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INDUSTRY AND HOUSING  
SUPPLY IN SAN JOSE, CA**

**ESSAY: CORPORATE  
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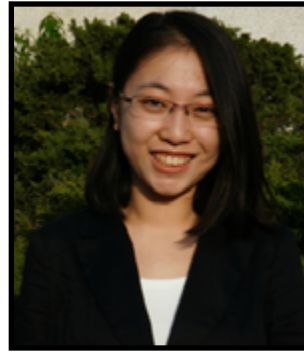
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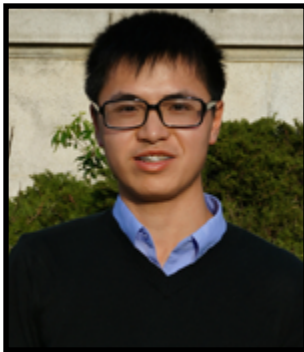
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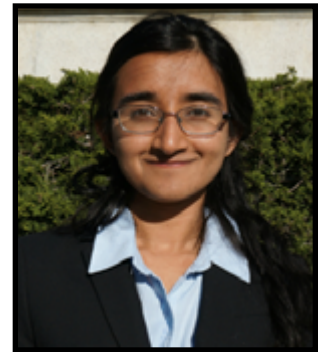
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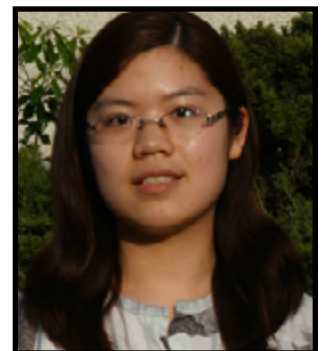
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# LETTER FROM THE EDITORS

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Dear Readers,

We are proud to present the very first issue of The Undergraduate Berkeley Economics Review, which is also the first peer-reviewed undergraduate economics publication at UC Berkeley. Launched in 2016 with support from the Undergraduate Economics Association and the Department of Economics, UBER aims to present the best undergraduate research papers, stimulate dialogue on various economic topics, and strengthen the relationships between students and faculty.

In this Spring 2016 issue, we present two research papers and three essays on diverse topics. We want to thank each author for submitting his or her work to the Review. In addition to the excellent student submissions, we are honored to publish three interviews with Berkeley faculty members Edward Miguel, David Romer, and Raymond Hawkins.

This project would never have happened without the tireless dedication and commitment of our staff, who put in so many hours to recruit, edit, and design the contents of this publication. Our peer reviewers provided critical, timely feedback on the submissions, all on a voluntary basis.

We have so much gratitude for each and every person who supported and contributed to this project, from our staff, to our peer reviewers, to authors, professors, the Undergraduate Economics Association, and the Economics Department. Thank you all so much for taking a chance on us.

Finally, we want to encourage readers to submit papers, essays, and thesis for our next volume! We will be accepting submissions for the Fall 2016 issue starting from June 1, 2016. We look forward to hearing from you!

Sudeshna Barman  
Haowen Wu  
Co-Editors

# Gold, Trust, and Political Attitudes: Evidence from Ghana

Roxanne Rahnama  
Undergraduate Honors Thesis  
May 2015  
Advisor: Professor Edward Miguel

Environmental Economics and Policy  
College of Natural Resources  
University of California, Berkeley

## Abstract

In this paper, I analyze how trust levels and political engagement change in local mining communities. This study focuses on Ghana and uses a self-constructed dataset of geocoded mining and Afrobarometer data combined with a spatial difference-in-difference analysis to estimate changes in political attitudes among individuals who live within a 20-kilometer radius from an active gold mine, compared with individuals who live beyond 20 kilometers. The results suggest that the individuals living close to an active mine are more likely to discuss politics, attend community meetings, and meet with others to raise issues, and have a lower tendency to trust the Ghanaian parliament and local assemblymen and women. In particular, survey respondents are 36.8 percent more likely to discuss politics and 33 percent less likely to trust the parliament, at a 99 percent confidence level. If data on migration and community expectations of mining projects becomes available, it is recommended that future researchers explore how these factors potentially serve as the mechanisms behind this phenomenon.

**Acknowledgments:** I would like to thank my incredible advisor, Professor Edward Miguel, for his invaluable mentorship both on this honors thesis and over the past three years. In addition, I would like to express the utmost gratitude to Matt Lowe and Omar Garcia-Ponce for sharing their geo-coded Afrobarometer data, to Patty Frontiera in the ArcGIS Data Lab, to Kwabena Donkor, and lastly to the generous and brilliant Anja Tolonen, without whom this project would not be possible.

# 1 Introduction

Africa is endowed with the largest reserve of mineral resources in the world and, in 2012, received 15 percent of global exploration and mining investment (KPMG, 2013). The export-oriented mining sector in Africa continues to burgeon, with gold as the main mineral resource. While there is a growth of empirical literature on the relationships between conflict and natural resources (Lei and Michaels, 2011; Dube and Vargas, 2013; Humphreys, 2005; Aragon and Rud, 2015; De Luca et al, 2013; Berman et al, 2014) and the welfare effects of mining (Aragon and Rud, 2015; Kotsadam and Tolonen, 2013; Tolonen, 2014; Chuhan-Pole et al, 2015), the psychological and social effects of mineral resources on political attitudes have been left unexplored. This paper is a detailed country case study on the multinational gold mining sector in Ghana and sheds light on the linkages between mining, trust and political engagement in local mining communities. In doing so, this study contributes to the existing literature on trust (Algan and Cahuc, 2010; Rohner et al, 2013; Garcia-Ponce et al, 2013; Nunn and Wantchekon, 2011; Garvin et al, 2009; Hilson et al, 2005; Fisher et al, 2013; Lowe, 2014) and local collective action (Bellows and Miguel, 2009; Blattman, 2009; Adhvaryu et al, 2013).

This paper combines geocoded data on 16 industrial gold mines from IntierraRMG and political attitudes data from Afrobarometer (Rounds 1-4) to conduct an individual-level difference-in-differences analysis, using a spatial econometric methodology developed by Tolonen (2014). The key political engagement outcome variables include *discussion of politics*, *attendance at community meetings*, and the likelihood to *raise issues*. Additionally, the main trust outcome variables are *trust in parliament* and *trust in local assembly*. Using a linear probability model, with year and district fixed-effects, I find that living within a 20 kilometer radius from an active mine has a significant positive effect on individuals' propensity to discuss politics and a significant negative effect on individuals' likelihood to trust the Ghanaian parliament.

The remainder of this paper is organized as follows: Section 2 presents a literature review and background information on gold mining in Ghana; Section 3 describes the datasets used and

econometric methodology; Section 4 presents the results and interprets the findings; and Section 5 concludes. Further regressions and data descriptions are delineated in the Appendix Section.

## **2 Background**

### **2.1 Literature Review**

While many countries in Africa house an abundance of natural resources, the wealth of the natural landscape most often lies paradoxically in the backdrop of extreme human deprivation, poverty, and often, conflict (Collier and Hoeffler, 2005). As the mining sector continues to expand rapidly throughout resource-rich African nations (World Bank, 2011) and decentralized natural resource management policies take hold (Ribot, 2003), there is a greater need to further investigate its uncertain and heterogeneous effects on economic growth and human development (Gajigo et al, 2012). Using geographically-dispersed gold mining in Ghana as a micro-study, this paper draws from existing literature on resources, conflict, political attitudes, growth, and the role of community expectations to explore the new question: What effect does the expansion of mining activities have on political engagement and trust?

#### **2.1.1 Resources, Conflict and Political Engagement**

There has been a growth of interest in the last decade in empirical research on the link between conflict and natural resources, including oil (Lei and Michaels, 2011; Dube and Vargas, 2013), diamonds (Humphreys, 2005), and other major minerals (Aragon and Rud, 2015; De Luca et al, 2013; Berman et al, 2014). Diverse case studies provide well-documented evidence of the “resource curse,” in which low levels of income and heavy reliance on primary commodities can enable susceptibility to economic shocks, which is further linked to rebellion and civil war (Collier and Hoeffler, 2005; Miguel et al, 2004). For example, Berman et al (2014) find that “mining not only increases the scope for localized protests and riots, but it also systematically fuels larger-scale battles.”

Similarly, numerous researchers have also begun to increasingly examine the empirical relationship between legacies of conflict and political engagement in different African countries.



While Adhvaryu et al (2013) find negligible effects of early-life war exposure on later-life political activism throughout Africa, Bellows and Miguel (2009) and Blattman (2009) find that war victimization results in a greater likelihood of political engagement and participation in local collective action in Sierra Leone and Uganda, respectively. Congruently, in a social anthropological study on mining and democratization in Tanzania, Fisher et al (2013) detail the pivotal political significance of small-scale artisanal gold mining and collective action in the context of the present growth of mineral extraction in the overall continent:

....Shared experiences provide miners with both a collective identity and a communal identity that impacts a sense of purpose and cohesion, which they are likely to draw on when they confront problems necessitating negotiation or prompting retaliatory action vis-à-vis external non-mining institutions...The collective identity of miners imparts confidence and strength, vital for struggles against predatory states and exploitative markets. Miners are likely to demand their rights as a collective (Fisher et al, 2013).

A key contribution of this paper is the attempt to empirically understand the psychological and social linkages between mineral resources and political engagement, adding to the growing research on determinants of political mobilization (Bellows and Miguel, 2009). These linkages are important to investigate in the context of the current United Nations Post-2015 Development Agenda, which prioritizes inclusivity and environmental and resource issues. Considering the anecdotal evidence that African governments have generally failed to establish democratic decentralization of natural resources (Ribot, 2003; Poteete, 2013) and that resource rich states often rely on systems of undemocratic patronage politics (Collier and Hoeffler, 2005; Gajigo et al, 2012), there is a need to question the ways in which this evidence manifests itself in the relationship between resources and political activism.

### **2.1.1 Trust, Expectations and Economic Development**

This paper further adds to the growing literature of cases studies on trust as a key element of economic development (Algan and Cahuc, 2010; Rohner et al, 2013). In anthropological studies on gold mining in Ghana, researchers have found that inflated community expectations of government and businesses often coincide with disillusionment and lack of trust and confidence (Garvin et al, 2009; Hilson et al, 2005; Fisher et al, 2013):

Community members reported that issues of royalties fueled their high expectations – royalties are paid by the companies directly to central government and little of these royalties ‘trickle down’ to the affected

communities...Both community members and company representatives reported being disappointed and disillusioned by the actions and behaviors of the other party. Interestingly, community members and company interviewees also implicated the central and district governments as carrying some responsibility for negative impact (Garvin et al, 2009)

Since the launch of the Structural Adjustment Program, the Ghanaian government has tended to favor the awarding of land concessions to large-scale mining and mineral exploration companies...Between 1990 and 1998, the company [Teberebie Goldfields] uprooted some 30,000 farmers from 14 mining villages to accommodate its mining operations – the people now blame the government of Ghana and contend that the government does nothing to protect people like them from large companies who want their land (Hilson et al, 2005).

Lowe (2014) finds evidence similar to the anecdotes reported above in an empirical study on the impact of railway privatization in Sub-Saharan Africa, in which private operators tended to disappoint governments' high initial expectations and views toward government worsened where privatization occurred. In a parallel way, such findings relate to a set of results in the seminal Nunn and Wantchekon (2011) study on trust and the slave trade in Africa. Nunn and Wantchekon discuss how the history of chiefs selling their own people into slavery may have provoked the legacy of modern-day mistrust in political figures, in particular local figures. A question in the 1999 Afrobarometer survey for Ghana, which asks, "The government should retain ownership of its factories, businesses and firms (A- agree, B-disagree). Is it better for the government to sell its businesses to private companies and individuals?" provides basic support for some of the findings described in the papers above: over 2/3 agreed that the government should retain ownership (Afrobarometer, 1999).

The negative legacy of trust, perceptions of freedom, and civilian attitudes toward government actors resulting from violence and human suppression (Garcia-Ponce et al, 2013) have important implications for economic growth and development. Numerous studies have explored different aspects of the relationship between trust, "social capital," growth, and market participation (Cassar et al, 2013; Algan and Cahuc, 2010; Algan and Cahuc, 2009; Rohner et al, 2013; Giuliano and Spilimbergo, 2009), finding strong links between higher trust and positive development outcomes. These findings are in line with the theory of growth in the neoclassical Solow model, in which trustworthy institutions with lower levels of corruptions can be considered an integral factor in the technology that drives long-run growth (Miguel, Economics 174, 2013).

In addition to examining the relationship between mining and political engagement, I aim to develop an empirical understanding of a small aspect of the complex inter-linkages between community expectations and trust, as it pertains to gold mining in Ghana. An analysis of these seemingly diverse, yet intricately connected relationships, is valuable for the creation of environmental and social policies that promote not only economic development, but also ultimately, freedom and democracy.

## **2.2 Gold Mining in Ghana**

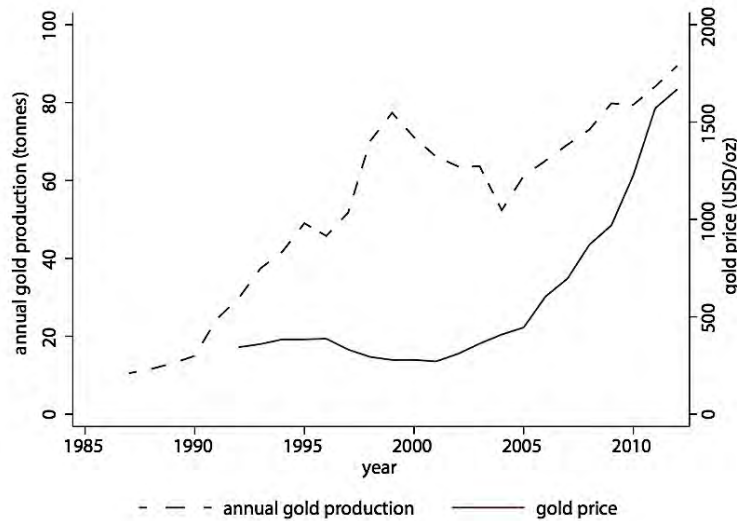
Ghana, which is the second largest producer of gold in Africa, has undergone a rapid expansion of annual production in the last 20 years, in which there has been a 700 percent increase in annual gold production since 1985, as shown in Figure 1. The mineral sector overall has experienced an average annual growth rate of 12 percent between 1990 and 2009 (Gajigo et al, 2012). Mineral exports account for 44 percent of the country's total exports (IMF, 2011) and gold, in particular, makes up 95 percent of mineral revenues (Ayee et al, 2011). In 2010, approximately 20,000 Ghanaian nationals were directly employed in large-scale mining, 6000 in providing services to the mineral sector, and 500,000 in small-scale artisanal mining (Bermudez-Lugo, 2010).

Despite recent growth, Ghana experienced deteriorating performance in the gold sector in the 1980s, likely due to stagnant gold prices and loss-making state-owned mining companies. This weak performance resulted in a number of structural adjustment policies, which set forth diverse reforms in the existing mining codes to create a more attractive private investment environment in the mineral sector, including lowering the range of royalty rates from 3-12% to 3-6% and further reducing the corporate income tax to 25 percent (Gajigo et al, 2012). While the massive growth in the gold sector points at positive effects of these reforms, there is nonetheless evidence of significant challenges in the sector. For example, an Extractive Industries Transparency Initiative (EITI) study found that all companies operating in Ghana paid only the minimum royalty of 3% (out of a range of 3-6%) and Stürmer (2010) describes the problem of mis-invoicing in Ghana, in which mining companies report lower-than-market gold prices to the government, resulting in lower royalties and income tax revenues to the government. Furthermore, since the launch of the SAP, the government

of Ghana has predominantly prioritized awarding land concessions to large-scale mining companies, making it ever more difficult for small-scale artisanal miners to legally obtain productive land (Hilson et al, 2005). The competing interests of the large-scale and small-scale gold mining sector, which employs far more Ghanaians, can sometimes lead to conflict (Hilson and Yakovleva, 2007).

The recent substantial expansion of the gold mining sector in Ghana presents an opportunity to explore the potential political and trust-related consequences of mining that are discussed in this paper. While this analysis pertains to large-scale mining, there is an understanding that there may be a geographical correlation between small and large-scale mining operations (Chuhan-Pole et al, 2015). If data on small-scale mines becomes available in the future, the separated effects of small and large-scale mining would be an interesting research endeavor.

Figure 1: World Price of Gold and Ghana's Annual Gold Production (Chuhan-Pole et al, 2015)



### 3 Econometric Analysis

#### 3.1 Data

The econometric analysis in this paper involves a combination of mining and political attitudes data with a spatial analysis methodology developed by Tolonen (2014). The main source of political attitudes data derives from a dataset called Afrobarometer, detailed under section 3.1.1. The geo-coded mining dataset that is linked to the individual-level geo-coded Afrobarometer data is called IntierraRMG, further described under section 3.1.2 and shown in Figure 2. Latitude and

longitude points for both datasets allow me to match individuals in Afrobarometer surveys to mines, by calculating different distance ranges from geo-coded mine locations to surveyed individuals. The main analysis uses concentric circles with a cut-off of 20 km radii, under the assumption that there are minimal economic effects beyond this distance (Chuhan-Pole et al, 2015). To assess any potential spatial heterogeneity, I also use varying cut-off distances (30, 40, and 50 km).

Figure 2: Gold Mines and Afrobarometer Households



Figure 2 shows the distribution of gold mines (triangles) and households (circles)

### 3.1.1 Afrobarometer Data

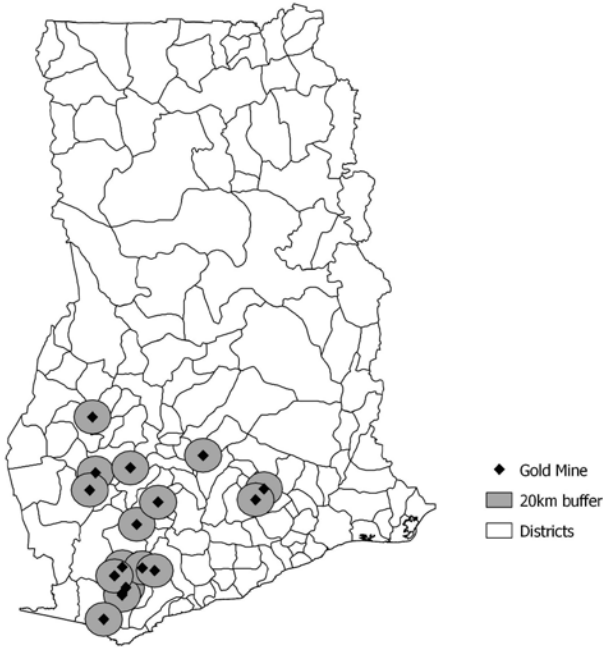
My data largely derives from the first four rounds (1999, 2002, 2005 and 2008) of Afrobarometer surveys for Ghana, for which there are geocoded identifiers. Afrobarometer is an independent, cross-national research project that tracks trends in public attitudes in comparative surveys over years and 35 African countries. Samples are randomly selected in such a way to provide a representative cross-section of all citizens of voting age in a given country and are “stratified by key social characteristics in the population, such as sub-national area (region/province) and residential locality (urban/rural)” (Afrobarometer, 2014). The total Ghana dataset includes 5552 observations (49.34% male, 50.66% female), age 18-110 from 10 regions. The geo-coordinates for observations in survey rounds 1-4 in Ghana are of varying precision: for round 1, the geocodes

represent the centroid of the district, while for rounds 2-4, the coordinates represent the centroid of the sub-district, town or even village (Lowe, 2014; Garcia-Ponce et al, 2013).

The validity of this dataset is supported by numerous papers, which have utilized Afrobarometer data to explore a diverse range of questions, from measuring voting patterns (Barkan et al, 2006) to political participation (Adhvaryu et al, 2013), knowledge (Mattes and Bratton, 2007), views toward government (Lowe, 2014) and trust (Nunn and Wantchekon, 2011; Rohner et al, 2013).

Figure 3: Gold Mines and Afrobarometer Household Clusters in Ghana

a. Gold minds and 20 km buffer zones



b. Gold mines, Afrobarometer Clusters and 100 km buffer zones

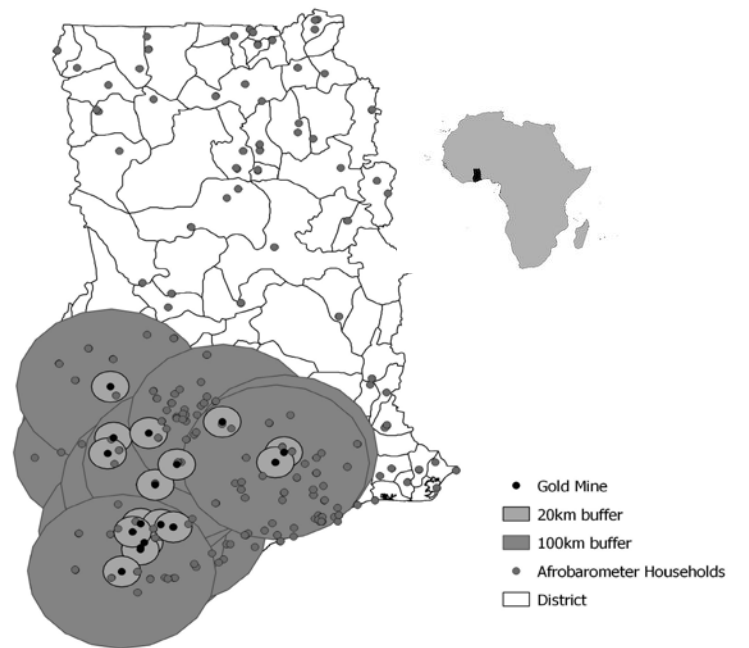


Figure 3a shows the gold mines that are considered in the study, each marked by circular areas with a 20 km diameter. These buffer zones signify the baseline treatment areas in the difference-in-difference analysis. Figure 3b shows 100km buffer zones and includes Afrobarometer household clusters.

