG-Bank Linkage Programme, organized by the National Bank for Agriculture and Rural Development (NABARD) in 1992.\(^8^8\) After witnessing the success of early SHGs, NABARD began to offer loans to SHGs of a maximum of four times the group’s savings.\(^8^9\) Today, several models of the SHG-Bank Linkage exist. The main benefit of the SHG-Bank Linkage is to reduce the risk associated with lending to the poor. Information regarding credit and repayment scores is unavailable for the target cohort. This lack of data may be mitigated through SHGs, as peers select and pressure members of the group to engage in responsible practices and follow repayment schedules.\(^9^0\) The SHG-Bank Linkage minimizes the transaction costs incurred by SHGs or small NGOs as well, as these organizations often do not have sufficient capital to absorb losses.\(^9^1\)

Yet the rapid proliferation of the SHG model cannot be attributed to purely economic factors. Rather, the primary driver of its growth was the government’s adoption of the movement. By March 2002, ten years after the initiation of the program, the government funded over 50 per cent of 460,000 SHGs.\(^9^2\) As Chakrabarti and Ravi (2011) suggest, the SHG has become the preferred mode of MFI delivery due to its favored status, not merely because it was the first
model introduced in the state. Major developments in the government’s support for SHGs occurred under the Naidu administration, in large part due to the TDP’s need to retain the support of rural cohorts. In the mid-1990s, the government supported the program for the Development of Women and Children in Rural Areas (DWCRA), which largely focused on the establishment of SHGs. In 2000, Velugu, funded by a $111 million grant from the World Bank, was launched to supplement existing SHG efforts. The Velugu program not only functions to provide loans to SHGs, but also assists these groups in the formation of cooperatives which may effectively negotiate prices of any goods produced. Additionally, the SHGs are used as conduits through which advice on investments and savings as well as other developmental objectives such as education and child marriage is disseminated. Velugu was later incorporated with District Rural Development Agencies (DRDA) to form Indira Kranthi Patham (IKP), a unified and more comprehensive agency targeting rural poverty. These projects channeled resources specifically toward the rural constituency.

Given the symbiotic relationship between the World Bank and the government of Andhra Pradesh, the state’s apparent prioritization of SHGs over other development or poverty alleviation policies and models is understandable. The government’s priority remained to uphold its status as the poster child of reform and poverty alleviation, and maintain the support of rural voters.

COMPETITION AND REGULATION IN ANDHRA PRADESH

While the previous sections provide the context for the microfinance crisis, they do not answer why the MFI crisis specifically occurred in Andhra Pradesh over any other Indian state. The laws and regulations delineated operated at the national level, and thus created an environment that
encouraged the growth of for-profit microfinance throughout the country. However, the true origins of the crash lie in the unique events and policies in Andhra Pradesh that forced MFIs and other financial institutions to become increasingly interdependent and profit-seeking.

The Krishna Crisis of 2005-2006

In 2005-2006, Andhra Pradesh witnessed a microfinance crisis similar in structure but smaller in scale to the crash of 2010. The Krishna Crisis, named because of its occurrence in the Krishna District of Andhra Pradesh, allegedly precipitated from MFI misconduct. MFIs, including BASIX and SHARE that were also implicated in the crisis in 2010, purportedly engaged unaggressive expansion and loan recovery methods such as the use of intimidating and abusive language. According to local reports, these practices resulted in the suicides of 10 MFI clients who had defaulted. Additionally, MFIs were accused of charging “usurious interest rates,” further indebting the poor.\(^98\) Therefore, the government shut down fifty MFI branches, apparently in an attempt to end these exploitative practices.\(^99\) These actions resemble the government’s effective shutdown of the industry in 2010.

During the Krishna Crisis, the state government’s condemnation of MFIs masked the political dimension of their actions. The MFIs’ inability to accept deposits inextricably linked the institutions with commercial banks for the sake of ensuring sufficient liquidity. In order to balance the interest rates charged on these bank loans, MFIs were forced to charge their clients high interest rates. Lower interest rates would have rendered these institutions unsustainable.\(^100\) Although MFIs attempted to compromise with the government by formulating a Code of Conduct through the Sa-Dhan association and proposed lowering interest rates past sustainable levels, the state still pursued drastic action in raiding and temporarily terminating the branches in the region.\(^101\) The government’s actions, therefore, suggest ulterior motives.
The state government’s dissolution of the microfinance branches lies primarily in the competition between state-funded SHGs and private MFIs. According to a survey conducted in Guntur, a district along the coast of Andhra Pradesh, 67 per cent of all Velugu and MFI members were clients of both institutions. As Ghate reports, “government representatives [claimed] that the MFIs were ‘eating into the SHG movement’.” A survey of Spandana clients showed that MFIs’ competitive edge derived from SHG members’ dissatisfaction with the relatively long loan waiting periods and small loan sizes offered through Velugu. Thus, MFIs posed a realistic challenge to the uptake of SHGs.

Given the rampant national and international promotion of Velugu, the government apparently found the competition posed by MFIs unacceptable. This hostility may be attributed to the threat MFIs posed to the ruling party’s political power. SHGs may be viewed as a “risk-free activity…that helps voters to diversify their risk in an uncertain economic environment…[and] reduces fluctuations in private income”. In this framework, the government may have used SHGs as clientelist goods. This conceptualization of SHGs relies on the state’s monopoly over the good. According to Medina & Stokes (2002), “the patron’s control over such an activity allows him to offer voters exclusive-dealing contracts”. The introduction of microfinance challenged this political monopoly, as MFIs offered similar and competitive services and thereby reduced the state’s full control of SHGs and its ability to use these programs as a means to gain power.

The impact of the Krishna Crisis on the growth and function of MFIs was limited. In response to the demand for regulation, the Micro Financial Sector (Development and Regulation) Bill was introduced into Parliament in 2007. This bill called for the formation of a Micro Finance Development Council to advise NABARD, the chosen regulator for all MFIs, on financial policy. Furthermore, the
bill proposed a Micro Finance Development and Equity Fund to facilitate further development of microfinance. The proposed legislation spurred controversy and was opposed by feminists and agrarian activists. They complained that the bill allowed the government to evade its responsibility of increasing financial inclusion through a fundamental restructuring of the system by encouraging private MFI function and growth. Others charged that commercial banks and accountability structures, among other necessities, were not adequately discussed in the bill. These critics ultimately prevented the passage of the legislation. Hence, the only weakly positive outcome of the crisis was Sa-Dhan’s Code of Conduct, a voluntary set of regulations that members of the association promised to adhere to. This code did not legally increase accountability.

REGULATION AS A MEANS TO SUPPRESS COMPETITION

The dynamics between the MFIs and state government during the Krishna Crisis mirror those observed in the state-wide crisis in 2010. MFIs became increasingly involved as intermediaries in the SHG-Bank Linkage. Furthermore, the rapid expansion of MFIs into regions already saturated with state-funded SHGs associated with Velugu enabled clients to take multiple loans from different institutions. According to M-CRIL, a microfinance rating organization, “in 2007, state-backed self-help groups...sometimes at subsidized interest rates, added 8.5 million clients, while microfinance groups added 3.2 million. Two years later, self-help groups added just 6.7 million clients, while microfinance groups added 8.5 million”. The success of MFIs at the cost of SHGs once again threatened Andhra Pradesh’s status as the “unquestioned leader in the sector”. In fact, according to a study conducted by World Bank researchers, “marginal farmers exhibited a slightly higher preference for SHG loans than small and large
farmers but they ended up borrowing the least from this source (less than 10 percent of households),” indicating that for the most part, MFIs were more popular than SHGs.¹¹¹

The state government thus acted to inflict damage upon the microfinance industry in order to reduce such competition. The government passed the Andhra Pradesh Micro Finance Ordinance, which essentially terminated a substantial proportion of microfinance activity, mandated that all existing loans in violation of the terms of the ordinance must be refunded to the clients and included provisions which substantially retarded growth, such as the need for prior approval before the provision of loans to SHG members.¹¹² The ordinance did not require any changes to the SHG programs, showing clear bias. The state recently enacted additional regulations for NBFC-MFIs, including strict limitations on the size of the institution’s loans to Rs. 50,000 or approximately $1,000. Loans greater than Rs. 15,000 or $300 are required to have a tenure of at least two years.¹¹³ Due to the saturation of SHGs throughout the state and large client base, MFIs were forced to give up a substantial number of clients who also partook in SHGs. Thus, these MFIs faced enormous losses. For example, the Gross Loan Portfolio (GLP) of Spandana decreased by more than 30 per cent in the year following the crash. The GLP of SKS Microfinance Limited decreased by 75 per cent during the same period.¹¹⁴ The state was able to use its power to punish the MFIs and thereby diminish their competitiveness in the market.