### 3.1.2 Mining Data

The Raw Materials Data (RMS) comes from IntierraRMG (InterraRMD, 2012) and contains information on the location of large-scale mining companies around the world, usually operated by multinationals or the national government, since 1980. The dataset further contains information on whether mines are active or not and annual production volumes for different minerals (Berman et al,

2014). Satellite imagery from Mine-Atlas was used to locate geo-coordinates for mines, in order to verify mine boundaries and centroids (Chuhan-Pole et al, 2015).

There are 16 industrial gold mines for this micro-study on Ghana, which have been tracked from 1990 to 2012. Table 1 shows active mining companies in Ghana, in addition to opening and closing years, and the country from which the mining company originates.

Table 1: Gold Mines in Ghana

Name	Opening Year	Closing Year	Company	Country
Ahafo	2006	<i>active</i>	Newmont Mining Corp.	USA
Bibiani	1998	<i>active</i>	Noble Mineral Resources	Australia
Bogoso Prestea	1990	<i>active</i>	Golden Star Resources	USA
Chirano	2005	<i>active</i>	Kinross Gold	Canada
Damang	1997	<i>active</i>	Gold Fields Ghana Ltd.	South Africa
Edikan (Ayanfuri)	1994	<i>active</i>	Perseus Mining	Australia
Iduapriem	1992	<i>active</i>	AngloGold Ashanti	South Africa
Jeni (Bonte)	1998	2003	Akrokeri-Ashanti	Canada
Konongo	1990	<i>active</i>	LionGold Corp.	Singapore
Kwabeng	1990	1993	Akrokeri-Ashanti	Canada
Obotan	1997	2001	PMI Gold	Canada
Obuasi	1990	<i>active</i>	AngloGold Ashanti	South Africa
Prestea Sankofa	1990	2001	AngloGold Ashanti	South Africa
Tarkwa	1990	<i>active</i>	Gold Fields Ghana Ltd.	South Africa
Teberebie	1990	2005	AngloGold Ashanti	South Africa
Wassa	1990	<i>active</i>	Golden Star Resources	USA

This data comes from IntierraRMG and (Chuhan-Pole et al, 2015). All mines are 100% controlled by the listed country, except for Prestea Sankofa, which is 56% controlled by South Africa.

## 3.2 Main Variables

The main dependent, independent and control variables, drawn from Afrobarometer and the Raw Materials Data are further explained in the following sections.

### Dependent Variables

#### A. Political Engagement

Drawing from a number of empirical (Bellows and Miguel, 2009; Adhvaryu et al, 2013; Mattes et al, 2007) and anecdotal (Ribot, 2003; Fisher et al, 2013) studies on political engagement and local collective action, I consider the following set of questions from Afrobarometer rounds 1-4 to construct binary variables at the individual level:

*Discussion of politics:* “When you get together with your friends or family, would you say you discuss political matters?” The variable takes the value of one if the respondent answers either “Occasionally/Sometimes” or “Frequently/Often” and zero otherwise.<sup>1</sup>

*Attendance at community meetings:* “Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year – attended a community meeting?” The variable takes the value of one if the respondent answers either “Yes, once or twice/Only once,” “Yes, several times/Sometimes” or “Yes, often/Often,” and zero otherwise.<sup>2</sup>

*Raising issues:* “Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year – got together with others to raise an issue?” The variable takes the value of one if the respondent answers either “Yes, once or twice/Only once,” “Yes, several times/Sometimes” or “Yes, often/Often,” and zero otherwise.<sup>3</sup>

## **B. Trust**

Drawing from a variety of empirical (Nunn and Wantchekon, 2011; Mattes and Bratton, 2007; Garcia-Ponce et al, 2013; Cassar et al, 2013; Algan and Cahuc, 2010; Rohner et al, 2013; Giuliano and Spilimbergo, 2009) and anecdotal (Garvin et al, 2009; Hilson et al, 2005; Fisher et al, 2013) papers in the growing literature on trust and expectations, I consider the following set of questions from Afrobarometer rounds 1-4 to construct binary variables at the individual level:

*Trust in parliament:* “How much do you trust each of the following, or haven’t you heard enough about them to say: The Parliament?” The variable takes the value of one if the respondent answers either “Somewhat” or “A lot” and zero otherwise.<sup>4</sup>

*Trust in local assembly:* “How much do you trust each of the following, or haven’t you heard enough about them to say: Your assemblymen/women?” The variable takes the value of one if the respondent answers either “Somewhat” or “A lot” and zero otherwise.<sup>5</sup>

<sup>1</sup> Q6 in round 1, Q25A in round 2, Q17 in round 3, Q14 in round 4

<sup>2</sup> Q67A in round 1, Q25B in round 2, Q31A in round 3, Q23A in round 4

<sup>3</sup> Q67B in round 1, Q25C in round 2, Q31B in round 3, Q23B in round 4

<sup>4</sup> Q34G in round 1, Q43B in round 2, Q55B in round 3, Q49B in round 4

<sup>5</sup> Q34B in round 1, Q43E in round 2, Q55D in round 3, Q49D in round 4



## Independent Variables

I use the Afrobarometer dataset to construct an indicator variable for whether the respondent lives within a 20 kilometers radius from an active mine. Similarly, I utilize the RMD mining data to create an indicator variable that is equal to 1 if a mine is active at the time of the Afrobarometer survey and an interaction term between the indicator for active mines and the indicator for whether a respondent lives close to an active mine (Berman et al, 2014; Chuhan-Pole et al, 2015; Tolonen, 2014).

## Main Control Variables

I control for living in an urban or rural area, education, age, and gender (Nunn et al, 2011; Lowe, 2014; Chuhan-Pole et al, 2015) in the varying regressions.<sup>6</sup> The inclusion of district-fixed effects will allow me to partial out time-invariant characteristics that affect political attitudes and the activity of mines, such as institutional or cultural factors.

### 3.3 Empirical Strategy

The different Afrobarometer survey rounds and time-varying mineral production data allows me to adopt a temporal and spatial difference-in-differences analysis developed by Tolonen (2014). Combining the variables described in sections 3.2.1-3.2.3, I estimate the following individual level difference-in-differences analysis:

$$Y_{ikt} = \beta_0 + \beta_1 \cdot active_t + \beta_2 \cdot nearmine + \beta_3 \cdot active * nearmine + \alpha_g + \gamma_t + \phi X'_i + \varepsilon_{ikt}$$

The dependent variable  $Y_{ikt}$  measures the specified political engagement or trust outcome of an individual  $i$  in cluster  $k$  (confined to include respondents within 20 km from an active mine) for year  $t$ . This is regressed onto the independent variables: an indicator for whether a mine is active during the time of the Afrobarometer survey ( $active_t$ ), an indicator for whether the Afrobarometer survey respondent lives within a 20 kilometer radius from an active mine ( $nearmine$ ) and an interaction between the latter two indicator variables ( $active * nearmine$ ). District fixed effects, year

<sup>6</sup> Additional regressions in the Appendix section include controls for extra variables that were only available in several rounds of the surveys, including occupation (1999, 2002, and 2005) and owning a radio and television (1999, 2005, and 2008).

fixed effects, and varying control variables are included in the regressions. All standard errors in these analyses are clustered at the district level. The distance chosen for this analysis derive from spatial studies on mining, which used distances ranging from 20 – 100 km (Aragon and Rud, 2013b; Kotsadam and Tolonen, 2013; Tolonen, 2014).

This difference-in-difference methodology is shown geographically in Figures 3a and 3b, where the small circles with a 20 km buffer zone constitute the treatment group and the survey respondents outside the 20 km buffers make up the control group. The parallel trend assumption for a difference-in-difference analysis, which requires treatment communities ( $\leq 20$  km from a mine) and control communities ( $>20$  km from a mine) to be on a similar trajectory before the opening of a mine, is discussed under results.

## 4 Results

In this section, I present the results of the individual-level difference-in-difference analyses, including district and year fixed effects, for the three political engagement and two trust outcome variables. In this econometric methodology, it is important for the sample to be balanced and for the

Table 2: Summary Statistics for Afrobarometer Survey

	(1)	(2)	(3)	(4)
	far from a mine		close to a mine	
	non-active	active	non-active	active
<i>Political Engagement Outcomes</i>				
Discussion of Politics	0.70	0.65	0.59	0.65
Attendance at Community Meetings	0.55	0.56	0.54	0.52
Raising Issues	0.47	0.47	0.42	0.42
<i>Trust Outcomes</i>				
Trust in Parliament	0.63	0.69	0.78	0.68
Trust in Local Assembly	0.51	0.57	0.58	0.54

Column (1) is the sample  $>20$  km away from a non-active mine  
Column (2) is the sample  $>20$  km away from an active mine  
Column (3) is the sample  $\leq 20$  km away from a non-active mine  
Column (4) is the sample  $\leq 20$  km away from an active mine

treatment and control groups to follow similar trajectories, in order to satisfy the parallel trend assumption. Table 2 shows the Afrobarometer survey summary statistics for individuals who live far from a non-active mine, far from an active mine, close to a non-active mine and close to an active mine. Columns 1 and 3, which comprise the pre-treatment groups are generally balanced across most outcome variables. There is a statistically significant difference between the pre-treatment groups for the *discussion of politics* and *trust in parliament* outcome variables based upon t-tests on the combined years of data. However, separate t-tests for 1999, 2002, 2005, and 2008 reveal insignificant differences between pre-treatment groups for 1999, 2002 and 2008. The statistically significant difference between the pre-treatment groups is driven by the data for 2005, a year in which the president was inaugurated, 29 new ministers were sworn into parliament, and the government announced a 50 percent increase in fuel prices (GhanaWeb, 2005). However, the year variation is controlled for by year fixed-effects in all regression analyses. The overall results across the four pre and post-treatment groups are very balanced, in satisfaction of the parallel trend assumption.

#### 4.1 Political Engagement

Using the difference-in-difference method described in Section 3.3 and the linear probability regression model, I estimated results for the *Discussion of Politics*, *Attendance at Community Meetings*, and *Raising Issues* political engagement binary outcome variables.

The results in Table 3 show that individuals who live within 20 km from an active mine (active\*near-mine) are more likely to discuss political matters when they get together with friends or family. Controlling for age, gender, urban or rural residence, education, and including year and district-level fixed effects, Afrobarometer survey respondents are 36.8% more likely to discuss politics. However, as shown in Table 4 and 5, there are no significant effects of living in active mining communities on individuals' propensity to attend local community meetings or likelihood to get together with others to raise an issue. Even though these estimates are positive and indicate a generally higher proclivity for political activity, in congruence with the opening of a mine, they are nonetheless statistically insignificant.

Table 3: OLS Estimates of Discussion of Politics in the Afrobarometer Individual Level Analysis

	(1)	(2)	(3)	(4)	(5)
	Discussion of Politics				
Active	-0.0649** (0.0313)	-0.0627* (0.0318)	-0.0596* (0.0317)	-0.0606* (0.0321)	-0.0696** (0.0347)
Nearmine	-0.287** (0.139)	-0.288** (0.136)	-0.281** (0.126)	-0.281** (0.128)	-0.309* (0.125)
Active*Nearmine	0.370*** (0.138)	0.371*** (0.135)	0.354*** (0.125)	0.353*** (0.127)	0.368*** (0.124)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
Constant	0.379*** (0.102)	0.433*** (0.105)	0.396*** (0.0979)	0.387*** (0.0999)	0.618*** (0.116)
Observations	5,416	5,416	5,416	5,416	5,416
R-squared	0.067	0.068	0.092	0.092	0.102

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

Table 4: OLS Estimates of Attendance at Community Meetings in the Individual Level Analysis

	(1)	(2)	(3)	(4)	(5)
	Attendance at Community Meetings				
Active	-0.0949*	-0.103*	-0.0977*	-0.0826**	-0.0850**
	(0.0535)	(0.0520)	(0.0525)	(0.0388)	(0.0400)
Nearmine	-0.272	-0.284	-0.263	-0.264	-0.278
	(0.300)	(0.323)	(0.322)	(0.299)	(0.294)
Active*Nearmine	0.125	0.142	0.111	0.122	0.130
	(0.291)	(0.312)	(0.312)	(0.290)	(0.285)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
Constant	0.662***	0.438***	0.423***	0.404***	0.216
	(0.0671)	(0.0652)	(0.0655)	(0.0567)	(0.132)
Observations	4,920	4,920	4,920	4,920	4,920
R-squared	0.092	0.111	0.126	0.139	0.141

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

Table 5: OLS Estimates of Raising Issues in the Afrobarometer Individual Level Analysis

	(1)	(2)	(3)	(4)	(5)
	Raising Issues				
Active	-0.0311 (0.0723)	-0.0355 (0.0715)	-0.0278 (0.0682)	-0.0220 (0.0614)	-0.0306 (0.0651)
Nearmine	-0.0787 (0.0601)	-0.0851 (0.0635)	-0.0759 (0.0654)	-0.0766 (0.0585)	-0.111** (0.0552)
Active*Nearmine	0.0449 (0.0681)	0.0499 (0.0708)	0.0154 (0.0725)	0.0212 (0.0650)	0.0371 (0.0629)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
Constant	0.307*** (0.0602)	0.176*** (0.0664)	0.0911 (0.0684)	0.125** (0.0612)	-0.157* (0.122)
Observations	5,040	5,040	5,040	5,040	5,040
R-squared	0.059	0.067	0.107	0.109	0.120

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

Figure 4: Varying the cut-off distance –  
Discussion of politics, attendance at community meetings, and raising issues

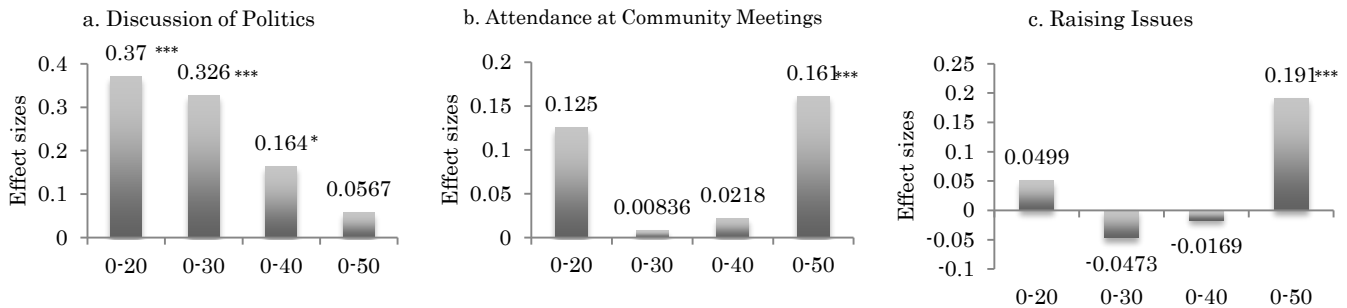


Figure 4 shows the coefficients on the active\*near-mine interaction terms using the baseline estimation strategy, with varying distance cutoffs of 20, 30, 40 and 50km. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

While there is no data available on migration or survey-respondent mobility for any of the rounds of the Ghana Afrobarometer surveys, there is a considerable possibility that migration played a mechanistic role in the shift in political attitudes among residents living near an active mine.

Although the mining sector in Ghana has been studied thoroughly, other factors such as migration and community dynamics have received less attention. While data on both large and small-scale mining activities is limited, Nyame et al (2009) nonetheless outlines labor, commercial and institutional migration patterns, both internal and cross-border, that have potential linkages with the growth phase of mine development in Ghana. Prior research by scholars on the effect of transnational mining on migration has also uncovered increasing rates of migration to mineral production sites in Africa and across Latin America (Bury, 2008) and the impact of this mineral-driven migration on regional economies, labor force structures, and political networks (Long and Roberts, 1978; Becker, 1983). For example, Bury (2008) found that the establishment of an LSM company in the Peruvian Andes could have catalyzed inward migration to the gold mining sites. In a recent study on migration and political attitudes in Central and Eastern Europe, Careja and Emmenegger (2012) also find that migration experiences broaden the range of political attitudes. If reliable migration data and ASM mining data in Ghana become available in the future, the impact of these specific aspects of mining production on political engagement and trust would be an edifying research endeavor.

## **4.2 Trust**

The effects of living in an active mining community on individuals' trust in the Ghanaian parliament and in their local assemblymen or women are examined in this section. Data on trust in the president is unavailable for Afrobarometer Round 1, and as a result, a similar analysis is conducted on a smaller sample size in the Appendix (see Table 10). As evident in the results in Table 6, the individuals who live within 20 km from an active mine are less likely to have trust in the parliament. Including year and district fixed effects, and controlling for age, gender, urban or rural residence, and education, I find that respondents residing near active mines are one third less likely to trust the Ghanaian parliament.

In contrast to the findings in Table 6, none of the negative effects of living near an active mine on an individual's probability of losing trust in the local assembly are statistically significant. These results presented in Tables 6 and 7 may lend support to the idea that inflated community

expectations of high-level government officials, especially with regards to the issues of royalty payments, correlate with lower trust, confidence and disenchantment toward these government officials (Garvin et al, 2009). In a study on the empirical relationship between employees' trust in

Table 6: OLS Estimates of Trust in Parliament in the Afrobarometer Individual Level Analysis

	(1)	(2)	(3)	(4)	(5)
	Trust in Parliament				
Active	0.0631*	0.0593*	0.0593*	0.0628*	0.0641*
	(0.0356)	(0.0351)	(0.0351)	(0.0335)	(0.0336)
Nearmine	0.423***	0.423***	0.424***	0.424***	0.429***
	(0.0953)	(0.101)	(0.100)	(0.0943)	(0.0959)
Active*Nearmine	-0.330***	-0.329***	-0.330***	-0.327***	-0.330***
	(0.0963)	(0.102)	(0.101)	(0.0951)	(0.0958)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
Constant	0.595***	0.519***	0.516***	0.549***	0.594***
	(0.0613)	(0.0653)	(0.0645)	(0.0665)	(0.0743)
Observations	5,150	5,150	5,150	5,150	5,150
R-squared	0.082	0.085	0.085	0.086	0.087

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.



Table 7: OLS Estimates of Trust in Local Assembly in the Individual Level Analysis

	(1)	(2)	(3)	(4)	(5)
Trust in Local Assembly					
Active	0.113*	0.109*	0.109*	0.116**	0.122**
	(0.0576)	(0.0564)	(0.0565)	(0.0509)	(0.0504)
Nearmine	0.367	0.362	0.362	0.368	0.410*
	(0.235)	(0.236)	(0.236)	(0.226)	(0.236)
Active*Nearmine	-0.193	-0.186	-0.185	-0.182	-0.194
	(0.223)	(0.224)	(0.224)	(0.214)	(0.223)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
Constant	0.570***	0.504***	0.504***	0.572***	0.512***
	(0.154)	(0.156)	(0.156)	(0.150)	(0.166)
Observations	5,120	5,120	5,120	5,120	5,120
R-squared	0.063	0.065	0.065	0.070	0.076

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

Figure 5: Varying the cut-off distance – Trust in parliament and trust in local assembly

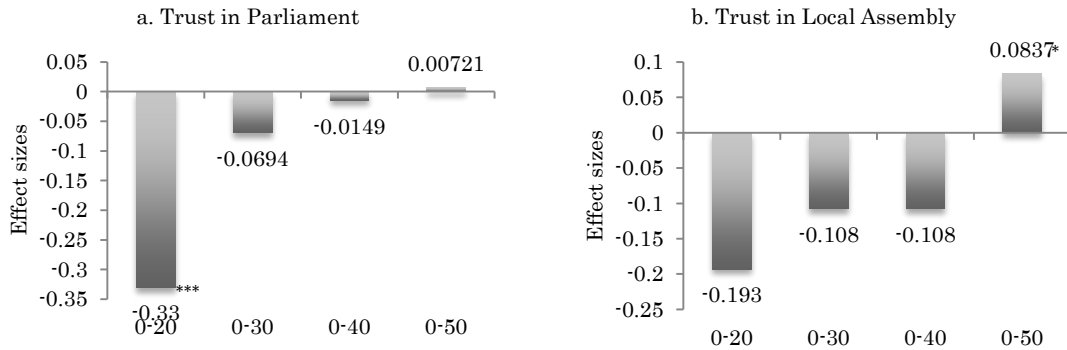


Figure 5 shows the coefficients on the active\*near-mine interaction terms using the baseline estimation strategy, with varying distance cutoffs of 20, 30, 40 and 50km. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

their employers and experiences with a breach in psychological contracts, Robinson (1996) finds that when expectations are unmet, there is a decline in trust among employees and a negative effect on subsequent contributions to the firm. Analogously, if government officials of Ghana are perceived as

the employers and miners are the employees, unmet expectations with regards to the benefits of mining on local communities can drive the negative trust results in the different regressions. The reductions in trust among individuals living near an active mine and ensuing negative effects on growth and market participation (Cassar et al, 2013; Algan and Cahuc, 2010; Algan and Cahuc, 2009; Rohner et al, 2013) can plausibly offset the positive impacts of mining activities. If individual-level data on expectations becomes available, it would be a very interesting mechanism to investigate, especially with regards to its policy implications.

## 5 Conclusion

Ghana has been experiencing an enormous expansion in its export-oriented mineral sector in the last 20 years, particularly in gold. Whereas the mineral sector is the largest recipient of foreign direct investment (World Bank, 2011) and contributes appreciably to Ghana's economic growth, historical experiences of the purported natural resource curse throughout Africa nonetheless call to question the social and psychological effects of these expanded mining activities. I use geo-coded gold mining data and four rounds of Afrobarometer political attitude surveys combined with an individual-level, geo-spatial difference-in-differences method to analyze the relationships between mining, trust in government, and political engagement by Ghanaian citizens. In applying these strategies, I find that living within 20 kilometers from an active mine gives rise to a higher likelihood to discuss politics, attend community meetings and raise issues, and a lower propensity to trust the Ghanaian parliament and local assembly. The results for the *discussion of politics* and *trust in parliament* outcome variables are statistically significant.

Although empirical information on migration and expectations is currently unavailable in the Afrobarometer database, these factors seem to anecdotally explain the phenomenon of increased political engagement and diminishing trust. In light of the post-2015 Development Agenda and its intensified focus on environmental, resource and community inclusion issues, further research on the migration and expectation aspects of the story can help provide for efficacious policy recommendations for affected populations.

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# Appendix

## Transparency: Data Cleaning Process and Limitations

In following with the latest transparency practices in the social sciences (Miguel et al, 2014), in this section I outline my process for combining and cleaning my final dataset and describe limitations of the Afrobarometer data. While six rounds of Afrobarometer data are available for Ghana, I only downloaded and used rounds 1-4 (1999, 2002, 2005, 2008) because these were the only rounds for which I could obtain geo-coded data. I received latitude and longitude coordinates for each survey respondent from a PhD student at NYU, Omar Garcia-Ponce, and a PhD student at MIT, Matt Lowe. These coordinates vary in their precision, as described under the 3.1 Data section of this paper. With generous help from Anja Tolonen, Kwabena Donkor, and employees at the Berkeley Data Lab, I appended these four rounds together, merged in the geo-coordinates, and kept data on the chosen political engagement and trust outcome variables, age, gender, urban versus rural residence, education, occupation, ownership of a radio and ownership of a television. Diverse rounds of the Afrobarometer surveys would either ask the questions relevant to these variables in different orders, with slightly varying answers, or would not ask the questions at all (as detailed in the footnotes). Further, certain rounds would present answers as string variables, and others as numeric. I spent a significant portion of time in the data cleaning process on recoding variables to align across the rounds. All other variables were dropped. Using the geo-coded data on the sixteen gold mines in this study, I used the near-stat command in Stata to match these coordinates to the closest Afrobarometer respondent. I merged this information into the master dataset and finally created the various dummy variables described in the data section of this thesis. Patty Frontiera in the GIS lab assisted me in using this data to make the map figures in ArcGIS.

There are a number of limitations with regards to the Afrobarometer data, in particular missing values. As evident in the diverse regression tables in the results section of this paper, there are 5416 observations for the *discussion of politics* variable, 4920 observations for the *attendance at community meetings*, 5040 observations for the likelihood to *raise issues*, 5150 observations for *trust*

*in parliament*, and 5120 observations for *trust in the local assembly*. While it would be ideal for the number of observations to be consistent across these different variables, the varying regressions run on each individual variable are nevertheless on the same, consistent sample. Another big limitation is that data on trust in the president, occupation, ownership of a radio, and ownership of a television is not available for every round. Data on trust in the president is missing for 1999 (round 1), data on occupation is missing for 2008 (round 4) and data on radio and television ownership is missing for 2002 (round 2). Additional regressions on these smaller sub-samples of rounds 2-4 of the overall dataset are presented in the remainder of this appendix.

### Indexed Political Engagement and Trust Results

Table A1: Indexed political engagement variable, with equal weight given to discussion of politics, attendance at community meetings, and likelihood to raise issues

	(1)	(2)	(3)	(4)	(5)
	Political Engagement Index				
Active	-0.197 (0.153)	-0.205 (0.151)	-0.182 (0.148)	-0.159 (0.122)	-0.177 (0.132)
Nearmine	-0.317 (0.546)	-0.328 (0.578)	-0.251 (0.600)	-0.242 (0.573)	-0.316 (0.536)
Active*Nearmine	0.382 (0.552)	0.396 (0.584)	0.264 (0.603)	0.274 (0.576)	0.316 (0.540)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
Constant	1.867*** (0.172)	1.632*** (0.166)	1.677*** (0.160)	1.648*** (0.137)	2.121*** (0.173)
Observations	4,759	4,759	4,759	4,759	4,759
R-squared	0.088	0.095	0.141	0.146	0.158

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

Table A2: Indexed trust variable, with equal weight given to trust in parliament and trust in the local assemblyman or woman

	(1)	(2)	(3)	(4)	(5)
	Trust Index				
Active	0.168*	0.159*	0.159*	0.172**	0.180**
	(0.0862)	(0.0841)	(0.0841)	(0.0773)	(0.0769)
Nearmine	0.760**	0.749**	0.749**	0.759**	0.815***
	(0.306)	(0.308)	(0.308)	(0.292)	(0.307)
Active*Nearmine	-0.485*	-0.472	-0.473	-0.468*	-0.484*
	(0.291)	(0.293)	(0.293)	(0.278)	(0.289)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
					(0.333)
Constant	1.272***	1.141***	1.141***	1.241***	1.217***
	(0.205)	(0.207)	(0.206)	(0.198)	(0.389)
Observations	4,948	4,948	4,948	4,948	4,948
R-squared	0.084	0.087	0.087	0.091	0.095

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.



## Additional Regressions

### Trust in President

*Trust in president*:<sup>7</sup> “How much do you trust each of the following, or haven’t you heard enough about them to say: The President?” The variable takes the value of one if the respondent answers either “Somewhat” or “A lot” and zero otherwise.<sup>8</sup>

Table A3: OLS Estimates of Trust in President in the Afrobarometer Individual Level Analysis

	(1)	(2)	(3)	(4)	(5)
Trust in President					
Active	0.0843** (0.0400)	0.0833** (0.0398)	0.0829** (0.0402)	0.0826** (0.0399)	0.0805** (0.0399)
Nearmine	0.258** (0.109)	0.258** (0.111)	0.259** (0.109)	0.259** (0.109)	0.254* (0.106)
Active*Nearmine	-0.142 (0.110)	-0.141 (0.111)	-0.144 (0.109)	-0.144 (0.109)	-0.142 (0.105)
Age		yes	yes	yes	yes
Male			yes	yes	yes
Urban				yes	yes
Education					yes
Constant	0.716*** (0.0400)	0.701*** (0.0421)	0.686*** (0.0433)	0.687*** (0.0431)	0.629*** (0.209)
Observations	3,344	3,344	3,344	3,344	3,344
R-squared	0.142	0.142	0.143	0.143	0.144

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

<sup>7</sup> Data on trust in president is unavailable for Afrobarometer Round 1

<sup>8</sup> Q43A in round 2, Q55A in round 3, Q49A in round 4

### Regressions with occupation and household-level wealth controls

Table A4: OLS estimates for political engagement outcome variables, including occupation and house-level wealth control variables

	(1) Discussion of Politics	(2) Attendance at Community Meetings	(3) Raising Issues
Active	-0.0999 (0.0656)	0.0248 (0.0775)	0.0194 (0.0806)
Nearmine	-0.580*** (0.0241)	0.517*** (0.0223)	-0.156*** (0.0269)
Active*Nearmine	0.423*** (0.0721)	-0.0148 (0.0784)	-0.0723 (0.0859)
Age	yes	yes	yes
Male	yes	yes	yes
Urban	yes	yes	yes
Education	yes	yes	yes
Occupation	yes	yes	yes
Own radio	yes	yes	yes
Own television	yes	yes	yes
Constant	1.175*** (0.0935)	-0.193*** (0.0635)	-0.489*** (0.0830)
Observations	2,688	2,688	2,688
R-squared	0.099	0.185	0.146

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

Table A5: OLS estimates for trust outcome variables, including occupation and house-level wealth control variables

	(1) Trust in Parliament	(2) Trust in Local Assembly
Active	0.0599 (0.0704)	0.107 (0.0786)
Nearmine	0.785*** (0.0248)	0.177*** (0.0290)
Active*Nearmine	0.194** (0.0849)	0.409 (0.0825)
Age	yes	yes
Male	yes	yes
Urban	yes	yes
Education	yes	yes
Occupation	yes	yes
Own radio	yes	yes
Own television	yes	yes
Constant	0.00575 (0.0537)	-0.0257 (0.0565)
Observations	2,471	2,471
R-squared	0.069	0.0896

Robust standard errors are clustered at the district level in parentheses. All regressions control for year and district fixed effects. Active indicates the active status of the mine in the survey year and near-mine is an indicator variable for whether an Afrobarometer survey respondent lives within 20 km from a mine. \*\*\* p<0.01, \*\* p<0.05; \* p<0.1.

# High-Tech Industry and Housing Supply in San José, CA: *ex copia parum*

John Paraskevopoulos  
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University of California, Berkeley

## **Abstract**

Many residents of the United States' wealthiest metropolitan areas increasingly suffer from problems caused by unaffordable housing, including overcrowding, substitution away from other necessities, and homelessness. Soaring rents have become commonplace in metropolitan areas like New York and the San Francisco Bay Area, where the intersection of constrained housing supplies and booming demand has made finding affordable housing impossible for thousands of individuals and families. In the Silicon Valley, a largely suburban metropolitan area south of San Francisco with San José as its principal city, a stagnant, sprawling, low-density housing stock experiencing little growth over the last forty years has exacerbated many of these problems, with demand far exceeding supply and subsequent competition bidding up rents and home values far above state and national averages. More recently, however, the steady influx of high-paying high-tech jobs in the region, as a consequence of the San Francisco Bay Area's emergence as one of the world's pre-eminent information technology agglomeration economies, may be significantly augmenting the existing competition for rents and homes, culminating in median rents' and home values' in San José and Santa Clara County being among the highest in the nation. The disproportionately high cost of housing implies additional obstacles for the majority of San José's population, who work in the service sector and earn far less in wages on average than employees of the city's base industries. This paper endeavors to understand the causes for such high rents and home prices in San José, seeks to measure the magnitude of the relationship between the affordability of housing and the growth of the city's information technology sector, examines the city's housing policy, and elaborates upon the social implications of each, hypothesizing that both the undersupply of housing and the strength of high-technology industries in the Silicon Valley affect the cost of housing.

## I. Introduction

Rapid increases in rents and home values and subsequent problems related to the unaffordability of housing must be understood with regards to their social and historical implications. Housing market inefficiencies, jobs-housing imbalances, and housing burdens act in many ways as proxies for wider social maladies such as racial segregation and inequality of opportunity, each of which has distinct and inexorable consequences for the health of communities and their human populations, often with reverberations that can be felt across generations. Rapid increases in rents in a metropolitan area are widely linked to displacement (Zuk 34). Because of correlations between race and income or educational attainment, displacement or spatial exclusion on pecuniary grounds can often mean *de facto* racial segregation, with notable concomitant effects upon public goods and opportunities available in neighborhoods with higher poverty and minority concentrations, compounding the issue over time and generations. Displaced or excluded households, especially those displaced to exurban communities or edge cities, besides having diminished access to preferable schools, parks, public transit options, job opportunities, cultural centers, or other amenities, may often face dramatically longer commute times and higher rates of automobile dependency, which can pose an additional financial burden and significantly lower an individual's quality of life in addition to the environmental and socio-economic impacts of congestion and additional vehicle miles traveled. This is of course to say nothing of those households who choose to relocate to another metropolitan area altogether as a result of relatively more affordable housing. When not displaced, households experiencing housing burdens are forced to make

trade-offs in order to afford the cost of housing, including substituting away from the consumption of other goods and necessities, postponing or foregoing homeownership (which has important consequences for the accumulation of wealth across generations), and overcrowding, which can have implications for health and quality of life (LAO 7).

## **II. The Golden State**

California has long had home values above the national average (LAO 7). Though they have not precluded some of the highest rates of racial and ethnic diversity in the world, they do appear to be playing a role in patterns of intra-state and intra-metropolitan segregation, along lines of income and race. Home values within the state vary widely, with the lowest prices predictably found in Central Valley communities such as Bakersfield, where levels of poverty are high, levels of educational attainment low, and wages relatively lower than other metropolitan areas within the state (LAO 8; Moretti 95). Likewise, home values and rents are highest in coastal communities with booming job markets and higher rates of educational attainment, such as the San Francisco or San José metropolitan areas (LAO 8; Moretti 94). Similarly, within such metropolitan areas, there exists a high degree of racial and income segregation that corresponds to differences in rents and home values. Although the legacies of red-lining practices, urban renewal, and white flight also explains some of these intra-city racial boundaries, their effects should be far less pronounced in younger California metropolitan areas, for example San José, than more mature California communities such as San Francisco or Oakland. However, the increasing differential in wages earned

by college-educated professionals in high-skill, high-technology sectors and those who work in lower-paying, local good, service sector jobs may be contributing increasingly to rates of residential segregation and the burden of housing costs upon lower-income households by bidding up market rate home values and rents in California coastal communities such as San Francisco, Santa Clara County, and the San José metropolitan area, which have high concentrations of high-technology and high-value-added jobs, such that lower-income (and predominantly Hispanic and African-American) households cannot afford adequate housing, are restricted to specific neighborhoods or exurban communities, or (as the case may be with African-Americans in San Francisco) leave the metropolitan area altogether.

These problems have been created largely as a result of land-use and policy decisions in California made after the 1940s, a timeline that data would support. Although California home values did begin the 1940s approximately 20% more expensive on average than homes elsewhere in the country, they appreciated at a rate roughly parallel to the appreciation of home values across the country between 1940 and 1970 (LAO 7). Development in the post-war era in coastal metropolitan areas was rapid and demand was high, but the housing stock of California's coastal metropolitan areas, where two thirds of Californians live, increased in size between 1940 and 1970 by 200% in order to keep pace with swift demographic growth (LAO 11). This trend began to change dramatically in the 1970s, however, for a variety of reasons. Growth of the housing stock slowed, especially in coastal metropolitan areas, falling below national averages in the 1970s. Whereas the average U.S. metropolitan area grew its housing stock by 54% in the

period 1980-2010, California coastal communities only added 32% on average, and even less in areas like San Francisco and Los Angeles, which only increased the size of their housing supply by 20% (LAO 10-11). Subsequently demand outstripped supply, with home values and rents in California coastal metropolitan areas in the period 1980-2010 increasing at a rate far above national (and statewide) averages as competition among home buyers and renters bid up prices, such that whereas home values in California coastal communities in 1970 were 50% higher than elsewhere in the country, by 2015 they were three times higher on average (LAO 12). Production of housing remained relatively stagnant even during the housing boom in the early 2000s, when the market should have responded to the rapid inflation in property values by adding more units. For comparison, in the last two decades Seattle, WA, a metropolitan area with similar economic and climate conditions and similar geographic constraints to the California Bay Area added new housing at a rate of 1.4% per year, whereas San Francisco and San José's housing supplies grew only at a rate of 0.7% annually (LAO 10). Where the market should have responded to increased demand in each instance by constructing proportionally more housing, and to higher bid-rents by constructing denser housing units, these responses to demand appear to have been significantly muted in California coastal metropolitan areas.

The 1970s are a watershed decade for a few reasons. First, municipalities in coastal communities began to exhaust supplies of vacant and easily developable land by this time if they had not already, owing to geographic constraints. Market forces, responding to the scarcity of developable land, bid up the value of land (often speculatively),



increasing the price of land to sometimes unsustainable levels and adding to the fixed costs of construction. Figure 1, taken from a 2015 Legislative Analyst's Office report on housing affordability, shows this trend and implicates financial speculation and competition as among the culprits driving the growth of housing prices, as opposed to any real growth in construction costs, which account for the majority of a final home price in more elastic housing markets. Second, growth controls and stricter regulations began to be implemented at municipal and state levels, adding to existing construction costs. Cities experiencing problems related to sprawl, such as financing the provision of public goods and infrastructure at urban fringes, enacted growth controls to mitigate these problems, while the state began to mandate environmental impact reviews and more environmentally friendly construction standards in response to increased public demand for environmental responsibility. Third, patterns of land use and construction in many California coastal communities in the period 1940-1970 had favored the construction of single-family homes, probably as a response to the baby boom, cultural preferences for suburban lifestyles, and federal policies promoting homeownership, which created low-density, sprawling housing supplies in which expensive infill development (the redevelopment of a lot on which a structure has already been built) suddenly became the only available option for new projects, driving up the cost of new construction. Fourth, many coastal communities adopted NIMBY attitudes to protect the suburban nature of their communities, frequently utilizing new political mechanisms (such as CEQA) to block the construction of high-density housing. Fifth, changes in the nature of public financing for California cities, such as the passage of Proposition 13 in 1979, gave

municipalities greater incentives to favor fiscal zoning policies instead of zoning for high-density housing construction, on which the rate of return from taxes would be lower and infrastructure burdens might be greater. Meanwhile, the introduction of impact and development fees in many cities, intended to recoup costs of added strains to infrastructure from and the provision of public goods to new residential developments that would no longer be recouped from property taxes, only increased the costs of development and shifted those costs to developers. Developers in turn pass on the added costs of fees to households in the form of higher rents and home values. Finally, in markets with extremely high construction costs and land prices, where constrained supply has created a competitive environment among renters and home buyers, developers will naturally favor the construction of high-quality, market-rate housing and charge above-median rents in order to maximize the return on their investment, leaving the supply of affordable housing lacking.

The aforementioned California Legislative Analyst's Office report sheds light on the size of the problem in the state. The report finds that California would need to construct 100,000 new units per year, in addition to the expected annual construction of 100,000-140,000 housing units, "almost exclusively" in California coastal metros (where costs are highest), in order to "seriously mitigate its problems with housing affordability" (LAO 4). Naturally, construction of this magnitude is inconceivable, barring dramatic federal and state investment, for practical reasons let alone political ones. Construction at such a scale would rapidly strain existing infrastructure, and would threaten notable change to the physical and aesthetic nature of some California coastal communities and

neighborhoods, posing difficult and highly political questions as to where such development should take place.

As a result of an insufficient supply of housing, the state's average home values are higher than any other state in the country besides Hawaii (LAO 5). Households in California on average spend 27% of their income on housing, compared to the national average of 23% (LAO 25). The bottom quartile of California households by income spend a whopping 67% on average on housing, 11% higher than the same quartile elsewhere in the country and more than twice the threshold for the definition of housing burden (30% of income) (LAO 26). Median renters spend 30% of their income on housing in California (meaning by definition that half of all renters in the state are burdened by the cost of housing), and median homeowners spend 20% (LAO 26-27). The high cost of housing contributes to higher rates of poverty: according to definition of poverty given by the Supplemental Poverty Measure, the report finds that 23.4% of California households live in poverty, 9% above the national average (LAO 28). The report also finds that fewer households in California own homes (but does not note that rates of homeownership are also delineated along racial lines), with California's rate of homeownership the lowest in the nation after New York state and Nevada (LAO 28). Meanwhile, those who do buy homes do so later in life on average and take on more debt as a result of higher home values (LAO 29). Overcrowding is also four times more likely among California households than the national average, a difference attributable in part to demographic differences but also a variable that increases in metropolitan areas with higher housing costs—thus lending credence to the hypothesis that it is a consequence of housing

burdens (LAO 31). This is to say nothing of the other social and economic consequences of unaffordable housing—such as longer commutes or their opportunity cost (the San Francisco MSA’s commute times are 30% higher than the national average) that result from workers’ being displaced away from employment centers in the pursuit of affordable housing; the spillover of higher housing prices to inland communities; the difficulty businesses experience hiring and retaining qualified employees that results from the higher wages necessary to offset commuting and housing costs; and the fact that fewer workers are able to afford to live in the state’s most productive cities, which the report says hinders the economic growth of the state as a whole, perhaps by as much as 13% (LAO 32-34). The metropolitan area of San José provides a perfect example for a discussion of these patterns of land use and their consequences. The city’s development provides a microcosm of larger statewide trends, and ample material for a discussion of policy measures undertaken *post hoc* to alleviate problems that result from forty years of insufficient and inefficient construction.

### III. Valley of Heart’s Delight

In 1939 San José held the modest claim to the largest fruit-packing industry in the world, and the region’s economy revolved primarily around agriculture and produced half of the world supply of prunes, apricots, and cherries, facilitated by fair weather, exceptionally fertile soil, and a generous (now largely depleted) aquifer that lay beneath the valley (Sachs 13-15). Developments in San José mirrored larger statewide trends, with the war bringing government manufacturing contracts and higher rates of

immigration, causing subsequent development and a rapid transformation away from mostly agricultural modes of life. After the war, Santa Clara County, like Los Angeles County, evolved from a region dominated by the production of fruit for export into a lightly industrialized, sprawling, polycentric suburb.