These losses were likely exacerbated by the actions of the opposition party, the TDP. Specifically, Naidu blasted the government for not having instituted a regulatory authority to control the exploitative practices of MFIs, and insinuated that the government was permitting the MFIs to enjoy free reign.¹¹⁵ He also demanded that the government fulfill its promise to help women gain access to loans directly from banks at an interest rate of only three per cent, and called for the elimination of the SHG-MFI-Bank linkage. As
TDP struggled to rebuild its support base, Chandrababu Naidu urged MFI clients not to repay their loans. On the one hand, the TDP founded the Velugu project and likely had a vested interest in its success. On the other, Naidu manipulated the complaints against MFIs to criticize the government and praise his own party. Naidu juxtaposed such criticisms with an image of a pro-poor TDP. At a public meeting, for example, he stated “If MFI agents harass you for repayment, tie them up in a room and call the TDP workers for support”.

The two parties’ rhetoric reveals that both aimed to promote their respective political standings under the guise of welfare. As suggested by Taylor (2011), “the [Congress Party’s] actions were an attempt to use MFIs as a scapegoat for rural distress, not least because the expansive growth of MFIs was seen as a competitor to the state’s SHG programme”. The government likely wished to eliminate any factors that would have tainted Andhra Pradesh’s aggressively promoted and glorified image as the pioneer of development. The TDP similarly seemed to blame any trends that indicated slowed development or agrarian disillusionment on the Congress Party and MFIs, and portray itself as the true party of the economically disadvantaged and rural classes.

Yet rural distress has long existed in Andhra Pradesh, and does, in fact, indicate certain governmental failures. Hundreds of farmer suicides have been reported over the twenty years preceding the crisis in Andhra Pradesh. One of the first recorded spikes in such deaths occurred in 1987, when cotton farmers committed suicide due to crop losses and resultant financial burdens. Since then, farmer suicides have become a widespread problem in Andhra Pradesh. This history of farmer suicides suggests that the government’s neglect to focus on true development efforts may be at least partially at fault. Instead of providing handouts, the government could have theoretically protected farmers against price volatility or restructured and improved the
financial services available to this population.

It is likely that the government feared the implications of the highly publicized rural distress. This fear may have stemmed from the suicide epidemic that began in 1997 in Telangana. The Bharatiya Janata Party (BJP), in opposition to Naidu’s TDP, accused the government of failing to “provide extension services, to supervise quality control of seeds, fertilizers, pesticides and other inputs” due to the TDP’s emphasis on reforms over welfare. The BJP also suggested that the government’s response to the suicide epidemic was insufficient. The resultant negative publicity may have not only cost the TDP votes, but also weakened its image as a proponent of development.

Thus, MFIs served as a convenient scapegoat to divert the blame for farmer suicides away from the government. As stated earlier, the Society for Elimination of Rural Poverty (SERP) reported at least 54 “microfinance-related” deaths by October 2010. However, nowhere on its website does it define the term “microfinance-related.” The SERP’s full report, which includes descriptions of these deaths, was published online by Microfinance Focus, a microfinance news agency. Among these descriptions was one of a woman who “committed suicide by consuming pesticide. She is a SHG Member” who held both SHG and MFI loans. The report also includes such brief statements as “Rs 57000 was given as loan and committed suicide”. This description, similar to many others recorded, does not even attempt to establish causation. SERP also described farmers who allegedly committed suicide due to harassment by MFI officers. Yet the causes of death were often reported by family members of the deceased individual, and thus may have been shaped by the government’s rhetoric of microfinance criminality. Therefore, the government’s conclusion that the misconduct of MFIs was to blame for the spike in farmer suicides seems specious.

The government’s actions were consistent with the Congress Party’s previous efforts to gain the political support
of the rural population. The state’s history of providing unsustainable handouts to the poor condoned these politicians’ harsh and rash statements and actions without raising questions. After the 2004 election in which the TDP was defeated, the Congress Party instituted the welfare schemes it had promised in its campaigns. One of these promises was a declared “moratorium…on the recovery of farm debts”\textsuperscript{124} This essentially converted loans into grants. Similarly, during the crisis in 2006, the government convinced borrowers that MFIs were criminal and encouraged them to not repay their MFI loans. Rather, the government would absorb the loans and lower their interest rates\textsuperscript{125} The state government supported SHGs through \textit{pavala vaddi}, a performance-based subsidy of up to 75 per cent of the interest that the linked banks charged on their loans. The cumulative cost of this program from 2006-7 was approximately $15 million\textsuperscript{126} The initiative seems unsustainable, as the government essentially provides nearly interest free loans by paying for the banks’ transaction costs. This well-established trend in state-sponsored programs permitted politicians to implore clients to refuse repayment and thereby transform MFI loans into handouts during the MFI crisis of 2010, despite the fact that the funds were derived from private entities rather than the government.