Spurred by the location of lucrative research and development sites and aerospace facilities in nearby Palo Alto and Mountain View during the Cold War, IBM's placement of offices and plants in San José and the surrounding area beginning in 1943, and proximity to Leland Stanford Junior University's Industrial/Research Park, the region began to attract engineers and skilled professionals among its new residents in the post-war era, creating a foothold for high-technology industries in the region, a foreshadowing of the state's future transition to high-technology and high-skill services as its export industries (Sachs 15-16). With some of the last remaining undeveloped land in the Bay Area and suddenly booming demand, the vast agricultural hinterlands of the valley were hastily converted into sprawling network of single-family homes and shopping centers, turning San José into a low-density bedroom community for the jobs-rich neighboring cities of the Silicon Valley, a position the city still holds (to its chagrin) with a jobs-to-employed-resident ratio of 0.86 and a population density of approximately 5,500 people per square mile (Housing Element III-4).<sup>1</sup> Meanwhile, between 1950 and 1969, as part of a deliberate and aggressive development strategy intended to ensure that San José would become the metropole of the valley, San José's then-city manager, A.P. "Dutch" Hamann, executed nearly 1400 annexations of nearby

<sup>1</sup> Compare to Los Angeles' population density of 8,282 people per square mile, or San Francisco's 18,187.

unincorporated cities, towns, and pieces of land, growing San José from a city of approximately 95,000 residents and an incorporated area of 17 square miles in 1950 to a city of nearly 500,000 residents and 136 square miles in 1969 (Sachs 17). Although an urban growth boundary, following changes in government, was created in the 1970s to create a greenline and rein in sprawl, San José's incorporated area has continued to grow to its current size of 180.2 square miles (Toole 4).

Among the foremost consequences of this pattern of land use is a scarcity of housing, an ironic outcome given the expansive amount of space available in the valley. As an indication of undersupply, San José's vacancy rate in the last 15 years has been consistently low—almost invariably below the 5% threshold usually given as the indication of a “healthy” market, even dropping to 1.9% during the dot-com boom (Housing Element II-16). This scarcity of housing relative to demand, in tandem with the economic development of the region after WW2, contributes to the San José metropolitan area's high costs of housing. Although the majority of the city's population does not work in high-technology industries, because the city functions partly as a dormitory community for those people who do work in high-tech in neighboring cities, the high wages earned by those working in high-tech relative to wages earned in other industries in San José, the scarcity of housing relative to demand, and the impediments to affordable housing common to all California coastal cities have all combined to bid up rents and home values, making the cost of housing a burden for whole swaths of San José's residents.

## IV. Housing Affordability in San José

The problem appears to be worsening, probably due to burgeoning economic growth in the San José MSA (which includes the Silicon Valley) that has consistently outpaced the growth of the housing supply. Between 1986 and 2001, home values in San José increased 936% in nominal dollars, compared to 821% over the same period in San Francisco, 584% in Seattle, WA, and 398% in Portland, OR (Thoreau Institute). By most accounts, the San José MSA has one of the highest costs of living in the nation. When placed second or third behind San Francisco or New York City, however, it is useful to remember that residents of San José are more likely to commute to work in cars because of a sprawling built environment that heavily favors (necessitates) auto-dependency, and that according to a 2009 Urban Land Institute study, the costs of transportation for South Bay Area residents amounted to \$17,000 per year (Housing Element III-39). The costs of commuting are typically not included in housing costs, but should be kept in mind not only because they significantly augment the cost of living in auto-centric cities but also because high costs of housing limit the housing location choices available to lower-income workers and may result in longer commute times; thus, the cost of transportation can have disproportionately larger effects on lower-income households, whose marginal ability to afford the added expenses is lower.

In 2000, Census data indicated that 33% of San José's households were cost-burdened by housing (used more than 30% of their income to pay for housing), with 39% of cost-burdened households being renters and 29% being owner-occupiers (Analysis of Impediments to Fair Housing Choice 49). By 2010, the City of San José Housing

Element described 44% of all households in San José as being cost-burdened by housing, between 57% of owner-households and 43% of renter-households, an 11% increase overall (Housing Element III-15). These figures do not reveal the full picture, however. Over the same decennial period, the number of renter households in San José increased by almost 20%, whereas homeowners increased in numbers by a paltry 3% (Housing Element II-17). This likely reflects both the difficulty of homeownership amid rapidly inflating home prices (a 20% down payment on the median home value in the San José MSA right now would be around \$150,000 cash, just \$30,000 below the national median home value!), as it does the effects of the foreclosure crisis and recession at the end of the decade. Thus, as a result of spiraling home values among other factors, more households appear to be renting. Average rents in San José are similarly at all-time highs (as of Q3 2015, \$2,486), and have increased at least 10% every year since 2010 (Housing Statistics Report: Q3 2015 3). Moreover, one must keep in mind the demographic differences between renters and owner-occupiers. The Housing Element reports that as of 2010, although a larger proportion of owners were cost-burdened by housing in San José, 36% of San José's households fit the definition of low-income (LI), very-low income (VLI), or extremely low income (ELI), and low-income households were not only more likely to rent, but also significantly more likely to be severely cost-burdened by housing (paying more than 50% of their income for housing) (Housing Element III-8-16). Nearly half (47%) of San José's overpaying households were found to be severely overpaying in 2010, and among renters in this subset, the majority (52%) were severely overpaying (Housing Element III-16). Similarly, 56% of renter-households were found to be lower-income (as



opposed to 23% of owner-households), and rather predictably 59% of overpaying households were lower-income, and 89% of lower-income households overpaying for housing were also renters (Housing Element III-16). It is also worth noting that between the years 2000-2010, as a result of the Great Recession, households in San José lost income, with a median household loss of 13.4% and an average loss of 11.5% in real terms (Housing Element III-7). Thus, while renting became more popular in San José between the years 2000-2010 partially as a result of both soaring home values and later a foreclosure crisis, rents climbed to all-time highs at a rate of 10% per annum and households lost more than 10% of their annual incomes, resulting in substantially greater rates of overpayment for housing, which were felt more acutely (and continue to be) among the third of San José's households who are classified as LI, VLI, or ELI. The Housing Element succinctly sums up the matter when it concludes, "Low-income households of any size are essentially priced out of the rental market. Those who can afford rental markets are large households who would then be living in overcrowded situations" (Housing Element III-21). These figures fail to complete the story, however. The bifurcation of the population into those who are cost-burdened and those who are not needs to be unpacked, as this ignores the racial, spatial, and socio-economic aspects of each category.

San José's housing market is inextricably linked to the regional economy of the "Silicon Valley." While being home to some significant high-technology employers of its own, such as Cisco, Adobe, Hitachi, IBM, etc., San José also serves as a bedroom community for its neighboring cities in the Silicon Valley, whose supplies of jobs are

greater than their supplies of housing. This fact is often captured in some sort of “jobs-to-employed-resident” ratio, which some municipalities in recent decades, including San José, have begun to target as a policy measure, in spite of J/ER ratios being a simplistic metric that naturally obscures the complexity of choices that households make in determining where to live and work. For instance, Palo Alto is a “jobs-rich” community, with a J/ER ratio of roughly 3.0, whereas San José is a bedroom or “housing-rich” community (a misnomer to be sure), with a J/ER ratio of 0.86 (Housing Element III-5). In other words, San José “exports” workers: more employed residents commute out of San José in order to work in neighboring cities than work in San José.<sup>2</sup> Taken together, this means that high wages elsewhere in Santa Clara County spill over to affect housing prices and rents in San José.

Given that one third of jobs in Santa Clara County command high salaries between \$86,000 and \$144,000, the lack of housing in “jobs-rich” neighboring cities, and the scarcity of housing in San José, it is thus natural that home values and rents will be bid up through competition among buyers and renters in San José and that developers will favor the production of high-quality market rate housing that can be expected to “pencil out” sooner, in spite of the fact that one third of employees in San José do not earn such high salaries (Housing Element III-1). In fact, whereas the median household income for Santa Clara County is roughly \$93,000, half of San José’s households earn less than \$80,000, though they share the same housing market (American FactFinder; Fact Sheet 4). Furthermore, as was noted earlier, 36% of San José’s households qualify as

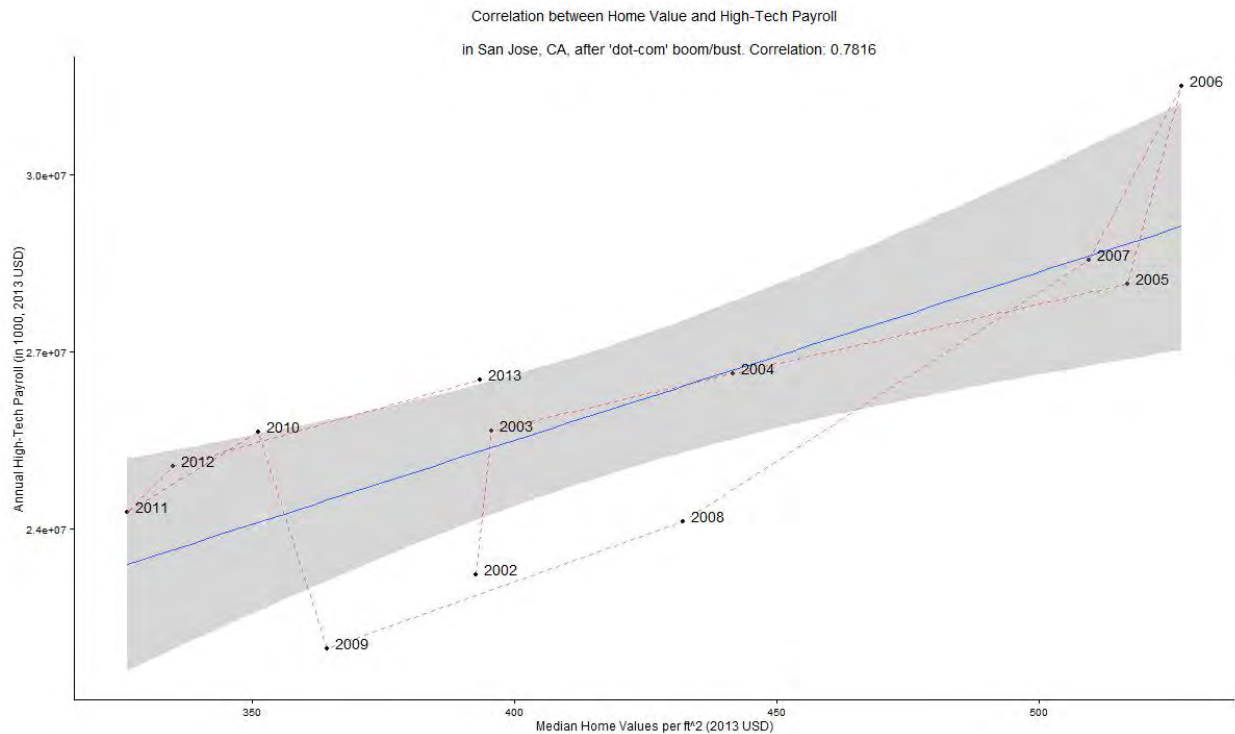
<sup>2</sup> San José is actually the only large metropole in the nation where this is the case.

low-income (earning less than \$60,000), VLI, or ELI, and half of the San José MSA's occupations pay median salaries between \$19,000 and \$56,000, technically qualifying those workers for low-income status as well (Housing Element III-1). The distribution of incomes in the San José MSA is thus quite polarized with, for instance, 10% of San José's employees earning average salaries of \$150,000, and more than half at the other end earning average salaries of \$30,000-\$70,000 (Housing Element III-5). Moreover, as has been noted widely elsewhere, the recovery from the Great Recession, which rapidly brought home values and rents in Santa Clara County from their troughs around 2010 back to record highs, has benefited some groups far more than others. Although growth in export industries such as high-tech spurs employment in local sectors by means of the multiplier effect, the salaries between high-tech industries and local services in the San José MSA continue to diverge. While wages in high-tech sectors appear to have partially kept pace with the increases in home prices, those in other sectors have not. According to Working Partnership USA, cited in the Housing Element, a single person with no dependents must earn \$16.50 an hour in addition to benefits "to support basic living in Santa Clara County," yet more than half of the new jobs created in Santa Clara County in the next five years will pay \$11.00 or less (Housing Element III-6, III-9). To this point, the City of San José Housing Element quotes Stephen Levy, a consultant for the report and director of the Center for Continuing Study of the California Economy (CCSCE), who remarked, "This is a tech-led recovery. But the wages at the bottom of the income ladder are stagnating" (Housing Element III-6).

To help visualize the relationship between the high-tech industry's presence in Santa Clara County and housing costs in San José, Figure 2 plots the correlation between median home values per square foot in San José between the years 2002 and 2013 and the aggregate annual payroll in thousands of dollars for “high-tech” industries in Santa Clara County over the same period.<sup>3</sup> Data was selected from the US Census Bureau's Annual County Business Patterns survey, with median home values coming from Zillow Data, and both are displayed in inflation-adjusted 2013 dollars.

Unfortunately, rental data were unavailable for those years. Although the correlation could be spurious, a regression analysis over the same period, with median home values in San Jose per square foot set as the dependent variable to the number of building permits issued annually, annual high-tech wages in Santa Clara County, and the number of employees in high-tech in Santa Clara County shows that each variable is significant at either the 1% or 5% level (the regression results are listed in the appendix). The model itself is significant at the 5% level and demonstrates a high goodness-of-fit ( $R^2$  of 0.73), and implies at least a minimum of causality, in that the sign for the coefficient for building permits is negative, indicating that higher rates of construction do exert downward pressure on the growth of home prices.

<sup>3</sup> “High-tech” industries were all businesses classified by NAICS codes 3341, 3342, 3343, 3344, 3345, 3346, 3353, 3364, 5112, 5161, 5181, 5182, 51913, 5415, 5416, and 5417. These industry classification codes correspond to all businesses classified in industries as diverse as Computer and Peripheral Equipment Manufacturing (3341), to Software Publishers (5112), to Scientific Research and Development Services (5417). This definition of “high-tech” is therefore somewhat arbitrary: some industries were excluded at the author's discretion, for example “Engineering Services,” in order to avoid cross-tabulation or “kitchen-sink” inclusion (for example, engineering services that engage in “Planning and designing computer systems that integrate computer hardware, software, and communication technologies” are already captured under 5415, and many engineering services may be endogenous to the size of any city—architectural services for example—and not exactly the exogenous “high-tech” presence that is under scrutiny).



In terms of racial demographics, San José is remarkably diverse, with approximately 28% of its population being classified as “White” in 2011, 33% “Asian,” and 33% “Hispanic” (Housing Element II-9). The diversity at a superficial level masks stark differences between economic and spatial outcomes, however. Whereas median household incomes in San José fell 13.4% between 2000 and 2010, for Hispanic households they fell 27.8% and for African-American households they fell 28.2%, compared with 10.6% for White households, indicating that employment for Hispanic and African-American households in San José is at the median either substantially more precarious, less well-paid (and thus more susceptible to changes on a percentage basis), or both (Housing Element III-11). Similarly, while poverty rates (according to the federal level) increased by 50% between 2000 and 2010 in San José, for Hispanic and African-American households the incidence of poverty increased by about 75%; and,

whereas 7.1% of White individuals lived in poverty in San José in 2010, 20.9% of Hispanic individuals and 16.6% of African Americans did (Housing Element III-11). Finally, the foreclosure crisis disproportionately affected people of color in San José. Whereas homeownership rates declined by 1.6% among White households between 2000 and 2010, over the same period they fell 5.8% and 8.8% for Hispanic and African-American households, respectively (Housing Element II-8). This is not to forget that homeownership rates were lower to begin with, of course: Hispanic and African-American households are more likely to rent in the first place (and are thus more vulnerable to displacement or poverty from the dramatic increases in rents year-over-year), with Hispanic households 22.6% and African-American households 26.3% less likely to own their homes in 2000 when compared to White households, *before* the foreclosure crisis and recession (Housing Element II-8).

These economic outcomes follow geographic patterns as well. Figures 4-7, listed in the Appendix and culled from the City of San José's Housing Element, show the correlation between spatial distributions of income, overcrowding, rates of poverty, and race. Although a large stretch of south San José and parts of central San José have no single racial majority (which makes sense around San José State University), vast sections of west San José are majority White, north San José is predominantly Asian, and east San José is home chiefly to Hispanic households. East San José also has the highest rates of overcrowding, poverty, and the largest contiguous set of tracts with median household incomes below \$60,000, falling into the low-income category. West San José, on the other hand, has the largest contiguous stretches of census tracts with the

lowest rates of poverty, overcrowding, and median household incomes above \$100,000. Although rates of overcrowding could be (tenuously) linked to demographic differences, as Asian and Hispanic households may be more likely to be multi-generational or have larger family sizes, the coincidence with rates of poverty and low median household incomes suggests that overcrowding is a response to the unaffordability of housing. Furthermore, although the market for homes cannot be blamed in the same way as other socio-economic, structural forces perpetuating racist outcomes and inequalities of opportunity, inordinately high housing prices in San José resulting from an unnecessary scarcity of housing interact with such forces to reinforce rates of residential segregation, ghettoization, and geographies of inequality or inopportunity by pricing people of color out of expansive portions of the city and restricting those residents' choices vis-à-vis location preferences, neighborhood amenities, schools, social networks, and available jobs, while simultaneously reducing rates of wealth accumulation by making homeownership more difficult and promoting a dependency on renting, which places households at greater risk of displacement. This is all in spite of the fact that median household incomes in San José are among the highest in the country: the point is that housing costs are rising far faster than median wages, most especially for renters, a trend that can have dire consequences. For example, in a thorough 2013 survey of its homeless population (the third largest homeless population in the country, according to a 2012 HUD report), respondents indicated that problems finding housing were "almost solely income related" (Housing Element III-28-30) A third of those surveyed reported being employed, and two-thirds of respondents indicated an inability to afford rent as the

cause of their homelessness (Housing Element III-30). Lastly, while it should be noted that East and North San José were historically Hispanic and Asian neighborhoods, San José's development and growth are recent enough that historical segregation should not play as pronounced a role. Much of San José's now moderately segregated neighborhoods did not exist a half century ago: the median age of a housing unit in San José is 1972, and 80% of the housing stock was built in or after 1960 (Analysis of Impediments to Fair Housing 34; Housing Element II-20).

## V. Housing Policy

The City of San José is aware of many of these problems, and addresses them in its housing policy documents with varying degrees of thoughtfulness. The intentions and achievements of the city's housing policy, housing needs, and the interests of the market sometimes seem at odds, however. The city describes its policy in several reports, most prominently its "General Plan," which is updated every four years and sets goals for housing and job growth from the present until 2040, in addition to its Housing Element, which state law mandates it review and update every five to seven years. The city's policy sets three *primary* goals (i.e., besides secondary ones such as sustainability): regional housing needs allocations (RHNA), Urban Villages, and "Jobs First."

Regional housing needs allocations are determined initially at the state level, and then differentiated between regions, cities, and income levels. RHNA are intended to prevent cities from externalizing the costs of housing and displacing them to neighboring cities by not carrying a fair share of a regional labor market's housing needs, thereby



hopefully promoting broader regional equity. To this end, San José must meet its own RHNA, a quota for new residential development set every seven years, with given proportions of the new housing being affordable. The Association of Bay Area Governments, a coalition of 101 of the nine-county San Francisco Bay Area municipal governments and the agency that sets RHNA, estimates that between 2010 and 2040 the Bay Area will add 2.1 million net residents, 1.1 million jobs, and will need at least 700,000 new housing units (Housing Element III-2). With regards to San José, ABAG expects that it will accommodate almost 130,000 units, or almost 20% of the Bay Area's regional housing growth and 60% of Santa Clara County's by 2040, with a large (necessary) emphasis on the construction of affordable housing (Housing Element III-2). The City of San José's Housing Element explicitly doubts its ability to meet these obligations, however. The Housing Element notes that such projections imply an annual addition of "approximately 4,400 units over the 8-year planning period (January 2015 through January 2023), a pace that exceeds the City's historical experience with new housing in the past decade or more: since 2000, there have been only two years (2000 and 2003) where production has reached 4,000 or more units. Overall, housing production has averaged approximately 2,750 units annually over the 2000-2013 time period. Given the lower historical trends, it may be a challenge to actually produce the housing units to meet San José's RHNA, especially within the more affordable income categories" (Housing Element III-3). The Housing Element also notes that in the prior planning period San José was only able to meet 46% of its RHNA, compared to other cities in Santa Clara County that on average met 71% of their RHNA (Housing Element III-3).

For additional context, the City of San José's Q3 2015 housing statistics report notes that to date it had met 81% of its annual market-rate RHNA housing goal, but only 3% of its annual affordable RHNA quota (Housing Statistics Report: Q3 2015). Although the city prides itself on having issued building permits primarily, sometimes almost exclusively, for multi-family housing in the last two decades, it is arguable to what degree this is the result of city policy or the result of developers' preferring denser housing because it yields a higher rate of return in markets with high land prices (steeper bid-rent curves) such as San José.