The political structure of India’s banking system also exacerbated the crisis. The financial link between MFIs and banks begs the question of why the banks did not speak against the government’s clearly biased actions. The MFIs’ losses resulting from the legislation and defaults encouraged by politicians would have certainly resulted in bank losses. However, approximately 83 per cent of all banking in India is controlled by the government or nationalized banks. Even those banks that are not nationalized must comply with the state’s strict regulations\textsuperscript{127} The tight relationship between the banks and the government likely rendered protest against the new legislation politically risky. Had the banks challenged the government’s actions, the government could have easily
retaliated and imposed further restrictions on bank operations. Therefore, the unique image of Andhra Pradesh as the archetype of development, the government’s history of interference with the private sector and the extreme political competition between parties created a political environment hostile to MFIs.

CONTAINMENT OF CONTAGION: MICROFINANCE IN KARNATAKA

This discussion of the evolution of MFIs and subsequent crisis in Andhra Pradesh suggests that political factors were involved in the failure of microfinance in the state. However, whether politics was the driving force behind the crash may be further informed by the comparative analysis of microfinance in Andhra Pradesh as opposed to its neighboring state, Karnataka. After the crisis in October 2010, questions emerged of about whether defaults would rise and the crash would spread throughout the states surrounding Andhra Pradesh. As posited by Shankar and Asher (2010), “the interdependencies between group members in microfinance can lead to a different kind of contagion effect. Widespread defaults can occur either if some members start consistently defaulting or if there are rumours of MFI failures”. In other words, reports of MFI failures in Andhra Pradesh may have encouraged defaults in adjacent regions. Yet no evidence of an MFI crisis in Karnataka following that in Andhra Pradesh has been reported. This section aims to elucidate the differences between MFI operations in the two states.

The demographic, economic, and environmental descriptors of the neighboring states of Karnataka and Andhra Pradesh are comparable. While the total population of Karnataka is roughly 60 million, that of Andhra Pradesh is roughly 70 million. The rural populations of both states are over sixty percent. The literacy rates of Karnataka and Andhra Pradesh are approximately 76 percent and 68 per
Both states experience similar climates and are drought and flood prone. Moreover, the estimated MFI penetration in both states is similar, at approximately 5.3 percent in Karnataka and 7.0 percent in Andhra Pradesh. The aggregate growth rates of MFIs and SHGs over the period 2007-2010 were also comparable, at 129.1 percent and 126.5 percent for Karnataka and Andhra Pradesh, respectively.

Despite these similarities, the political systems of both states significantly differ. In Andhra Pradesh, politics are relatively volatile, characterized by the struggle between the Telugu Desam Party (TDP) and its primary opponent, the Congress Party, to win control of the government. The constituencies of these two parties are largely divided based on caste and socioeconomic status. In contrast, one party – the Congress Party, has generally dominated Karnataka’s state government. This political party relies on the joint support of both the dominant and weaker castes and ethnic groups. As a result, the governance of Karnataka appears far more unified, stable, and rational than that of Andhra Pradesh. Even when the opposition parties, the Janata Party and the Janata Dal, won control of the state government for short periods of time their constituents and ideologies did not dramatically deviate from those of the Congress Party.

Given the economic similarities between Karnataka and Andhra Pradesh and the higher continuity of government in Karnataka, the World Bank’s decision to focus on and publicize the development of Andhra Pradesh seems counterintuitive. The Bank’s preference for Andhra Pradesh seems primarily based on its own political agenda. This objective stems from the Bank’s inability to establish a strong foothold in Indian politics. Unlike other recipient countries, India retained a high level of autonomy from the World Bank with regards to policy design. The only manner in which the World Bank could push its agenda of liberalization and market efficiency was through state-based initiatives. Unlike in Andhra Pradesh, where the TDP allied
with the parties dominating the central government, the dominant Congress Party in Karnataka provided fewer opportunities for the Bank to increase its influence throughout the nation. Winning favor with Karnataka would not help the World Bank build a stronger presence in India. Moreover, Naidu’s dynamic personality and eager dialogue with the World Bank stood in stark contrast to J. H. Patel, Karnataka’s Chief Minister from 1996-1999, who appeared more hesitant to deal with the external agent. Hence, the Bank committed substantially higher funds to Andhra Pradesh than it did to its neighboring state.

Thus, Karnataka was able to focus on independently designed reforms. The World Bank had a relatively lower stake in its relationship with Karnataka and did not condone populist schemes as it had in Andhra Pradesh. Therefore, while the Bank inadvertently supported the legacy of welfare politics in Andhra Pradesh, it applied harsher standards of development toward Karnataka encouraged more legitimate economic reforms. Finally, because the policies pursued in Karnataka were not as widely publicized as those in Andhra Pradesh, the World Bank allowed the state to retain more autonomy in the ultimate design and implementation of reforms. The Bank’s comparatively low and discreet presence in Karnataka meant that the state’s government remained unfettered by any significant international image.

Additionally, Karnataka may be conceptualized as a cohesive multiclass state. Although the government’s political power derives from support across socioeconomic classes and castes, the convergence of their political interests allows social cohesion. Because of this relative unity, the Congress Party in Karnataka, unlike the parties in Andhra Pradesh, does not experience pressure to deploy welfare programs as a means to win votes. The Congress Party already enjoys general political monopoly and has no need to engage in competition with MFI’s. In contrast, Andhra Pradesh is a fragmented multi-party state and as a result has a complex relationship with the private sector that is
Accordingly, the relationship between MFIs and the government of Karnataka appears cordial, in contrast to the situation in Andhra Pradesh. This accordance does not suggest that the microfinance sector in Karnataka has always been highly regarded. According to Samit Ghosh, founder of the MFI Ujjivan Financial Services, the key factor that facilitated the success of MFIs in Karnataka was their ability to “[learn] from the setbacks in Ramanagaram and Kolar districts in 2009,” where credit bubbles burst. This is exhibited through the studies voluntarily conducted by the Association of Karnataka Microfinance Institutions (AKMI) immediately after the mini-crisises. One of the primary objectives of AKMI is to represent its members and engage in policy discussions with the government. As such, the association has repeatedly cooperated with the state government and organized meetings regarding the best practices in loan provision.

This collaboration may be partly attributed to the fact that the SHG movement in Karnataka was not as strong as the government-funded scheme in Andhra Pradesh. While the combined MFI and SHG penetration in Andhra Pradesh appears to exceed that of Karnataka, a large number of districts in Karnataka exhibit a higher MFI penetration than the districts of Andhra Pradesh. This pattern suggests that although the combined MFI and SHG growth rates are more or less equivalent across both states, Karnataka’s market was dominated by an expansion of MFIs while that of Andhra Pradesh was dominated by an expansion of SHGs. Over the period 2007-2010, the estimated MFI growth rate in Karnataka (approximately 61 per cent) significantly exceeded that of Andhra Pradesh (roughly 45 percent). The government’s emphasis on SHG growth in Andhra Pradesh is therefore apparent.

The cooperative relationship between MFIs and the state appears opposite to the competition that precipitated the crisis in Andhra Pradesh. According to Palekar (2007), “the
state leadership [of Karnataka] has always desired to resolve disputes through peaceful means rather than through the path of confrontation.” Indeed, the government did not pursue any drastic action following the local microcredit bubbles that formed in southern Karnataka, and instead permitted the MFIs to investigate the crises themselves. This contrasts the government of Andhra Pradesh’s response to the Krishna Crisis in 2005-2006. Perhaps as a result of the cooperation between the government and MFIs in Karnataka, after the local crises, AKMI drafted a Code of Conduct to which the members actually adhered. Therefore, in Karnataka, although MFIs faced similar growth challenges to those experienced in Andhra Pradesh, microfinance was compatible with the political system of the state.

In contrast, the hostility between the government and MFIs in Andhra Pradesh may have contributed to the MFIs’ lack of adherence to the Sa-Dhan Code of Conduct, similarly written after the Krishna Crisis. The MFIs were not only competing with each other, but also with the government’s SHGs. Thus, no true change in the practices of MFIs occurred after the crash. The fact that the state of Andhra Pradesh did not step in to restructure the rural financial systems suggests that the economic arguments and accusations against these institutions were not truly as salient as the political objectives of the government. The similarities between the Krishna Crisis of 2006 and the state-wide crises in 2010 imply that the latter could have been avoided through increased regulation. It seems, however, that the government of Andhra Pradesh was more preoccupied with completely shutting down microfinance than cooperatively addressing the economic challenges the industry faced. Therefore, in Andhra Pradesh, microfinance was incompatible with the political system of the state.
CONCLUSION: IMPLICATIONS AND THE WAY FORWARD

The microfinance crisis in Andhra Pradesh was a pivotal moment in the history of development assistance and poverty alleviation strategies. The apparent misconduct of for-profit microfinance institutions (MFIs) raised fundamental questions regarding the possibility of mission drift away from the original social motives to profit-driven growth. However, as shown through this paper, the events leading up to and following the crisis cannot be isolated as purely economic or exogenous processes. The main characteristic of Andhra Pradesh’s microfinance market that distinguished it from those around the world and triggered the crash was the political system in which it was embedded. Specifically, various political actors competed for control of development policies in attempt to augment their own power and influence within the state, nation, and world.