The City of San José's calls another development goal the "implementation of the Urban Village concept," which amounts to a place-based, targeted growth strategy intended to prioritize denser, mixed-use development in roughly 70 specific neighborhoods selected for their proximity to transit options like the Valley Transit Authority light-rail system, their access to other existing infrastructure and amenities, and presumably their availability or need for redevelopment. The city intends this targeted-growth strategy to mitigate infrastructure burdens on a per capita basis, ensuring longer-term fiscal and environmental sustainability, and to create more walkable and bicycle-friendly communities with greater degrees of connectivity to amenities and employers. The city also hopes that such communities will be more attractive and accommodating to San José's changing demographics, which include not only growing segments of retirement-age individuals but also a larger cohort of young (hopefully college-educated) adults, whom the Housing Element notes "may have, and are already exhibiting, housing preferences beyond the traditional single family home for

more urban communities in closer proximity to transportation alternatives, jobs, services, and amenities... Thus, an important part of planning for San José's future housing needs is to diversify the city's largely suburban residential stock to include more urban, mixed use communities" (Housing Element II-4). In this sense, the Urban Villages concept appears to be deliberately promoting gentrification of certain neighborhoods as a development strategy by targeting investment in designated areas that it expects or hopes to become highly desirable by virtue of their access to infrastructure and amenities, desirability which should only increase as "the BART extension to San José, the addition of new Bus Rapid Transit lines, the electrification of Caltrain, and the proposed High Speed Rail, are being, and will be, made in the same future growth locations. The trend towards urbanization means that the land, property values, and rents in such locations will likely increase significantly... New residential developments will likely be highly amenitized and command premium pricing given their proximity to services, employment, and infrastructure" (Housing Element VI-4).<sup>4</sup>

This conclusion would be supported by the third primary component of San José's housing policy: a jobs-first emphasis. The city's housing policy expressly states as a precondition for any conversion of commercial sites to residential uses that the gross number of jobs be maintained (Housing Element IV-1). In addition, as a component of its General Plan and a complement to its housing policy, the city targets a J/ER ratio of 1.3 by 2040 (Housing Element I-2). Ostensibly, this makes sense: the city, cognizant of its

<sup>4</sup> Cf. Zuk, Miriam, et al. "Gentrification, Displacement, and the Role of Public Investment: A Literature Review," pp. 18-22 for a discussion of neighborhood gentrification that results from new public investment in transit infrastructure.

jobs “deficit,” believes that more opportunities for employment in San José among residents and a more competitive labor market should benefit households across all income categories. For lower-income households, a more competitive labor market theoretically will raise wages, hopefully mitigating housing burdens caused by low incomes, while a jobs-surplus should improve access to employment within the city, thereby reducing the burdens associated with longer commutes, auto-dependency, and spatial mismatches. The city argues essentially that a wider availability of employment opportunities will serve to preserve its pluralism and facilitate inclusion across racial, educational, and professional boundaries, reversing the current trend. This being a core principle of the city’s development strategy reveals the city’s true priorities, however. The city acknowledges that that “if the County as a whole remains housing-poor and if the City seeks to attain the same status, housing costs in both the County and San José could arguably be expected to increase significantly, thereby exacerbating existing affordability issues... if jobs created are not well paying” (Housing Element III-4; IV-5). Given that the city is also aware of its polarized distribution of incomes and that much of its future growth will be low-wage, for instance evidenced by the State Employment Development Department estimate that “from 2010-2013 approximately 48.3% of new job openings in the San José-Sunnyvale-Santa Clara area will be low wage jobs,” quoted from another section of the Housing Element, its commitment to providing affordable housing is questionable, especially in conjunction with the fact that the city understands that the areas it targets for growth will experience inflation in rents and home values (Housing Element III-9). Therefore, for the city’s projected development to be equitable,

wages must rise significantly at the lower-end of the distribution, probably faster than the costs of housing (wages have some catching-up to do already), and residential construction must not be limited by the fact that it must now simultaneously prove that it adds jobs (or at least takes none away—keeping in mind that commercial development faces no such restriction). Meanwhile, reality indicates that at least half of the city’s projected job growth will be low-wage, and the promotion of commercial development ahead of residential development as policy may undermine the accomplishment of RHNA quotas, so the case seems moot to begin with. The city’s housing policy appears to have the long-term intention of creating a more urban environment attractive to young, college-educated individuals who will assist in the growth of the city’s high-tech, professional industries. These industries have been shown to exert an influence on home values, and gentrifying its transit-connected neighborhoods at the expense (literally and figuratively) of low-income, predominantly Hispanic and African-American households who will be put further at risk of overcrowding, poverty, and displacement, precluding an unlikely and steep increase in wages in the bottom half of the distribution.

## **VI. Conclusion**

A discussion of the inadequate housing supply in San José, CA is relevant for three reasons. First, the use of land in the development of the city exemplifies many patterns that are common to all coastal Californian metropolitan areas. Development occurred rapidly after the Second World War and hastily converted land into sprawling, auto-centric, polycentric suburbs composed primarily of single-family homes, which to

this day comprise 64% of San José's housing stock (Analysis of Impediments to Fair Housing 32). Meanwhile, economies transitioned from predominantly agricultural bases to professional, high-value-added services, demonstrated by the growth of the high-technology industry in Silicon Valley during and after the 1960s. The lack of foresight in constructing such built environments led to a dearth of housing as developable land began to be exhausted and growth controls were implemented in the 1970s, while demand for housing in California continued to grow unabated. The undersupply of housing in these cities has resulted in inordinately high rents and home values, for example in San José, where 44% of all households were burdened by the cost of housing in 2010. Furthermore, housing affordability, within the larger context of structural and historical socio-economic differences between demographics, disproportionately affects households of color, who are then placed at greater risk of displacement, poverty, and homelessness among other things, making the issue of affordable housing a social concern of vital and immediate importance.

Second, the City of San José acts as an example of the growth of regional "innovation clusters" in the United States since the Second World War and their social consequences. Such "innovation economies" are characterized by a high (and growing) percentage of residents with college educations and the large presence and influence of high-skill, high-wage professional industries, such as the high-tech industry in the Silicon Valley and San José. Besides having some of the highest average wages in the country, these metropolitan areas also have some of the highest costs of living in the country as a consequence of their booming economies and the subsequent demand for

housing. While scholars like Enrico Moretti have shown that workers without college educations benefit (on average) from the strength of these economies, it is also clear that wages are stagnant for many workers in non-professional occupations and that in the absence of adequate housing construction, these workers are disproportionately affected by the higher costs of living. Changes in the distribution of incomes among households and occupations in San José show these patterns, which include a hollowing of the middle-class and a growing chasm between those who work in high-wage professional industries and those who do not, manifest quite literally in the city's residential segregation.

Third, San José's housing policies stand as an example of one municipality's efforts not only to confront a history of inefficient land use but also to adjust to this new national political economy and the city's position within the country's (perhaps the world's) strongest information-technology agglomeration economy (that of the San Francisco-Oakland-San José CMSA). The city, sharing both labor and housing markets with the rest of the Silicon Valley, must ensure that its housing stock satisfies the needs of not only current residents in terms of affordability, but also of the younger, college-educated residents the city hopes to continue to attract, who will presumably take part in the regional innovation economy, in order to ensure that the city benefits from "the new geography of jobs," to use Moretti's phrase. To this end, while the city professes a commitment to maintaining a supply of affordable housing, its focus on job creation before residential development and its "Urban Villages" strategy (while commendable and far-sighted) demonstrate that it prioritizes economic development over the housing

needs of approximately half of its current residents, who work in low-wage industries and who cannot easily afford housing, given the undersupply. Dwindling and already inadequate state funding for affordable housing programs, combined with the lack of meaningful municipal efforts, together illustrate the “new” national political economy: one where the private sector externalizes the cost of sufficiently compensating workers in pink and blue collar industries and the public sector fails to make up the difference because of disinvestment in public programs that support poor or vulnerable populations. One could call this the normalization of poverty, accumulation by dispossession, or a variety of other things but the point remains the same: the growing rates and magnitude of income inequality harm millions of people and in some cities trend towards the creation of a spatially and racially segregated underclass.



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## Appendix

Table 1: regression output from STATA 13.1, using Huber-White standard errors to control for heteroscedasticity in the data. The dependent variable is the median home value per square foot in San José from 2002 to 2013. The independent variables are the: aggregate payroll of high-tech industries in Santa Clara County; number of building permits issued for construction in the City of San José per year; and number of high-tech employees in Santa Clara County. All dollar amounts were adjusted for inflation and set equal to constant 2013 dollars using the CPI for the San José-San Francisco-Oakland CMSA obtained from U.S. Department of Labor Bureau of Labor Statistics. Effects in terms of standard deviations are given under the “Beta” column, thus allowing for a standardized comparison of the magnitude of the effect that each variable exerts. Changes in high-tech payroll in Santa Clara County exert the largest effect on the variance of home values in San José, while the number of building permits issued predictably show a negative sign, indicating that greater rates of construction do exert downward pressure on home values. The relationship is quite linear, with an  $R^2$  of 0.73.

```
. regress inflationadjustedhomevalues2013d inflationadjustedpayroll2013doll per
> mitsissued numberofhightechemployees, robust beta
```

Linear regression

```
Number of obs =      12
F(   3,       8) =      6.62
Prob > F       =    0.0147
R-squared      =    0.7293
Root MSE     =    43.259
```

inflat~2013d	Robust				Beta
	Coef.	Std. Err.	t	P> t	
inflationa~l	.0000182	5.89e-06	3.08	0.015	.662285
permitsiss~d	-.0223941	.0087528	-2.56	0.034	-.3510997
numberofhi~s	.0031437	.0016111	1.95	0.087	.4190015
_cons	-601.34	285.8472	-2.10	0.069	.

# THE ECONOMICS OF WOMEN'S ABORTION RIGHTS: LINKING ABORTION TO HIGH SCHOOL DROPOUTS, CRIME, AND GDP

Fall 2015

BY Caroline Lefever, Sophomore, Political Economy  
EDITED BY Boris Shkurko

## I. Background

According to analyses conducted by Dennis M. Howard (2008), president of the pro-life group Movement for a Better America, the United States has lost \$35 trillion dollars in Gross Domestic Product (GDP) since 1970 due to the economic impact of abortion on tax revenue and the American workforce. In the past few years, conservative legislators have begun a crusade against reproductive health services in their states (Planned Parenthood, 2015). Between 2011 and 2013, more state abortion restrictions were enacted than in “the entire previous decade” – unfortunately, the onslaught has not decelerated since (Guttmacher Institute, 2015). The Guttmacher Institute (2015) reports that in the first quarter of 2014, lawmakers in 38 states introduced over 303 provisions to limit abortions and

access to reproductive care, of which 27 were passed. Now in 2015, 51 new abortion restrictions have been enacted across the nation (Guttmacher, 2015). While it is recognized that these institutional constraints influence economic behavior (Buchanan, 1962; Roberts, 1973), the legislative limits serve to be much more adverse than constructive. Contrary to what Dennis Howard states, stringent women’s health policies actually hurt the economy and produce substantial losses (Smith, 1976). This paper presents a model suggesting that the socioeconomic costs of high school dropouts, crime, and reduced female workforce related to the absence of abortion services are far greater than the \$35 trillion related to the presence of legal abortion. Therefore, it is in the United States’ best financial interest to generate an abortion-friendly climate where states follow liberal

women’s health agendas akin to those in California.

## II. Methodology

For simplification, this paper synthesizes numbers to per year estimates. The \$35 trillion loss can thus be truncated to roughly \$900 billion a year over the 1970 to 2008 period Dennis Howard evaluated. The goal now becomes to show that the loss per year due to an absence of abortions exceeds the \$900 billion loss per year because of abortions.

The variable this research is concerned with is the legal constraint placed on abortion clinics that make them inaccessible to women. The model makes counterfactual calculations *ceteris paribus* to determine the effect that eradicating legal abortions would have. Legislative scorecard grades from Alli-

ance for a Just Society (2014) were used to choose the states featured in this paper because it is necessary to compare places that differ dramatically in women's health policy and isolate the economic benefits of abortion. California is ranked as abortion-friendly with an A- grade while Texas, Mississippi, and West Virginia are ranked as unfriendly with failing grades (Alliance for a Just Society, 2014). Thus these states were chosen to participate in this study. By juxtaposing the economic cost of teenage pregnancy and crime associated with high school dropouts in California, Texas, Mississippi, and West Virginia, it is apparent that liberal, abortion-friendly governance procures the least costs per capita in each of these categories. Because teenage pregnancy contributes to multi-generational high school dropout and crime, it makes sense to relate these back to abortion since it can resolve teenage pregnancy.

After establishing the correlation between liberalized abortion services and lower rates of high school dropout and crime, the model uses national statistics to prove that the counterfactual (an absence of abortion) would induce a much more egregious loss to the U.S. GDP per year than the current factual (the existence of abortion) because of high school dropouts, crime, and a diminished female workforce. The data used in these calculations are estimates collected from credible agencies such as The World Bank, the Guttmacher Institute, United States Health and Human Services, the Center for Disease Control, Planned Parenthood, Children Now and the McKinsey Global Institute. Despite comprehensive data, information

on the average economic benefit of a high school graduate to the states of Texas, Mississippi, and West Virginia was not available. For convenience, the economic benefit of a high school graduate in California is used in each calculation instead. Another possible deficiency is the average number of abortions a year because it varies by source; this paper analyzes a worst-case scenario and assumes the average number of abortions a year is roughly 1.2 million (Sonfield et al., 2013). In summary, it is hypothesized that the average loss in a nation without abortions equals almost \$1,400,000,000,000 per year and exceeds the \$900 billion loss purported by pro-life advocates. After breaking down the costs of increased high school dropouts, crime, and alienation of the female workforce, it is evident that eliminating abortion would not be a wise economic policy. Thus, lawful abortions benefit American society and should be made accessible to citizens in all states.

### **III. Findings and Analysis**

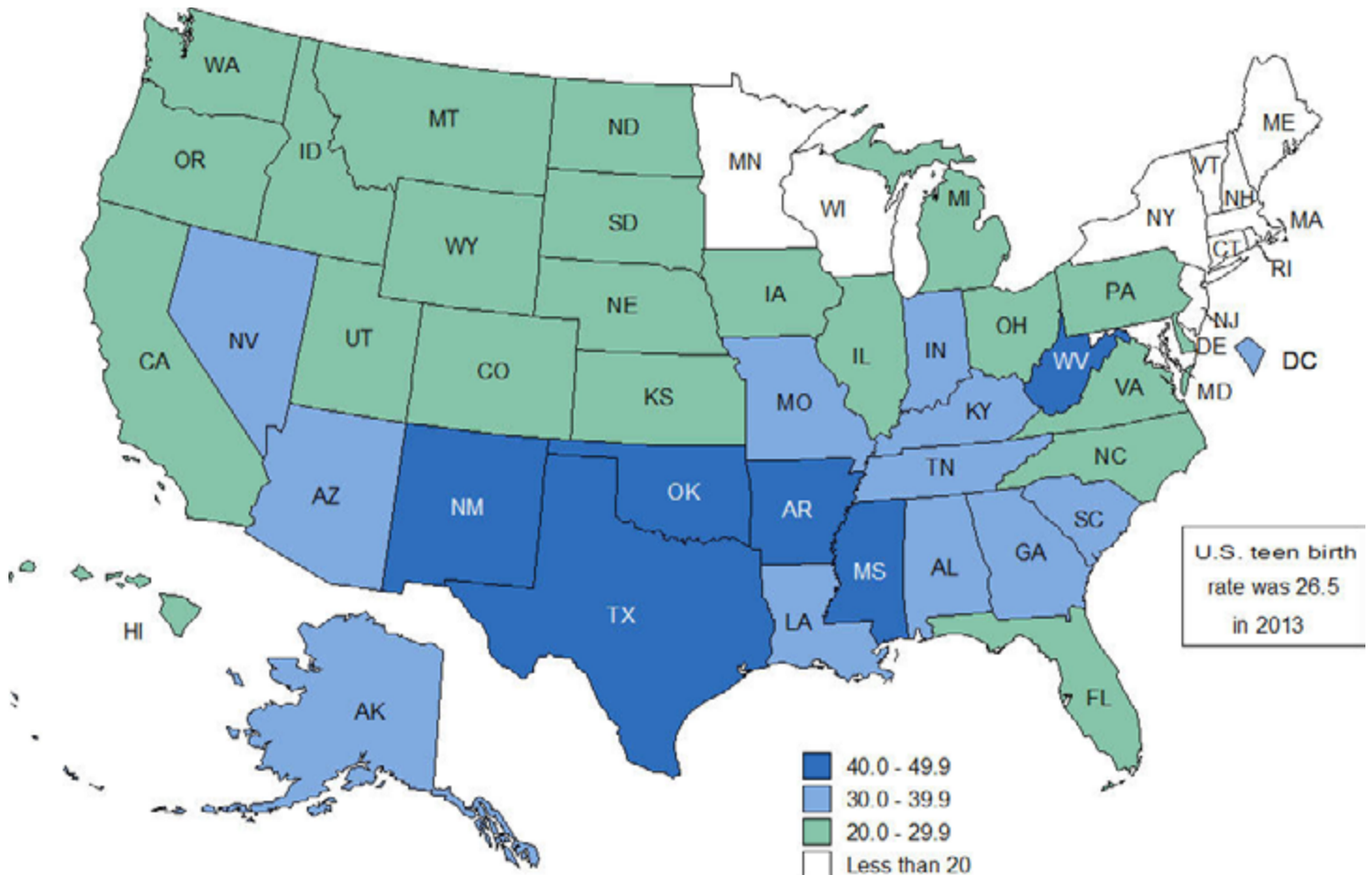
#### **A. High School Dropout Rates and Pregnant Teens**

Without legal abortion in the United States, teenagers who currently utilize preventative procedures would be forced to drop out of high school, costing the nation a total of \$293,983,200,000 in lost potential economic benefit. This assertion is supported by the fact that every high school graduate in California generates almost \$400,000 in total economic benefit (Children Now, 2010). Tying that statistic to teen pregnancies on the state level in California, Texas, Mississippi, and

West Virginia, it appears that states with restrictive abortion measures lose more money than states with more liberal women's healthcare policies. Thus, states should make abortions more readily available to their constituents to save money.

According to the Guttmacher Institute (Sonfield et al., 2013), about 1.2 million abortions are performed every year. Of these 1.2 million procedures, 614,000 are for high school aged females 15-19 years old. Taking away abortion access for those 614,000 young girls who need that service augments the high school dropout problem among teenage girls. Considering the fact that over 90% of pregnant teens (Teen Pregnancy Statistics, 2009) will drop out of high school, this means that 552,600 of the 614,000 girls will drop out because they no longer have institutionalized preventive options. Now, accounting for the fact that high school dropout is a multi-generational concern and 33% of children (National Conference of State Legislatures, 2008) born to mothers who dropped out also do not complete high school either, that is another 182,358 students who will not graduate. Multiplying the loss in economic benefit of \$400,000 per student with the 734,958 teen mothers and their children who will not complete high school results in a \$293,983,200,000 total forfeiture in potential economic benefit. The net deficit produced by a removal of abortions would hurt the nation by billions of prospective dollars just in high school dropouts alone.

In terms of the teen pregnancy rate, California averages 59 incidences of teenage births per 1000 girls while Texas, Mississippi, and



West Virginia average 73/1000, 76/1000, and 65/1000 respectively (United States Health and Human Services, 2013). For actual teenage births, California averages 23 per 1000 girls, while Texas, Mississippi, and West Virginia average 51/1000, 47/1000, and 40/1000 as seen in Figure 1 (Center for Disease Control, 2013). From these numbers, it is evident that more abortion-friendly states, such as California, see both lower rates of teenage pregnancy and lower rates of teenage births. By subtracting the teenage births from the teenage pregnancies, it is possible to calculate the approximate number of abortions that occur per state. Roughly 36/1000 girls terminate their pregnancies in California, 22/1000 in Texas, 29/1000 in Mississippi, and 25/1000 in West Virginia. Again, the data is

consistent in showing that states with more liberal women's health policies tend to have more girls who utilize those resources, while states with unfavorable abortion measures tend to have more teenage mothers per 1000 girls. Because pregnant teenagers have high rates of high school dropout (over 90%), states with lower numbers of teenage birth will have fewer girls that dropout of high school. Consequently, California retains billions of dollars more in economic benefit than Texas, Mississippi, and West Virginia because more girls get abortions and fewer actually give birth. If more teens from Texas, Mississippi, and West Virginia chose to get abortions, those states too could save billions more in economic benefit. Overall, high school dropouts in a world where abortions are banned would severe-

ly damage the nation because billions of dollars in economic benefit would be lost and subtracted from the U.S. GDP.

## B. Crime Rates and Abortion

Multiple studies suggest that abortion has been beneficial to the economy because it has reduced crime and saved money in law enforcement. This implies that should abortions be abolished, crime rates would rise and the government would have to spend more money on incarceration, hurting the economy by taking funding away from services such as education and healthcare. Freakonomics (2005) authors Steven Levitt and Stephen Dubner argue that "legalized abortion led to less unwantedness; unwantedness leads to high crime; legalized abortion, therefore, led to

less crime.” The Quarterly Journal of Economics (2001) even goes on to declare that “legal abortion accounts for 50% of crime reduction” since the 1980s.

To translate these statements into numerical calculations, the previous section’s statistics on high school dropouts will be recycled. Given that “society could save \$209,000 in prison or jail costs for every high school dropout” that is incarcerated and that approximately 40% of the individuals who do not earn a high school diploma end up in jail or prison (McKeon, 2006), it is possible to calculate the money lost in corrections spending due to abortions. Taking the 40% of the 734,958 teen mothers and their children who would be high school dropouts without legal abortions and multiplying that by \$209,000 gives \$61,442,500,000 wasted on increased corrections spending. This statistic does not even account for the fact that allocating more money toward prisoners would take funds away from indispensable programs like education or health-care— which would magnify economic detriments further. Without abortions, not only would there be billions of dollars lost in potential economic benefit, but also billions of dollars wasted due to increased imprisonment.

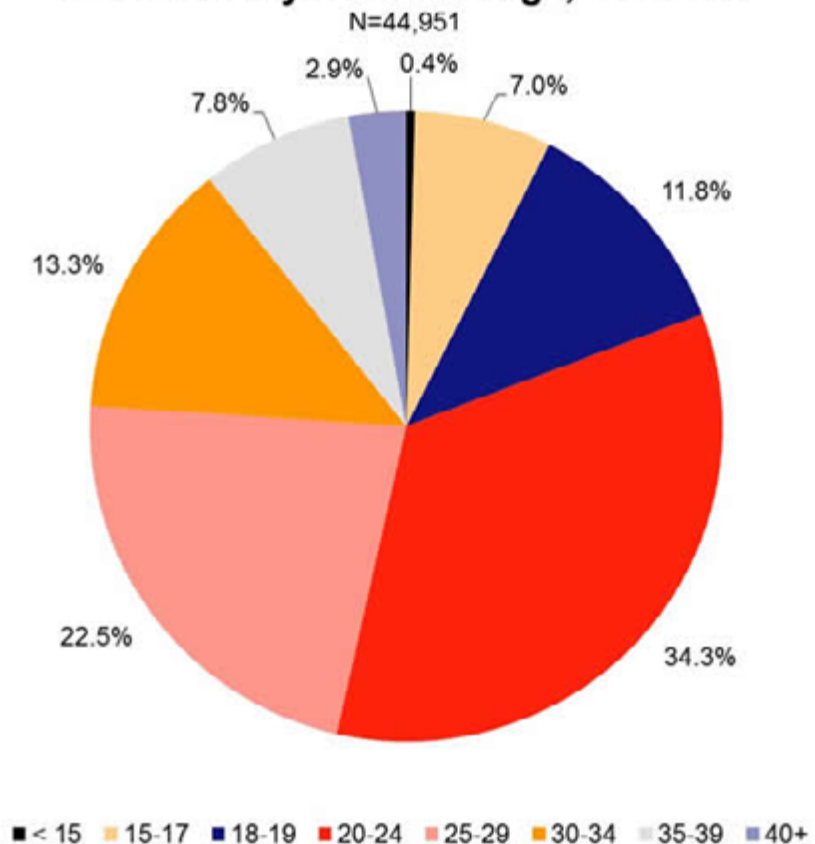
Statewide crime data in California, Texas, Mississippi, and West Virginia also support the claims made in Freakonomics (2005) and The Quarterly Journal of Economics (2001). In more abortion-friendly states like California, instances of total crime per 1000 residents are much lower than in more restrictive states. Texas, Mississippi, and

West Virginia have 34, 30, and 28 total crimes per 1000 residents respectively while California has 26 (Neighborhood Scout, 2015). This evidence demonstrates that abortion is related to crime since states where abortions are more common also exhibit lower crime rates. Like Levitt (2005) recommends, if states want to be more economically savvy with how they spend their funds, increasing availability of abortions is a smart first move. If states follow California’s lead, crime rates could decrease even further and billions of dollars in prison spending could be salvaged. In sum, abortion has saved Americans almost \$100 billion in prison and jail spending. The nation is much better off with abortion than without it.

### C. Female Workforce Reduction

The greatest financial impact of outlawing abortions in America would be caused by decreases in the female workforce. As shown in Figure 2, out of the 1.2 million abortions performed per year, about 50% are for working age women twenty-five and older (Sonfield et al., 2013). Furthermore, it is predicted that nearly 1 in 3 women will seek abortions in their lifetimes (Planned Parenthood Action Fund, 2013). Because women are a significant source of labor today, the abolishment of abortions would wreak havoc on the labor force and GDP. Masses of women would have to leave their jobs for child-

**Figure 2**  
**Abortions by Woman's Age, 1999-2010**





bearing every year and productivity would suffer tremendously.

The McKinsey Global Institute reports that women now constitute 47% of the United States' workforce and contribute 41% of the national GDP (Woetzel, 2015). Since the current U.S. GDP is about \$17,419,000,000,000, that means women currently generate \$7,141,790,000,000 in GDP annually (The World Bank, 2015). Deducting the GDP contributions from women who would be forced into childbearing and leaving the labor force would determine the predicted loss associated with the banning of abortion. Assuming that the 33% of women who currently have had abortions in their lifetimes would have been forced to birth children, and that 43% of women who have children leave their jobs permanently (Sandberg, 2013), this means that a  $(0.33) \times (0.43) \times (\$7,141,790,000,000) = \$1,013,420,001,000$  loss would accrue due to these women not having abortions. This calculation does not even consider the harms that may result from a lack of gender equality in the work place. Studies show greater levels of gender equality in the workforce correlate with higher levels of GDP (Woetzel, 2015). If abortion had not been institutionalized, it is likely that the number of women in the workforce would be much smaller; therefore, gender equality would diminish. This could add further damages on top of the \$1 trillion already estimated. The statistics corroborate that abortions are an opportune investment for the United States and that the country is better off with abortion than without.

#### **IV. Conclusion and Confounding**

In conclusion, the ramifications of eliminating abortions totals to \$1,368,845,701,000 per year. The missed economic benefits of female high school graduates, the amplified corrections costs, and the direct GDP loss due to women who could not get abortions snowball into a deficit far larger than the alleged \$900 billion in losses from legalized abortion. Dennis Howard's contention that the United States would be a better place without abortion is unfounded and overlooks the broader implications of a nation without essential reproductive services.

While the data does weigh in favor of abortions, it is important to note alternative explanations for the results. For example, in calculating the approximate numbers of abortions per state in the High School Dropout section, this paper did not account for miscarriages that could also influence the number of teenage births. Furthermore, confounding may exist for the crime rate of high school dropouts because media, prevalence of gangs, and socioeconomic status can also increase criminal tendencies.

A future study could be conducted to further discuss whether liberalized women's health agendas are beneficial by quantifying legal abortion trends under Republican versus Democratic leadership. Some scholars suggest that the number of abortions actually decreases under progressive administrations because females have more access to contraception (Planned

Parenthood Action Fund, 2013). If this is the case, pro-life advocates who strive to eliminate abortions may want to consider switching sides and joining the Democrats in expanding women's healthcare rather than impeding it.

Ultimately, there is much to be studied regarding the economics of women's health. Regardless of religious belief or political affiliation, it is undeniable that women play a vital role in American society, and it is in the best interest of government policy to continue promoting their wellbeing.



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# Olive Oil | A Promising “Elixir” for Rural Development in Morocco?

BY Stergiana Amberiadis    EDITED BY Boris Shkurko

## I. Overview

Coined “liquid gold” by the Cretans, olive oil played a valuable role in Ancient Greek life – its nourishment sustained populations, its fuel was used in lamps to illuminate the darkness, and its trade potential opened a plethora of export opportunities with other Mediterranean lands. Fast-forward to today, and olive oil is a staple in households around the world, with an overall global consumption of over 2.5 million tons each year (Turkekul 41). The “Mediterranean diet” has become the ideal mode de vie of the decade for the health-conscious consumer, creating niche markets with an increased demand for extra virgin, high-quality oils with unique flavor profiles. Although the EU dominates this industry, accounting for 55% of the world’s olive oil exports, four main countries comprise the rest of the market – Tunisia, Turkey, Syria, and Morocco respectively (Turkekul 41). With the emergence of these markets, there is a unique opportunity for

countries with the adequate resources to scale their olive production and invest in increasing their market share in the global olive oil “arena”.

Poverty within the MENA region remains largely a rural phenomenon. Out of MENA’s three main olive oil producers, the rural poverty rate is highest in Morocco – roughly one Moroccan out of four is poor in rural areas, compared to one out of ten in urban areas (World Bank). Over the past ten years, Morocco has steadily increased its share of global olive oil production from 3% to 6% despite periods of drought that have weakened its agricultural sector (Lybbert & Elabed 481). With the ideal climate for olive cultivation and rich soils, the thousands of hectares of land currently left undeveloped in Morocco’s rural landscape present an opportunity in the minds of foreign investors and Moroccan government to grow the country’s economy. Although the billion dollars

of capital inflow to Morocco’s agricultural sector have the potential to make promising progress in the country’s development, the systemized approaches outlined in their implementation mainly focus on one key objective – realizing the highest profit margins in niche commodity production. With an unequal emphasis placed on securing Morocco’s international market share, increasing the productivity of large-scale producers and modernizing olive oil production, these massive streams of investment do not directly address the underlying causes and implications of rural poverty. Instead, they precipitate a larger divide between the rural poor and rural “elite”, do not socially nor politically contextualize the impact of the farmers’ access to proper financing, and further the power relationships apparent in irrigation – limiting olive oil’s potential as a promising “elixir” for rural poverty alleviation and development in Morocco.

## II. Domestic Investment

Viewed as an opportunity to impact Morocco both socially and economically, “Le Plan Maroc Vert,” or Green Morocco Plan, was the Moroccan government’s largest instrumental investment in the agricultural field to date. Implemented by the Ministry of Agriculture in 2008, the multi-billion dollar plan set out to build “an all-inclusive agricultural sector” through a two-tiered structure, aimed at increasing the country’s macroeconomic stability and GDP while simultaneously promising a “potential massive social impact” (“Le Maroc Vert” 2). The Green Morocco Plan is divided into ‘Pillar I’ projects, which focus on developing Morocco’s productivity in high-value added commodities through an investment in farming technology, and ‘Pillar II’ projects, which aim to support and modernize small-scale farmers through scaled-down capital flows. Sandwiched between the two pillars, olive cultivation and oil production is viewed as a key area for growth in the plan; classified as a heavy-weight sub-sector which has had “difficulty taking-off” and “requires an ambitious recovery plan” (“Le Maroc Vert” 24). Through this structural divide, the bulk of the government’s reform strategy relies on ‘Pillar 1’ projects, which target farmers with prior access to irrigation plots, infrastructure,

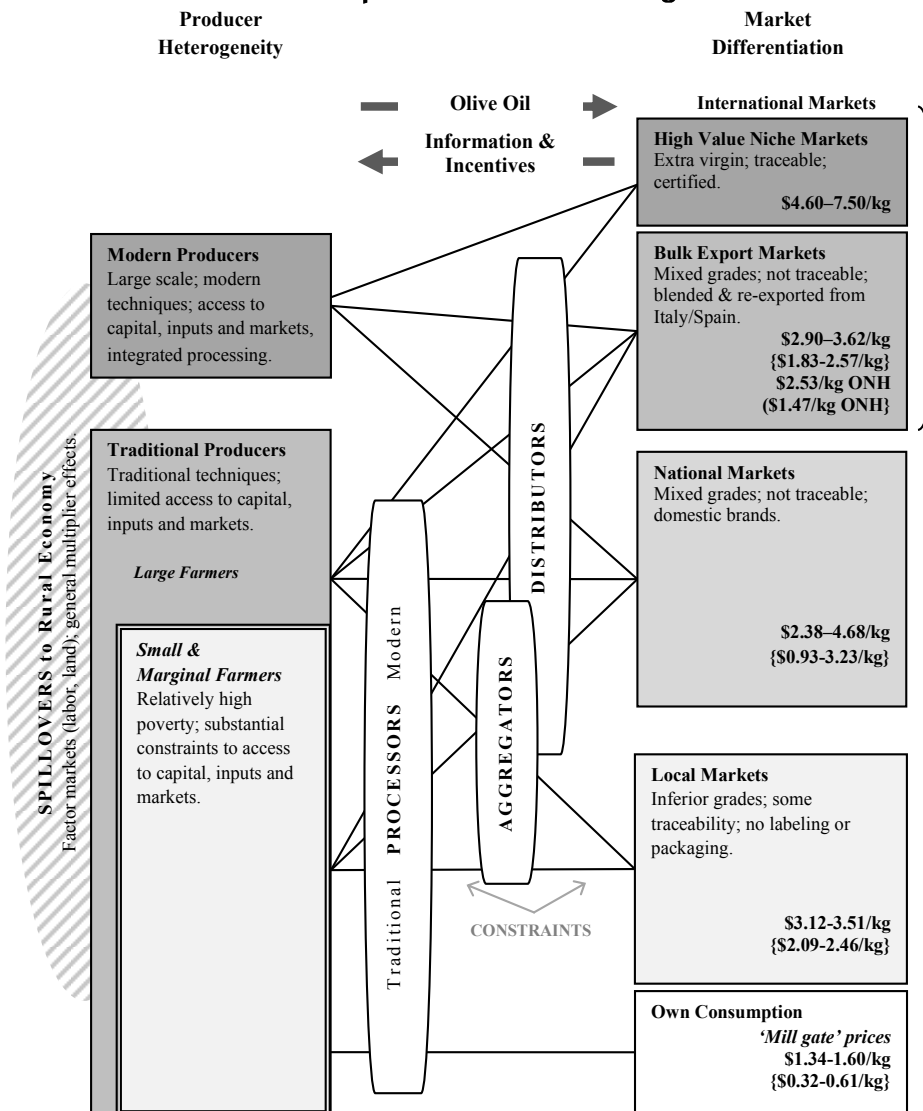
and technology. One defining characteristic of Morocco’s rural poor is that agriculture serves as the dominant source of income for 75% of households. Although the rural poor typically have access to agricultural land, their holdings are small (averaging about 2 hectares), rarely irrigated, and anywhere from three to six times less productive than their large-scale, technologically advanced counterparts (Minot 115). The main obstacle the rural poor face is that their holdings are either unregistered with the local government or rented from an urban landowner, making it nearly impossible to obtain a formal line of credit and invest in their holding’s cultivation. As a result, the poor’s lack of access to substantial financing disables them from following more “modern” farming practices like high-density planting and mechanized harvesting – making it difficult for them to compete with the major stakeholders of land plots in terms of final product pricing, differentiation, and quality. With the overarching goal of accelerating growth in olive cultivation and oil processing, the Green Morocco Plan dedicates the majority of its funding towards “intensifying” pre-existing olive groves and strategically partnering with established oil processors to increase their integration into the export economy. By comparison, a formalized investment of 110 billion Moroccan dirhams (MAD),

or around 11.37 billion USD has been allotted to target these established producers, whereas the funds geared towards the plan’s “social investment” totals only 15 billion MAD, or 1.55 billion USD (“Le Maroc Vert” 16). The unequal distribution of financing parallels the unequal distribution of wealth and access to agricultural infrastructure realized in rural areas of Morocco, leaving the modest farmer forgotten once again in the country’s economic quest for modernity.

When it comes down to determining which of the 300 to 400 targeted farms outlined as ‘Pillar II’ projects in the Green Morocco Plan are “worthy” of receiving foreign aid, issues of scale arise (“Le Maroc Vert” 25). In an interview with Aziz Akhannouch, Morocco’s Minister of Agriculture, he addresses the debate over the plan’s implementation when he writes:

*Our ambition is to achieve management flexibility within the framework of a model that is as close as possible to independent and efficient private management and that is to serve farmers. Should we target the large farms, or generalize at what level? How do we define a large farm and define its types of culture? This is a very complex issue... The priority is the debate to give the serenity and security to investors who have engaged in the Green Morocco Plan (L’Economiste).*

**Figure 4: Heuristic framework for assessing the rural poverty impacts of olive oil policies in the MENA region**



Although Akhannouch mentions that the plan wants to “serve farmers,” he makes it apparent that the government’s interest is in maintaining the “security” of its stakeholders – shaping a fundamental disparity between the plan’s goal of addressing rural poverty and the means through which it is accomplished. Does the Moroccan Government place an emphasis on realizing the success of ‘Pillar II’ projects, or are they viewed as positive externalities in the fulfillment of ‘Pillar I’, which ensure the fulfillment of a maximum return on investment and a stable stream of revenue to Morocco’s economy? Moreover, within the plan’s “complexity” lies a stratification of services whose fulfillment is dictated by the supervision of the newly launched “Green Morocco Development Agency”. The agency’s main objective is to monitor the “high-risk” projects and provide support with training and management issues that arise in olive’s cultivation (“Le Maroc Vert” 20). In order to achieve a \$70 billion increase in GDP, Morocco’s government goes to great measures to realize the economic gains from their investments, prioritizing profits and “growth” above the underlying systemic issues of poverty that plague their citizens’ welfare. By implementing a system that is concerned with closely monitoring and regulating the product of their investments, the Moroccan farmer becomes an “object of development” of the political elite.

### III. Foreign Investment

In conjunction with the Green Morocco Plan, the Millennium Challenge Corporation, a U.S. bilateral foreign aid agency, launched a \$700 million collaborative project to increase olive fruit tree productivity and facilitate the integration of high-value processors of oil into both the domestic and export markets. Given the 282% expected expansion in olive production by 2020 through a dual funding framework, an influx of “jobs created” within the agricultural sector is estimated to exceed 30,000 (“Invest in Morocco” 8). However, who are the primary beneficiaries of these investments? In the olive oil value chain, the individuals or organized growers who harvest and store olives are subject to the terms and conditions of the collectors, or intermediaries that facilitate the exchange with the mill processors (“Invest in Morocco” 15). This scheme, similar to contract farming in agri-business, places the control of the olive exchange within the hands of the advantaged intermediaries who determine the amount of payment the farmers receive. Oftentimes, there are fluctuations between what these mediators want to pay for olives and what they should pay, leaving unrepresented farmers under-compensated or at a loss.

### IV. Political Economy

The massive inflows of investment into olive cultivation fail to take into consideration the increasing unreliability of agriculture’s most important resource – water. With drought frequencies having risen from one event every 10 years in the 20th century to five or six in the 21st century, water has become the most volatile factor of production in Morocco’s agricultural sector (El Khatri & El Hairech 1). With the large expansion of land dedicated to planting new olive groves and the production of a “high-value” commodity comes a higher demand for farm labor – but does a reduction in rural poverty follow suit? A case study conducted by the Institute for Food and Resource Economics at the University of Borne analyzed the impacts of changing water inflow distributions on farm income within the Drâa River Region, otherwise known as the “Valley of Olives” in the 19th century. Taking climate change and drought projection into consideration, the study predicted their effects on the income of roughly 40,000 employed farm workers in the region. The Institute’s model calculated a 13% increase in the number of farmers receiving less than 20 MAD, or 2 USD a day over a period of three years, resulting from a decrease in reservoir inflow (Heckelei and Heidecke 143).

In absolute terms, the number of individuals approaching the poverty line surges dramatically, as the supply of cheap and accessible labor greatly surpasses an existing demand with more costly and scarce inputs. Inherently, the lack of water in olive cultivation not only serves as a limitation to alleviate rural poverty, but also as a source of conflict between small-scale and large-scale farmers. In the Souss Valley, a highly fertile region of Morocco, large landowners account for only 6% of the region's farmers, yet control 32% of its underground water supply. On the other hand, small-scale farmers, who represent 62% of farmers within the region, control barely 13% of the available water supply (Houdret 291). The uneven distribution of water in olive oil production feeds the disparity between the rural upper and lower classes, as with more water comes more control in economic, political, and social contexts. By focusing on large-scale farms to drive exports in olive oil production, the Moroccan government fuels agriculturally advantaged monopolies, marginalizing the economically disadvantaged yet again.

Finally, there is a critical "gendered" dimension that must be taken into account when determining olive oil's potential for rural poverty alleviation. In Moroccan agribusiness, roughly 70 to 80% of farms' employees are women.

Moroccan women constitute the largest vulnerable social group in the country, with the highest levels of socio-economic and legal constraints that intensify their exclusion (Skalli 2001). Many face long hours on the fields, informal wages, and toxic work conditions that heavily impact their standard of living and welfare. Despite having a "stable" income through an increase in jobs in olive cultivation, the Ministry of Agriculture's assessment of poverty is gender-blind, failing to account for the social, cultural, and community differences that the impact of poverty has on females versus males within households. What is important to recognize in providing access to capital for small-scale farmers is not necessarily how much aid is administered, but how the aid is received by the respective recipient or household that accredits it. In the Moroccan rural population, a woman heads only one of six households. Additionally, illiteracy among this segment totals 83.3% of females, illustrating a serious deprivation that underscores even the most targeted poverty alleviation strategy (Skalli 2001). By providing only financial support without providing human rights, like comprehensive access to education, the fundamental systemic issue of gender inequity in Morocco perpetuates a cycle of social exclusion in an agricultural as well as communal context.

## V. Conclusion

Mirroring the complexity of its many flavor profiles, olive oil's potential as a vector for rural development and poverty alleviation in Morocco can be perceived differently from individual to individual. On one hand, massive streams of investments into the country for the production of a niche commodity seem promising, as they enable farmers of various sizes the freedom to engage in a global neoliberal market exchange. However, with the Moroccan government's increasing push towards globalizing their position in the export economy, the modest farmer becomes lost in the country's international pursuits. Moreover, the social impact precipitating from Morocco's "aggressive" strategy for olive oil production is framed along the lines of a positive externality realized from a traditional market transaction rather than it being the primary focus of these ventures. The growing disparity between the simple rural farmer and the technologically privileged "elite" furthers the burgeoning issue of inequality within agricultural farming, limiting the olive tree's likelihood of reducing rural poverty in relative terms. Without taking into the consideration the complex sociopolitical implications of rural poverty's multidimensionality, its underlying systemic issues become perpetuated rather

than solved – a problem with attempting to apply market solutions to humanistic, social battles.

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# Corporate Social Responsibility: Divergence from Marx's Prescription or Capitalist Tool for Profit?

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BY Mark Lipkin  
EDITED BY Boris Shkurko

## I. Introduction

Corporate Social Responsibility developed during the middle of the 20th century in response to growing concerns that corporations, following the profit motive, were prone to engage in behaviors that exploit the environment, workers, or both. Corporate Social Responsibility (CSR) departments are now ubiquitous in most large corporations across the US. For the purposes of this paper, Keith Davis' (1973) broad definition of CSR, as quoted by Archie Carroll, will be applied:

*...the firm's consideration of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm. It is the firm's obligation to evaluate in its decision-making process the effects of its decisions on the external social system in a manner that will accomplish social benefits along with the traditional economic gains which the firm seeks... A firm is not being socially responsible*

*if it merely complies with the minimum requirements of the law, because this is what any good citizen would do* (Carroll 277).

Although CSR initiatives may claim to diverge away from the profit motive, it is important to note that economic gains are not written out of Davis's definition. Production is the "process of creating value" (Marx 293), and CSR, as a part of the production process, cannot detract from the value of the product. Marginal cost must be less than or equal to the marginal revenue; otherwise, the capitalist will not produce—CSR cannot be viewed independently from this framework.