The manifestation of the power struggle in the microfinance industry may be traced to the classification of India and Andhra Pradesh as fragmented multi-class states. In such a developing state, political parties at the national and state level must design sufficiently broad agendas and policies to elicit political support across the country’s innumerable ethnic and socioeconomic factions. This requirement has resulted in dualistic policies, whereby political leaders simultaneously establish populist programs and development or reform initiatives.

The poverty and divisions prevalent throughout India increased the vulnerability of its political structure to clientelism. In Andhra Pradesh, state-sponsored welfare schemes and self-help groups (SHGs) may be conceptualized as clientelist programs that political parties have constructed to gain the rural vote. Yet the success of clientelism depends on the patron’s monopoly over the good provisioned.
Congress Party and Telugu Desam Party have actively attempted to undermine their rivals’ ownership of welfare programs. The introduction of microfinance to this volatile environment threatened the political power of the ruling parties, as the patrons no longer retained monopoly over the clientelist goods, which were, in this case, financial services offered to the poor.

The resultant competition between MFIs and the government challenged not only the political actors’ influence at the state-level, but also their international clout. The World Bank’s targeted elevation of Andhra Pradesh as the poster child of reform and development increased the importance placed on the state government’s reputation. That MFIs were able to undermine the operations of the government fueled the animosity between private MFIs and the state government. Thus, the state interfered in a manner consistent with its history of state-led development and heavy regulations, and pursued harsh actions that essentially shut down the industry.

The dynamics of the political system in Andhra Pradesh thus cumulatively presented not only a unique environment that precipitated the microfinance crisis, but also the conditions necessary to ultimately design an appropriate regulatory mechanism. Following the crash, the international reputation of Andhra Pradesh rapidly deteriorated as scholars questioned the aptness of the state government’s actions toward MFIs. If the government wishes to maintain its political clout, it will likely pursue actions that reinforce the culpability of the MFIs and its own image as an apolitical regulator. Thus, it is likely that the government will adhere to the advice of the international community and construct regulatory mechanisms that, to a certain extent, increase the transparency of MFI operations, improve their integration with the financial sector, and display a certain level of forgiveness. Indeed, the Microfinance Institutions (Development and Regulation) Bill was introduced at the national level in March 2012. If passed, this bill will override
the Andhra Pradesh Microfinance Ordinance of 2010, establish the Reserve Bank of India as the centralized regulator of MFI operations, and financially rescue some of the MFIs, including SKS, which suffered after the Andhra Pradesh crisis. Because the national government is not hindered by the political undercurrents in Andhra Pradesh, it is likely that this bill will, in some form, be signed into law.

Therefore, while the microfinance crisis in Andhra Pradesh certainly alarmed the international community, the fact that the events were primarily triggered by political rather than economic factors does not support the blanket denunciation of for-profit MFIs.

Endnotes

1 Lydia Polgreen and Vikas Bajaj, “India Microcredit Sector Faces Collapse From Defaults.”
2 Biswas, “India’s micro-finance suicide epidemic.”
3 Yoolim Lee and Ruth David, “Suicides in India Revealing How Men Made a Mess of Microcredit.”
4 Ibid.
5 Elisabeth Rhyne, “On Microfinance: Who’s to Blame for the Crisis in Andhra Pradesh?”
6 Biswas, “India’s micro-finance suicide epidemic.”
7 Elisabeth Rhyne, “On Microfinance: Who’s to Blame for the Crisis in Andhra Pradesh?”
8 Marcus Taylor, “‘Freedom from Poverty is Not for Free’: Rural Development and the Microfinance Crisis in Andhra Pradesh, India.”
9 Chakrabarti and Ravi, “At the Crossroads: Microfinance in India.”
10 M Yunus, Creating a World Without Poverty: Social Business and the Future of Capitalism. p. 68
11 “Report of the Sub-Committee of the Central Board of Reserve Bank of India to Study Issues and Concerns in the MFI Sector.”
12 Chakrabarti and Ravi, “At the Crossroads: Microfinance in India.”
14 “About Us.”
15 “Our Approach: Our Journey.”
16 “Financial Info.”
17 Dealbook, “SKS I.P.O. Ignites Microfinance Debate - NYTimes.com.”
18 Ibid.
19 Lydia Polgreen and Vikas Bajaj, “India Microcredit Sector Faces Collapse From Defaults.”
20 Champatiray and Agarwal, “CMF | Map of Microfinance.”
222  Yerramilli • Politics of Microfinance Crisis