Corporate Social Responsibility, as a process which redirects resources away from the immediate drivers of production, towards the provision for social good, appears to contradict Karl Marx's prescription for capitalism in Capital. This

paper will focus on this tension, exploring the economic theories of Milton Friedman and Karl Marx to understand the place of CSR within the capitalist production process. Friedman writes, "there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud" (Friedman 1970). Friedman disregards CSR not only as anti-capitalist, but harmful to all members of society. Marx does not contradict Friedman's thesis. Marx argues, however, that the capitalist is unable to break free from exploitative processes—"Constant capital, the means of production, only exist, considered from the standpoint of the process of valorization, in order to absorb labour and, with every drop of labour, a proportional quantity of



surplus labour” (Marx 367). Any failure to do so leads to a loss for the capitalist and the capitalist will thus be driven to exploit as much labour as possible. Marx’s theory dictates that we view CSR either as a great affront to his prescription of capital or a tool by which capitalist goals can be furthered.

Where Marx critiques the capitalist system, Friedman praises it, yet they both agree: the capitalist must valorize capital (i.e. profit). For Friedman, this is morally imperative; for Marx, it is beyond the individual capitalist’s control. Throughout this work, I intend to show that both Friedman and Marx are, at least in part, correct; however, where Friedman mistakes the nature of CSR as a confrontation to the capitalist process, Marx fails to ascribe to the capitalist the ability to creatively navigate throughout the process of production. Corporate Social Responsibility is a capitalist tool that serves the process of valorizing capital, while simultaneously allowing the capitalist to both serve his own long-term interest and curtail worker rebellion, which may arise in response to exploitative practices.

## II. CSR as Anti-Capitalist

A common view, held by both opponents and proponents of Corporate Social Responsibility activity, conceptualizes CSR as either working against or breaking away from the capitalist system. The most notable critic of CSR, as mentioned previously, is Milton Friedman. In his book, *Capitalism and Freedom* (1962), Friedman

argues that “Few trends could so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as much money for their stockholders as possible.” He argues that businessmen are incapable of knowing what socially responsible initiative they are bound to, as their one role is to maximize profit for their stockholders (Friedman 1962, 133). Thus, not only does Friedman argue that businesses overstep their moral bounds by creating departments to address questions of social responsibility, but should not even consider engaging in philanthropic or charitable activity on any scale.

Friedman anchors his argument in the premise that by allocating company resources to anything other than maximizing profits, the business is, in effect, imposing a tax upon both the shareholders and the public. He writes:

*This process raises political questions on two levels: principle and consequences. On the level of political principle, the imposition of taxes and the expenditure of tax proceeds are governmental functions. We have established elaborate constitutional, parliamentary and judicial provisions to control these functions, to assure that taxes are imposed so far as possible in accordance with the preferences and desires of the public—after all, “taxation without representation” was one of the battle cries of the American Revolution. We have a system of checks and balances to separate the legislative function of imposing taxes and enacting expenditures from the executive*

*function of collecting taxes and administering expenditure programs and from the judicial function of mediating disputes and interpreting the law* (Friedman 1970).

For Friedman, such an allocation of resources is representative of a lack of freedom—a step “toward the corporate state” (Friedman 136). The one method available to businesses for creating social good entails a sole focus on the maximization of profits. The role of government, according to Friedman, is to create systems that support the maximization of profit and allow for the invisible hand to regulate markets and industry.

## III. CSR as a Means to Profit

On the other hand, a recent and growing body of literature has emerged that points to the link between profitable businesses and the implementation of Corporate Social Responsibility. Hernández-Murillo, Ruben, and Martinek (2009) identify three motivations for firms to engage in CSR: altruistic, where the firm’s objective is to produce a desired level of CSR with no regard for maximizing its social profits; egoistic, where the firm is coerced into CSR by outside entities scrutinizing its social impact; and strategic, where the firm identifies social activities that consumers, employees or investors value and integrates those activities into its profit-maximizing objectives. Hernández-Murillo et al. base their argument on previous theoretical and empirical analyses which indicate that socially responsible

activities can generate profits by “enhancing the firm’s reputation,” increasing the firm’s “ability to attract more highly qualified personnel,” and enabling the firm “to extract a premium for its products” (Hernández-Murillo et al. 5).

Friedman acknowledges that a capitalist may, at times, engage in actions that serve their long-run interests and also have a positive social impact. Ruben et al. mention that “investments in the community that can improve the quality of potential employees, or contributions to charitable organizations to take advantage of tax deductions” coincide with the interests of a capitalist and “generate corporate goodwill as a byproduct.” They continue: “...this goodwill can serve to differentiate a company from its competitors, providing an opportunity to generate additional economic profits” (Ruben et al. 4).

A firm’s actions in the name of goodwill have the capacity to motivate employees to apply more time and effort to their work. As such, CSR holds the capacity to further the capitalist’s ability to extract surplus labor. Marx writes, “The rate of surplus-value is therefore an exact expression for the degree of exploitation of labour-power by capital, or of the worker by the capitalist” (Marx 326). Thus, if CSR is capable of motivating workers, then it may also be capable of creating surplus value for the capitalist—creating profit. The capitalist, Marx argues, will be moved to put laborers to work for the entire duration of their capacity to do so. Social Corporate Responsibility efforts, through the

capacity to motivate workers, encourage workers to work longer hours and discourage dissent or worker uprisings by allowing workers to believe that they work for a greater social good and can thus be seen as a capitalist tool that furthers the profitability of a given firm.

CSR aims to quell the urge of workers to “put their heads together and, as a class, compel the passing of a law, an all-powerful social barrier by which they can be prevented from selling themselves and their families into slavery (Marx 416)”. It convinces both the worker and the outside observer that this capitalist mode of production is socially beneficial, highly moral, and necessary. Milton Friedman is, in a sense, correct in stating that it is not the role of business to create social good through this means. However, he is mistaken in making the claim that the lack of restriction is the solution. In fact, it is the role of government to restrict business to such an extent that the issues which CSR claims to address do not arise or are solved at the public level. Marx acknowledges that without political restriction, the worker will be forced to sell his labour power, sell his own freedom; the capitalist Marx writes, “...will not let go while there remains a single muscle, sinew or drop of blood to be exploited” (416).

In addition to CSR’s power to aid in the exploitation of labour-time, various scholars note the ability of CSR initiatives, undertaken by a given firm, to add value to the commodity. Reputation is one mechanism by which the price of a commodity can be elevated. A

market has emerged for products tied to social benefit. Siegel et al. write:

*The notion of a consumer demand for CSR is based on the notion that buyers believe that a reliable and honest firm will produce better products. In the minds of some consumers, CSR is viewed as a signal of such honesty and reliability. Thus, CSR is a form of product differentiation—a form of advertising to establish or sustain brand loyalty. The producer of a search good such as food or furniture might choose CSR, e.g., to use pesticide-free ingredients or pledge not to use old-growth wood. In this case, the consumer might prefer the product simply because of a desire to support the environment or some other cause, rather than using CSR as an information proxy (Siegel et al. 6-7).*

As such, the work of Corporate Social Responsibility departments is supplementary to the work of marketing and public relations departments. The labor applied in the name of CSR, adds value to the commodity by a different means, but with a similar outcome, as traditional labor. The social reputations of various firms are documented to have significant impacts on the performance and profitability of these firms. William Shaw observes that the importance of reputation often necessitates that firms reject the notion that profit is their only, or most import, goal. Shaw writes:

*Today the public expects companies to act in socially responsible ways. They want to buy from and do business with good companies, and*

*they want to be proud of the firms they work for. In an era where consumer groups and public-interest lawyers are quick to pounce on corporate behavior perceived to be harmful, unethical, or irresponsible, almost all companies seek to portray themselves as good, socially responsible citizens, concerned to promote diversity, to enhance the wellbeing of their employees, to contribute positively to their local community, to abstain from using sweatshop labor, and to play their part in protecting the environment. They view as a calumny the allegation that profit is their only, or even their most important, goal. True, this often seems to be posturing or public relations hype, and much of it may indeed be hypocritical. However, our world differs significantly from the world that Marx knew, and the pressure on corporations today to act, or at least to be perceived to act, in socially responsible ways is real and significantly affects their behavior (Shaw 573).*

Such posturing by firms, claiming disregard for the profit motive, can heighten the firm's reputation significantly enough to have a positive impact on profits. A firm that the public or investors believe to be socially responsible may receive more investment, less public or government scrutiny, and word-of-mouth advertisement. Perhaps unsurprisingly, Milton Friedman largely concedes to the posturing of CSR in such a way. He notes that in the present climate of opinion, with its widespread aversion to "capitalism," "profits," the "soulless corporation" and so on, this is one way for a corporation to generate goodwill as

a by-product of expenditures that are entirely justified in its own self-interest" (Friedman 1970).

## IV. Marx and Foresight

Karl Marx positions the process of capitalist exploitation as an inevitability of the present. He writes that Capital "allows its actual movement to be determined as much and as little by the sight of the coming degradation and final depopulation of the human race, as by the probable fall of the earth into the sun" (Marx 381). However, it is clear that attitudes and public awareness have changed from the time that Capital was first published and it is often in a company's self-interest to act, or to claim to act, in socially responsible ways. As mentioned previously, companies may have to make the claim that profit is not their main incentive in operating. William Shaw claims that "the best way to appear to be socially responsible is, in fact, to act in socially responsible ways" (Shaw 573). Therefore, capitalists may decide to forego profit in the short term to serve long-term interests. We now see that Karl Marx's prescription for the lack of foresight by Capital to not hold true. Marx writes, "Capital therefore takes no account of the health and the length of life of the worker, unless society forces it to do so... Under free competition, the immanent laws of capitalist production confront the individual capitalist as a coercive force external to him" (381). CSR, at least on its surface, moves beyond the traditional forms of exploitation and subversion. Under a theory of social benefit, the capitalist is able to push forward

environmental preservation or social welfare, thus extending the ability of capital to exploit natural resources and labor, respectively. The capitalist has foreseen the symbolic 'fall of the earth into the sun' and responded with CSR, thus allowing for the further extraction of surplus labor and valorization of capital in a later time period.

Having conceptualized two motivations for the capitalist to engage in CSR—profit and long-term interest—it is important to consider whether CSR has the capability to fulfill any of the goals that a given CSR department may bring forward. Shaw argues that people hired to fulfill various CSR initiatives "are likely to take their job descriptions at face value and pursue seriously the agenda that the corporation, whatever its motivation, says it wants them to pursue" (574). As such, the people working within or for CSR departments will aim to provide the maximum social benefit, even if their immediate actions or intentions contradict the profit motive. They may also be able to influence other managers within the firm, or the behavior of other firms, to further focus on socially beneficial action.

Marx argues, nonetheless, that the uncontrolled 'self-moving' exploitative force of capitalism will prevail. He writes: "...with the birth of large-scale industry in the last third of the eighteenth century... Every boundary set by morality and nature, age and sex, day and night, was broken down... Capital was celebrating its orgies" (389-390). The centuries following the birth of large-scale industry have allowed for an

awareness to emerge in regard to the exploitative nature of capitalism. The content of Karl Marx's works are now widely known, at least in a simplified format. The capitalist must thus work to meet society's expectations and disprove notions of power-hungry, limitless, exploitative capitalism. The answer, in large part, has come to be known as Corporate Social Responsibility. Under the premise that CSR truly does not break away from ingrained capitalist structures and is merely another tool that aides in the valorization of capital, it would be remiss to claim that this is obvious to those working within the realm of CSR. The capitalists employing CSR within their industries, and, all the more so, the workers whose sole function rests in the enactment of socially responsible policies and practices within, or on behalf of, their company or industry, must largely believe in the surface-level mission of corporate social responsibility. Thus, even if CSR only furthers capital's exploits in the long run, CSR nevertheless allows both workers and capitalists to maintain a semblance of morality.

Marx did not give credence to the possibility of capitalists pursuing moral goals at the cost of the capital valorization process. Where Friedman views profit maximization as the only moral route, an imperative, for the capitalist, Marx sees it as an inevitability. "Friedman advocates...the belief that an unregulated market is the economic ideal, the optimal socioeconomic engine, whereas Marx believes that the market mechanism should be supplanted by non-market forms of

social organization" (Shaw 569). Nevertheless, we now see a divergence from the prediction of Marx and prescriptions of Friedman. Shaw observes that society is now eager to explore "the middle ground between market fundamentalism and socialism and, more specifically, to accepting the feasibility and desirability of promoting among corporations an expanded sense of social responsibility (Shaw 569)."

## V. Freedom

This analysis of CSR must inevitably lead to a conclusion dedicated to the exploration of freedom. As previously mentioned, Milton Friedman conceptualizes freedom as the ultimate goal for society. For Friedman, freedom means freedom for the individual—free from government restriction or regulation. Marx, on the other hand, sees freedom only where Capital is restricted from exploiting the time and lives of laborers. As such, neither advocate for CSR: Friedman views it as antithetical to the goals of both capitalists and society at large; Marx would claim that only government regulation inspired by worker uprising can bring about necessary change. Friedman writes:

*The existence of monopoly raises the issue of the 'social responsibility,' as it has come to be called, of the monopolist... The monopolist is visible and has power. It is easy to argue that he should discharge his power not solely to further his own interests but to further socially desirable ends. Yet the widespread application of such a doctrine would destroy a free society (Friedman 1962, 120).*

Friedman sees free society as one in which the free market regulates interaction, such that no individual can coerce another. His premise for this rests in that all are free to cooperate or disengage from other actors in society. For Friedman, there exist "no 'social' responsibilities in any sense other than the shared values and responsibilities of individuals. Society is a collection of individuals and of the various groups they voluntarily form" (Friedman 1970). Marx shows, however that neither the capitalist nor the laborer is truly free to choose—both are driven by the capitalist system to either exploit the labor of others or sell one's own freedom, respectively.

## VI. Conclusion

We arrive therefore at a somber, though not unexpected conclusion. Corporate Social Responsibility is not a means by which society will attain freedom or overcome exploitation within the system of capitalist production. Corporate Social Responsibility is not an affront to capitalism or a divergence from the profit motive. Nonetheless, CSR does diverge from Karl Marx's prescription for Capital, as it is leveraged by capitalists to sustain long-term interests by foregoing short-term gains. In addition, through the employment in workers who believe in socially responsible corporate action, corporations can be driven to act in ways that do not serve the profit motive; this has potential to hold true even if the capitalist initially engages in CSR practices to further valorize capital. Although CSR and those working in its name do have the capacity to

perform action widely beneficial to society at the cost of profit, it appears that CSR is more likely to be leveraged to further the goals of capital valorization through incentivizing workers, building reputation, and protecting long-term interests. Corporate Social Responsibility comes forth from this analysis as a capitalist tool, serving the process of valorizing capital, while simultaneously allowing the capitalist to further his long-term interests.

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P R O F E S S O R   I N T E R V I E W S



# RAY HAWKINS

FALL 2015

INTERVIEWED, SCRIPTED, AND EDITED BY  
SUDESHNA BARMAN



## CAN YOU TALK ME THROUGH YOUR RESUME, SOME EXPERIENCES YOU'VE HAD WORKING IN THE "REAL WORLD" BEFORE COMING TO BERKELEY?

I've had two careers. I was formally trained as a physical scientist and worked at the Lawrence Livermore National Laboratory for about six years. When the Berlin Wall came down, what Livermore was up to at the time did not seem to be necessarily a great career future, so I transitioned into finance. This change was motivated by a friend of mine who was working at Salomon Brothers in Tokyo. [He] suggested I look at option pricing, and I ended up auditing a course taught by Professor Mark Rubinstein at the Haas School. Fortunately for me, it was taught at night, so I could drive over from the lab after work. Back then there weren't any MFE programs or computational finance programs. A computational physics background and a course in options and futures markets was enough to get a job on Wall Street in those days.

## THAT SEEMS LIKE A PRETTY BIG TRANSITION.

It was. But at a fundamental level, there are a number of similarities in the equations that underlie uncertainty, chemistry, physics, and financial economics. Part of the transition was simply relabeling the terms in the equation; it wasn't that I hadn't seen the equations before. And that was why investment banks were specifically targeting people like myself. After the 1987 crash financial firms needed people

who could develop derivative-pricing models. The companies that do derivatives pricing today didn't exist back then; you had to write your own models. There was no buy versus build; you really had to build.

## AND THEN YOU SWITCHED INTO ACADEMIA AFTER THAT?

Yes. About 15 years later, when Bank of America bought Countrywide, it became pretty clear they didn't need more of us. And there was a very nice condition in the takeover of Countrywide; if you lost your job, the company doing the takeover would have to pay you a certain amount of money. I was faced with the choice of trying to stay on, or accepting the offer to leave, and the offer to leave looked really, really good. So I took them up on it back in 2008. I traveled quite a bit and enjoyed myself – not something that you get handed at roughly age 50 that often – and then heard through a colleague who was teaching here at Berkeley that there might be an opportunity to teach financial economics. So I submitted my resume, and they hired me. I've been here since 2012.

## HOW DO YOU THINK YOUR EDUCATION HELPED YOU IN YOUR VARIOUS CAREERS?

At the Ph.D. level, you learn how to do research. That ultimately helped me in my career transition. My publication record begins in the physical science and then it transitions to decreasing amounts of physical science and ever-

increasing amounts of finance and economics. It also gave me the background I needed to learn on my own. I went from a field where I was formally trained to a field where I was expected to learn as I need to. Having learned how to do research – having learned how to learn new things – benefits you if you have to make a field transition or a career transition.

You shouldn't look at career transitions as something that you're going to have to give up everything that you've learned. There's a lot of basic skill set that overlaps, that you can apply in a variety of fields. For example, one of the common equations you solve in the physical sciences for modeling uncertainty is called the heat equation. It's a parabolic partial differential equation that describes the spreading of heat in a material. It also describes how dye diffuses in water. If you look at the prices of securities going forward, [they're] often based on that same heat equation or extensions thereof.

## YOU MENTIONED RESEARCH; CAN YOU TELL ME ABOUT SOME OF THE WORK YOU'RE DOING NOW?

The primary research I'm looking at right now [is] on Okun's law. We think of Okun's law as a straight line relationship between the output gap and the unemployment gap. It turns out that the response of unemployment to a change in output and vice versa has a time dimension to it. You can imagine: you suddenly want to hire more workers because the output gap has changed a little bit. It takes time to

# “YOU DON’T HAVE BEAR, YOU DON’T HAVE LEHMAN, OR OTHER PLAYERS. IT’S A DIFFERENT MARKET.”

to get those new hires on board. You still have to post ads, interview people, get people to fly in from L.A. or New York. So the shock on the output gap side of Okun’s law will take a while to manifest itself, or to reach equilibrium on the unemployment side. Working out how to describe that time lag and how to understand its analytical structure and its micro foundations is one thing that I’m doing right now.

## WHAT ARE SOME WAYS THE WORLD OF BANKING AND FINANCE ARE CHANGING RIGHT NOW? WHAT ARE SOME CENTRAL CONCERNS WE’LL BE LOOKING AT IN THE NEXT FEW YEARS?

Perhaps right now one of the biggest challenges is excess reserves. If you looked at excess reserves historically, [they were] essentially zero. This meant from the central bank’s monetary policy perspective, they could put money in a bank and that be reasonably sure that the bank would lend it out. There was a relatively tight link: if a central bank wanted more lending done, it put more money into the commercial banking sector and, poof, that money went out as loans. Today, that’s not happening, and that’s not happening to the tune

of a couple trillion dollars. That’s a big problem.

So now, you have two problems. Problem number one: the commercial-bank link to getting [money into the economy] has broken down. Problem number two: there’s a couple trillion dollars sitting in reserves, just waiting to go somewhere. How do you control the release of that money when the commercial banks decide to start lending again? These problems have required central banks to become more creative.

Regulation is also a huge issue. We deregulated the banking industry quite a bit. Reasonable people will disagree on the extent to which that was a contributing factor to the financial crisis, but it was there. With Glass-Steagall repealed, you went from a world where commercial banking could have investment banking divisions, but still get back backed by the Fed. The Lehmans and Bears of this world were also competing for investment-banking business, but weren’t backed by the Fed. This uneven playing field ultimately didn’t work out when Bear and Lehman went under. As a result, you don’t have any large-scale investment banks these days. Goldman and Morgan are now commercial banks. Why? Because

they can’t operate without the Fed backstop. That’s new. We’ve had a separation between investment and commercial banking since the Great Depression; now we don’t. The implications for banking in the U.S. going forward are unclear. We’ve also had a consolidation in a number of banks that are out there. You don’t have Bear, you don’t have Lehman, or other players. It’s a different market.

Also [there’s the question of] what the ultimate regulatory framework is going to be. More regulation and more stress testing might be better, but at some point the question has to be raised of how much is enough. We also have a big problem with “too-big-to-fail” financial institutions. Interestingly, financial exchanges such as futures exchanges have developed a market-based solution to this by imposing position limits so no one player can take the exchange down. By contrast, if a major bank goes down in the United States, you see the entire economy shake. There’s clearly a solution to the “too-big-to-fail” problem – don’t let anyone become too big to fail. In the commercial banking sector, we’re still debating that.

From a basic lending perspective, we also have fundamental questions that aren’t being addressed. We’ve often [said] that everyone should be a homeowner. Okay, but how do you make that work? These are some of the questions that occurred as a result of the financial crisis, but we’ve spent so much time trying to fix the fallout of the financial crisis that some of the questions that gave rise to the financial crisis have still not been addressed. Our response now





to “who should be able to get a home loan?” is “only those people who have really, really, really good credit.” Okay, fine. But you’re likely to have some demographics that don’t get into single-family homes, and that is not consistent with the place that home ownership holds in realizing the American Dream. Other questions that the financial crisis brought into sharp relief include: how much risk should banks be running? What is the business that banks should be in? And what is the role of the state in the banking sector and in home ownership? We’re still working that out, and at least now we have the financial crisis to get us a data point of how bad things can get if we don’t address those things properly. The good news for undergraduate economists is that these questions

still need answers; answers that you might be able to discover.

### THAT’S A GOOD LEAD-IN TO MY NEXT QUESTION. WHAT KIND OF ADVICE WOULD YOU GIVE TO UNDERGRADUATES? WHAT KINDS OF THINGS SHOULD WE BE THINKING ABOUT, PROSPECTIVE AND CURRENT STUDENTS ALIKE?

Try to broaden your understanding of economics as much as possible. If there’s an aspect of economics that you’ve not explored, check it out. If you haven’t particularly been interested in labor economics, you really ought to look into it. If health economics was something that you [didn’t think] about,

maybe you should become more knowledgeable about it. You may discover problems in those fields that are actually more engaging than those you’re currently interested in. The undergraduate years are a time when you can take courses that go beyond your current interests. You can broaden your experience and your understanding. Once you get to graduate school, you tend to become more focused. Once you go into the working world, you tend to become even more focused. Time is valuable and you are currently in one of those rare life moments when time and the opportunity to discover are available; take advantage of it. Get as much breadth as you can. There’s going to be more than enough time for specialization later on. □

PROFESSOR INTERVIEWS

# 12

QUESTIONS  
WITH  
DAVID ROMER

Spring 2016  
Interviewed and Scripted by  
Yann Decressin  
Edited by Sudeshna Barman

# **“LIKE A LOT OF ECONOMISTS I STARTED COLLEGE THINKING THAT I WAS GOING TO BE A PHYSICIST.”**

**You write a lot about the Fed and fiscal policy, so why did you become a professor instead of pursuing a job in the public sector, where you would be implementing your ideas?**

I think work in the public sector is a great thing to do. A lot of our Ph.D. students go to places like the Fed and the IMF, and that's fantastic. But I think I have a more academic personality, trying to think about the big picture and seeing what the evidence is, which is what attracted me to academia. But it could have gone either way. It wasn't an obvious call.

**When you say that you have a more academic personality, what do you mean?**

I guess I like the freedom of setting my own agenda and I like being able to think about a small number of things hard rather than a lot of things a medium amount. I enjoy really trying to dig down to find what the evidence really shows or what's the right way of tackling some problem, rather than what's best that I can do in a week. That's often how policy works, and it makes sense that it works that way—but that's not as good a fit for me.

**You have worked with the IMF, so you have spent time outside of academia. How has that changed the way you view economics as something that is implemented practically?**

I don't think that it has changed things fundamentally. My job at the IMF was in the research department, and basically my role was to talk to researchers about what they were doing and give them feedback. I think partly based on that experience and partly because of the obvious importance of Great Recession and its aftermath, I have become less patient over time with research that seems like it's showing off or research for research's sake. I really like research where you can see immediately why the question is important and how the person is trying to make a credible contribution to answering it. So the research that I saw at the IMF, I really liked. It's really nice to see research that's grounded in reality.

**Has that changed the way you will write in the future?**

I think the events in the last decade make me think that the horizon over which one wants a payoff is somewhat shorter than before. There are so many big questions about what's happening right now—about the zero lower bound, financial crises, fiscal policy, slow

recoveries, convergence of emerging economics, and much more—that I'm very interested in research that has at least some relationship to current policy issues.

**You have mentioned the Great Recession in many of your research papers. Is there any one thing about the Great Recession that sparks your interest or is it more of a general interest in what went wrong?**

It's general. The analogy that I sometimes give goes back to the early history of macroeconomics. In the 1960s, macroeconomists thought they had things figured out. Then in the late 60s there was puzzlingly high inflation given what was going on with unemployment. The initial attempts to deal with this were efforts to patch things up; for example, by tweaking the equation for the Phillips curve. But just trying to patch things didn't work. Ultimately, the puzzling behavior of inflation gave rise to rational expectations, to the Lucas model and the Lucas critique, and eventually to real business cycle theory—it just took the whole field off in a whole new direction.

I think that the Great Recession was an even bigger shock to the existing framework. Again we thought that we had things pretty much figured out: we thought we knew how to run monetary policy and how to stabilize the economy, and that business cycles were largely a thing of the past. The Great Recession was a much bigger upsetting of that applecart than the oil price shocks and the stagflation of the late 1960s and early 1970s were to the model





of that time. So my forecast is that the Great Recession and its aftermath are going to remake the field of macroeconomics. But my forecast is also that we don't know yet how it's going to do that. It's hard to overstate the extent to which these events came as a surprise. It was a spectacular failure of our field and we need to figure out why. But as I said, it's a general thing. If the answer were obvious, then we could fix things and go on, but it's not. I don't know where things are going to go from here.

**Do you think that it's ever possible to get to a point where something won't come from left field and force us to re-evaluate a lot of what we have thought of as true?**

That's a good question. I don't know the answer. This isn't physics, where there are universal laws that apply everywhere, and we're trying to figure them out. The macroeconomies of today are very

different than they were hundred years ago. So if we figure out today's macroeconomies really, really well, a hundred years from there may be something that we couldn't have possibly dreamed of today that changes how things work.

**As a person from academia who likes to do research, do you see these shocks as something you dread or something that you relish for the ability to see what was wrong in what we thought previously – not taking into account the mass impact on general people?**

It's hard to get beyond the fact that it had a huge impact on others. If I could rewrite history and undo the Great Recession, of course I would. At the same time, I do think the field was becoming a little complacent and self-satisfied, and some of the things that people thought they had figured out struck me as wishful thinking or convenient. So there may be some benefit to the fact that

the existing consensus was upset. But that small benefit is completely swamped by the human cost of the recession.

**As an undergraduate, did you ever feel uncertain about what you wanted to study further or become?**

Yes. I think that like a lot of economists I started college thinking that I was going to be a physicist. And then I discovered pretty quickly that although I could kind of fake my way through physics courses, I really didn't have a deep understanding of what was going on. The social sciences were incredibly attractive to me because they had the same excitement of intellectual inquiry, they weren't so mathematically abstract and abstruse that I couldn't do them, and I was actually more interested in the real-world questions of the social sciences than I was in the abstract questions of physics. So it was a fairly easy transition to make.

I actually spent a couple of years thinking that I might pursue political science rather than of economics. I think some of the biggest questions, like why are some countries rich and some countries poor, are in some sense more political science questions than economics questions. The economist can say that all you have to do is follow the following set of policies; but if you go to a poor country and you say here's the list of policies you have to follow, you're not going to get the policies implemented. It has to do with

I think it's very hard to go far in the policy world with a college degree and nothing else. It makes sense that if you're going to make a serious contribution to something like monetary policy or fiscal policy, you need the right training, and graduate school can give you that.

**So for undergraduates that are questioning what they want to study, do you have any advice on how to go on and find what they are actually interested in?**

## **"YOU SHOULDN'T ORIENT YOUR WHOLE LIFE AROUND PREPARING FOR GRAD SCHOOL. YOU'RE NOT AT THE POINT WHERE YOU SHOULD BE MAKING THAT DECISION."**

institutions and politics. Economists are contributing to the study of these questions, but they're fundamentally political science questions. So in the end I went to economics but it probably was junior year before I knew I was headed that way, and then senior year before I knew that I was going to go to grad school rather than going into policy, which was the other possibility you mentioned.

**So for a long time you thought that you were going to go into policy?**

Yes. I took a year off after college and I worked in Washington, and I thought of staying longer and doing other things.

**What made you leave Washington?**

I think at that point grad school seemed the most likely thing unless something really exciting came up.

I'm not sure that I have any great advice, but I have a couple of thoughts. One is I think that there's a balance in college between, "Oh, it's just a chance to explore and take whatever you want," and the other extreme of viewing it as trade school: "I know I want to do x and I am going to design my whole curriculum around that." I think that both extremes are mistakes. I think that ignoring the rest of your life and choosing a major that you enjoy but doesn't have realistic employment prospects, or has employment prospects but not in a way that is actually going to make a useful contribution to society, is really unwise. But I think that people in college are too young, they don't know enough about what they want, they're missing out on things that would make them better rounded and more productive in the long run, if they're not exploring different fields. I think it's important to try different things. But I think that it's also important to have at

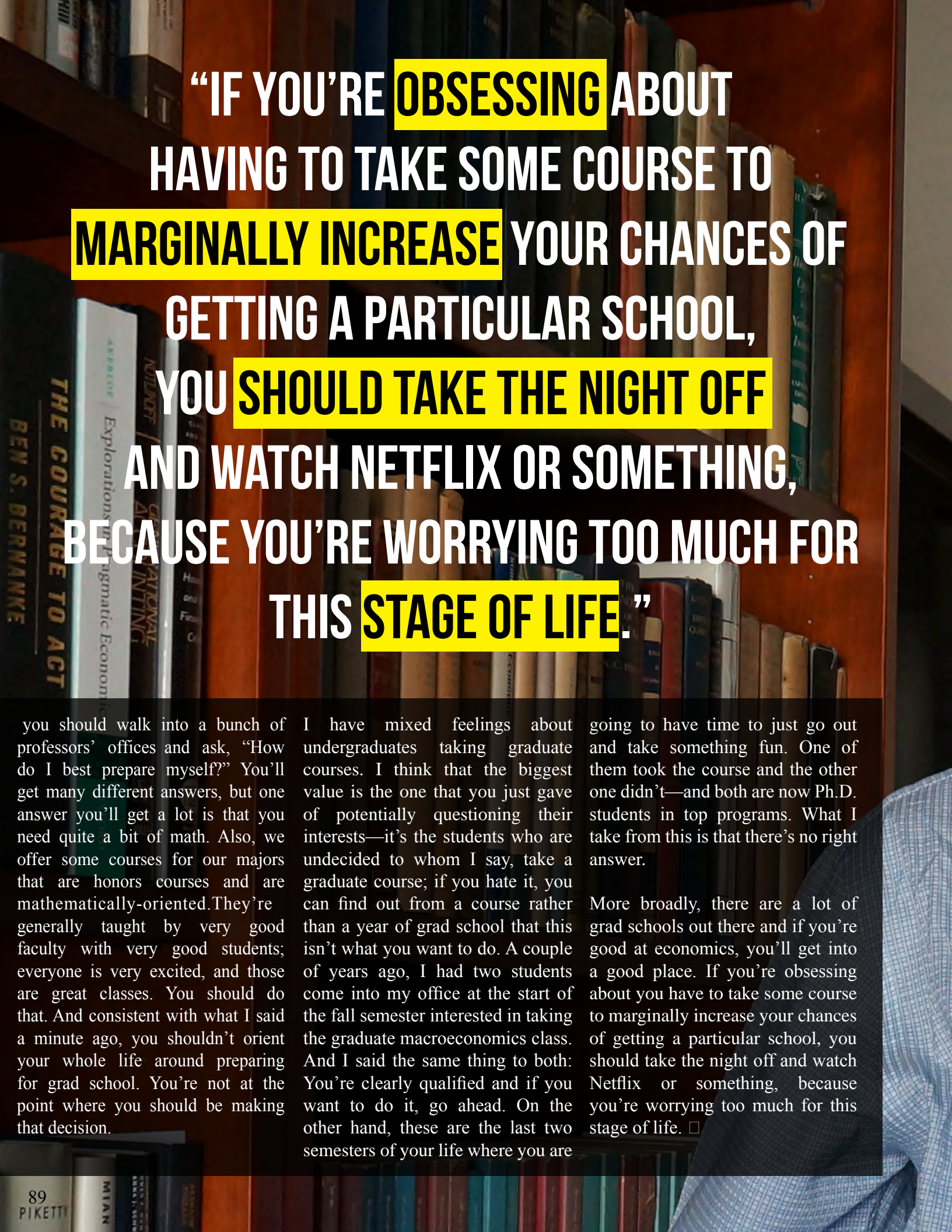
least some tentative thoughts about one's long-run goals. So that's one piece of advice.

The second piece of advice, which I give everyone who starts graduate school here and to every Berkeley undergraduate who goes off to grad school, is that grad school is a choice of a career, and you can't be sure the day you graduate from college what career you want. You shouldn't go to grad school saying that I will absolutely finish no matter what. I think that almost everyone who starts college should finish. But I think the socially optimal rate of not finishing a Ph.D. is quite high. One way I say it is if you go to grad school, mark in your calendar for a day at the end of year one, take the day off take go for a long walk on the beach, think about whether you want to spend the rest of your life doing this. And then do it at the end of the second year and so on. And if you don't want to do it, figure it out early rather than late because the worst thing you want is to be six years into a PhD and decide that you don't want to be a professional economist; maybe you get your degree at that point and maybe you don't, but you have several years of your life that have gone by that could have been better used in some other way.

**That said, do you think that undergraduates who already think they want to go to grad school should try to formulate their courses in such a way that they're suitable for grad school? Or should they try to take courses that could question their interests?**

I think they should do both. I think that if you want to go to grad school,





**“IF YOU’RE OBSESSING ABOUT  
HAVING TO TAKE SOME COURSE TO  
MARGINALLY INCREASE YOUR CHANCES OF  
GETTING A PARTICULAR SCHOOL,  
YOU SHOULD TAKE THE NIGHT OFF  
AND WATCH NETFLIX OR SOMETHING,  
BECAUSE YOU’RE WORRYING TOO MUCH FOR  
THIS STAGE OF LIFE.”**

you should walk into a bunch of professors’ offices and ask, “How do I best prepare myself?” You’ll get many different answers, but one answer you’ll get a lot is that you need quite a bit of math. Also, we offer some courses for our majors that are honors courses and are mathematically-oriented. They’re generally taught by very good faculty with very good students; everyone is very excited, and those are great classes. You should do that. And consistent with what I said a minute ago, you shouldn’t orient your whole life around preparing for grad school. You’re not at the point where you should be making that decision.

I have mixed feelings about undergraduates taking graduate courses. I think that the biggest value is the one that you just gave of potentially questioning their interests—it’s the students who are undecided to whom I say, take a graduate course; if you hate it, you can find out from a course rather than a year of grad school that this isn’t what you want to do. A couple of years ago, I had two students come into my office at the start of the fall semester interested in taking the graduate macroeconomics class. And I said the same thing to both: You’re clearly qualified and if you want to do it, go ahead. On the other hand, these are the last two semesters of your life where you are

going to have time to just go out and take something fun. One of them took the course and the other one didn’t—and both are now Ph.D. students in top programs. What I take from this is that there’s no right answer.

More broadly, there are a lot of grad schools out there and if you’re good at economics, you’ll get into a good place. If you’re obsessing about you have to take some course to marginally increase your chances of getting a particular school, you should take the night off and watch Netflix or something, because you’re worrying too much for this stage of life. □







# Interview

with Professor  
Ted Miguel

Spring 2015

Interviewed by  
Juliet Hemmati, Alice Wu

Scripted and Edited by  
Sudeshna Barman



**Q: "Tell us a little bit about your background and how you became interested in developmental economics. "**

**A:** Both my parents are immigrants, like a lot of students at Cal, so I traveled a lot as a kid. My dad is from Uruguay, in South America, and my mom is from Poland. They both moved to the U.S. in the 60s, and I would travel to meet my relatives. Now, Poland is relatively developed, but in the 70s and 80s and under communism, Poland was a lot poorer. Uruguay, too. I saw different things than my friends, and I was always really interested. Why are my cousins so much poorer than I am? Why are their lives so different than mine?

So I became very interested in development, and I didn't really know where to take that. When I started taking economics, I thought, "Oh, this is a way that I can study it." But while I was always really interested in international development, I didn't know if I would do other things.

My dad's uncle was a water engineer. He was Uruguayan, but he would go on all these projects all over the world for the World Bank, building water treatment plants and sewage systems, and I thought that was amazing. So I kind of thought I might want to be an engineer. I was an undergrad at MIT and I thought I'd maybe do engineering, but I just really liked economics. I had a lot of science-math interests going into college, and with econ you can use a lot of statistics and modeling.

But if you had asked me when I was thirteen, fourteen, fifteen, "What do you want to do?" I would have said I want to work on global poverty.

I wouldn't have called it international developmental economics. I was a development person first, and economics was the way for me to study it. And other people have the other approach, where they love economics and then they try to figure out [which field]. But for me it was, "Now that I know I want to do development, do I want to do economics, engineering, political science, international law?"

**"We read a bit about you talking about how climate change affects developing economies in Africa. We want to know more about that. "**

In lot of African societies, a lot of their economies are based on agriculture, and there's actually very few irrigation [systems]. So if the rains are bad in any given year, or if it's very hot, you can't access water for your crops. It's not like the state of California. Actually, California is semi-arid, but there's a huge and 100+ year old irrigation system throughout the Central Valley. So even if water fails in any given year, we can keep it going, like we are now, for a few years. But in most African settings, you can't. So climate change can have a really immediate impact on African economies. Because they're so dependent on agriculture and they don't really have in place technologies like irrigation to deal with [drought], the economic consequences are predicted to be really huge. For instance, in a year that's a little bit warmer than normal -

just one or two degrees Celsius warmer than normal - agricultural production in most African countries falls quite substantially. And that's by a few percent for one degree. So imagine if the world warms by several degrees. I've also done work on how those economic consequences might factor into political instability, violence, and social breakdown in various forms, because when people are poor and desperate, there is stress on the rules that govern society.

**" On the topic of Africa's developing economies, what's your opinion on microfinance, and especially microfinance organizations based here in the U.S.?"**

There's always so much interest in microfinance, and for good reason, because there's certainly a need for capital and investment. There's been some research in the last three or four years - the first really good, big, randomized evaluations and large scale studies - that show, if you inundate certain towns and cities with microfinance, and not others, what happens over the course of several years to their income growth. The evidence from those studies has actually been quite disappointing. It's created a kind of crisis of confidence among supporters of microfinance, who've been raising and giving out a lot of money with an assumption that microfinance would have a transformative impact.

And there's no doubt that in particular cases, you can find individuals whose lives have really been transformed. But the overall aggregate effect seems to be smaller than people thought. So even though getting poor households and businesses access to capital is most definitely very important, the microfinance model that a lot of NGOs have been using - well, the evidence suggests it isn't as transformative as people thought. We could think of that as a failure, and in some ways it is disappointing, but at the same time, if we are trying to improve income growth and improve people's lives, we need to know what works and what doesn't work, and we need to revise policy accordingly. We should take those sorts of studies that show limited impact as a success, because they're teaching us about the right way forward.

**" So I heard if you want to get loans from developments bank, you have to cut your government deficit, and what some [African] governments did was reduce subsidies to agriculture, and that was really harmful to local farmers. Is that true?"**

The 80s were a period where a lot of African and Latin American countries had a major macroeconomic crisis. Runaway inflation, runaway budget deficits, and collapsing growth coincided with a period when commodity prices fell.

And at that time, there were a lot of economic policy changes that you could point to the IMF and the World Bank as pushing through.

In more recent years, that's much less of a reality. Government capacity is much better in most African countries than it was thirty years ago. African countries are much more democratic, more representative, and their leaders have many more technically trained staff. In 1982, when the financial crisis broke, there weren't that many PhD economists in most African countries, and now there's a lot. There's so much more human capital. And that's great because it means countries can choose policies that are good for them, for their own interest. I think that kind of view of outside banks forcing policy - there's a lot less of that than there used to be. The World Bank is the most influential of these banks, because they have the most funding, but the African Development Bank has actually done pretty well in the last decade. They've chosen to focus a lot on investing in infrastructure, and it's proven to be a good investment. This is a period of positive growth, and there's a lot of demand for better roads and power and telephone networks and ports and railroads and on and on. They've played an important role in funding those. Those are pretty good investments that the African Development Bank has been making.

**" What do you think is the role of transparency in economic research? "**

I'm a big supporter of the push for more transparency and visibility. It's really important because the ways researchers have handled their analyses and their data in the past has often not been - they haven't done all that they could to make the research credible. Here at Berkeley, there's an initiative that I helped to start two or three years ago called the Berkeley Initiative for Transparency in Social Sciences - BITSS. There's been a lot of interest among a lot of researchers in improving their research, in using these new methods.

For instance, sometimes when people do statistical research, they get their data, then look at the data and decide how they want to analyze it. And that's fine - you can learn a lot by looking at data, there's no doubt about it - but it's more scientific if you lay out your hypotheses before you see what's in the data, and then you test them. [The goal is to get researchers] on the record as saying, "These are the two main hypotheses, this is how I'm going to test them, and this is how I'm going to regress this variable and that variable." If you post that hypothesis somewhere public, so that people know you did it before you saw the data, then when you analyze the data, people know the result has a lot more scientific credibility. Then they know you didn't just data mine or mess with the data or go looking for some correlation.

So that's what we're pushing for as part of the transparency movement. One of them is to push people to register their hypothesis before analyzing the data, and get on the record publicly. Then other researchers can also learn. Because what ends up happening is that some of these people have an idea of what they want to do, and it doesn't really pan out in the data, so then they never publish it. But if you go on the record about

what you planned to do, then everybody knows, "Oh, you planned to do this, maybe you didn't get the results you expected." They can at least contact you if you posted your hypothesis on a public register. "Oh, hey, how did that analysis go?" And you can share with the research community what your findings were. So there are a lot of advantages to that kind of approach.







# Contact Information

UBER website

<http://econreview.berkeley.edu/>

Facebook Page

<https://www.facebook.com/econreview>

Submission E-mail

[berkeleyeconreview@gmail.com](mailto:berkeleyeconreview@gmail.com)