24 Marcus Taylor, “‘Freedom from Poverty is Not for Free’: Rural Development and the Microfinance Crisis in Andhra Pradesh, India.”
25 Ibid. p. 490
26 Ibid.
27 Ibid.
28 Bellman, “In Microfinance, it Feels Like the Dot-Com Boom.”
29 Biswas, “India’s micro-finance suicide epidemic.”
30 Ibid.
31 Ibid.
32 Atul Kohli, “Introduction: States and Industrialization in the Global Periphery.” p. 20
33 Atul Kohli, “Introduction: States and Industrialization in the Global Periphery.” p. 20
34 Sayuri Shirai, “Assessment of India’s Banking Sector Reforms from the Perspective of the Governance of the Banking System.” p. 100
35 Ana Marr and Paola Tubaro, “Crisis in Indian microfinance and a way forward: Governance reforms and the Tamil Nadu model.” p. 3
36 “Schemes & Services: Banking & Credit - Regional Rural Banks.”
37 The National Bank for Agriculture and Rural Development Act.
38 Sa-Dhan Microfinance Resource Centre, “Existing Legal and Regulatory Framework for the Microfinance Institutions in India: Challenges and Implications.”
39 “Background and Introduction for Micro.”
40 Ana Marr and Paola Tubaro, “Crisis in Indian microfinance and a way forward: Governance reforms and the Tamil Nadu model.”
41 Sa-Dhan Microfinance Resource Centre, “Existing Legal and Regulatory Framework for the Microfinance Institutions in India: Challenges and Implications.”
42 Ibid.
43 Societies Registration Act.
44 Indian Trusts Act.
45 Companies Act.
46 Ibid.
47 Societies Registration Act.
48 Indian Trusts Act.
49 Companies Act.
50 The National Bank for Agriculture and Rural Development Act.
51 Ibid.
52 “Introduction of New Category of NBFCs - ‘Non Banking Financial Company-Micro Finance Institutions’ (NBFC-MFIs).”
53 “Introduction of New Category of NBFCs - ‘Non Banking Financial Company-Micro Finance Institutions’ (NBFC-MFIs).”
54 “Introduction of New Category of NBFCs - ‘Non Banking Financial Company-Micro Finance Institutions’ (NBFC-MFIs).”
55 “Introduction of New Category of NBFCs - ‘Non Banking Financial Company-Micro Finance Institutions’ (NBFC-MFIs).”
56 The National Bank for Agriculture and Rural Development Act.
57 “Introduction of New Category of NBFCs - ‘Non Banking Financial Company-Micro Finance Institutions’ (NBFC-MFIs).”
59 Escobar, “Regulation of Microcredit in Bolivia.”
60 Chibber, “The Demobilization of the Labor Movement.” p. 200
61 K Srinivasulu and Prakash Sarangi, “Political Realignments in Post-NTR Andhra Pradesh.” p. 2449
62 Atul Kohli, “The NTR Phenomenon in Andhra Pradesh.”
63 Ibid.
64 K Srinivasulu and Prakash Sarangi, “Political Realignments in Post-NTR Andhra Pradesh.”
65 K Srinivasulu and Prakash Sarangi, “Political Realignments in Post-NTR Andhra Pradesh.”
67 Jos Mooij, “Hype, Skill and Class: The Politics of Reform in Andhra Pradesh, India.” p. 44
69 Bardhan and Mookherjee, “Political Clientelism and Capture: Theory and Evidence from West Bengal.” p. 2
70 Jason A. Kirk, “Banking on India’s States: The Politics of World Bank Reform Programs in Andhra Pradesh and Karnataka.” p. 295
71 James Manor, “Successful Governance Reforms in Two Indian States: Karnataka and Andhra Pradesh.”
72 “Andhra Pradesh Population Census data 2011.”
73 Jos Mooij, “Hype, Skill and Class: The Politics of Reform in Andhra Pradesh, India.”
74 Cole, Healy, and Werker, “Do Voters Demand Responsive Governments? Evidence from Indian Disaster Relief.”
75 Ibid.
79 Jos Mooij, “Hype, Skill and Class: The Politics of Reform in Andhra Pradesh, India.”
80 Ibid.
81 Luis Fernando Medina and Susan Stokes, “Clientelism as Political Monopoly.” p. 3
82 “No World Bank diktat, says Rajasekhara Reddy.”
83 Bardhan and Mookherjee, “Political Clientelism and Capture: Theory and Evidence from West Bengal.”
85 Harper, “Promotion of Self Help Groups under the SHG Bank Linkage Programme in India.” p. 4
87 “Report of the Sub-Committee of the Central Board of Reserve Bank of India to Study Issues and Concerns in the MFI Sector.”
88 Lin Lerpold, “The contextualization of a microfinance model: From India to South Africa.”
89 Ajay Tankha, “Self-help Groups as Financial Intermediaries in India: Cost of Promotion, Sustainability and Impact.”
90 Ibid.
Harper, “Promotion of Self Help Groups under the SHG Bank Linkage Programme in India.”
Ibid.
Chakrabarti and Ravi, “At the Crossroads: Microfinance in India.”
James Manor, “Successful Governance Reforms in Two Indian States: Karnataka and Andhra Pradesh.”
“Schemes: Velugu.”
“Women’s Empowerment in Andhra Pradesh.”
Indira Kranthi Padham.”
H. S. Shylendra, “Microfinance Institutions in Andhra Pradesh: Crisis and Diagnosis.” p. 1963
Ibid.
Ibid.
Luis Fernando Medina and Susan Stokes, “Clientelism as Political Monopoly.” p. 5
Ibid. p. 5
“Rs. 900-crore World Bank loan for Andhra Pradesh,” 900.
Ibid. p. 15
Chakrabarti and Ravi, “At the Crossroads: Microfinance in India.” p. 15
Jordi de la Torre, Xavier Gine, and Tara Vishvanath, “After the microfinance crisis: assessing the role of government-led microcredit alternatives.” p. 4
Andhra Pradesh Micro Finance Institutions Ordinance.
“Introduction of New Category of NBFCs - ‘Non Banking Financial Company-Micro Finance Institutions’ (NBFC-MFIs).”
“Profiles & Reports | MIX Market.”
“Don’t repay microfinance loans: TDP.”
Ibid.
Marcus Taylor, “‘Freedom from Poverty is Not for Free’: Rural Development and the Microfinance Crisis in Andhra Pradesh, India.” p. 491
K Srinivasulu and Prakash Sarangi, “Political Realignments in Post-NTR Andhra Pradesh.” p. 24560
Ibid.
“Exclusive: 54 microfinance-related suicides in AP, says SERP Report.”
Ibid.
Ibid.
Banerjee, Cole, and Duflo, “Banking Reform in India.”
“Karnataka Population Census data 2011.”
Andhra Pradesh Population Census data 2011.”
131 Habib Beary, “Floods kill 200 in Andhra, Karnataka; thousands affected.”
132 Champatiray and Agarwal, “CMF | Map of Microfinance.”
133 Ibid.
137 Jason A. Kirk, “Banking on India’s States: The Politics of World Bank Reform Programs in Andhra Pradesh and Karnataka.”
138 Ibid.
139 Ibid.
140 Atul Kohli, “Introduction: States and Industrialization in the Global Periphery.”
141 Ibid. p. 14
142 Subir Roy, “When geography is not history.”
143 AKMI, Karuna Krishnaswamy, and Alejandro Ponce, “Competition & the Role of External Agents: The 2009 delinquency crisis in southern Karnataka.”
144 Subir Roy, “When geography is not history.”
145 Champatiray and Agarwal, “CMF | Map of Microfinance.”
146 Ibid.
147 S. A. Palekar, “Office of the Chief Minister.”
148 Subir Roy, “When geography is not history.”
149 Atul Kohli, “Introduction: States and Industrialization in the Global Periphery.”
150 Ibid.
151 Bardhan and Mookherjee, “Political Clientelism and Capture: Theory and Evidence from West Bengal.”
152 Luis Fernando Medina and Susan Stokes, “Clientelism as Political Monopoly.”
153 E Kumar Sharma, “Budget 2012: Microfinance Bill to be tabled in Budget session.”
154 “Budget 2012: Microfinance Bill will help SKS recover Rs 800 cr in Andhra Pradesh.” p. 62