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The St. Olaf College Economics Department's

# **OMICRON DELTA EPSILON**

Journal of Economic Research



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## **Political Instability, Energy, and Economic Growth in Nepal**

Lindsay Mattei

Despite being one of the world's least developed countries, Nepal is one of the richest in water resources. Nepal has the second largest hydropower potential, upstaged only by Brazil (Oberst et al.). Yet, access to electricity and the threat of fuel shortage remain legitimate concerns. State officials and development planners in Nepal have long acknowledged the importance of Nepal's energy potential. However, the predominantly state-owned, vertically-integrated energy system, comprised of the National Energy Authority and Independent Power Producers (IPPs), have only developed 0.72 GW of generation capacity out of the 40 GW potential capacity (Nepal and Jamasb; EIA, 2010). Additionally, due to the lack of energy infrastructure, the nation's electricity grid only meets about half of the country's energy demand, leaving much of the country reliant on firewood as their main fuel source (Millennium Challenge Corporation). In comparison, Nepal's neighboring country of Bhutan also enjoys a wealth of hydropower potential, but unlike Nepal, they have successfully been able to realize much of that hydropower potential and turn it into sizable economic growth. Over the past several decades, political instability and corruption have hindered Nepal's economic growth by limiting its ability to improve energy infrastructure and promote private investment. In order to achieve growth

through infrastructure development and investment, the policies with the greatest potential for economic development in Nepal are policies aimed at reducing corruption by increasing transparency in government spending and public procurement.

### Energy Infrastructure and Economic Development

Many policy makers, including Nepalese government officials, recognize the importance of expanding energy infrastructure and increasing access to modern energy. A brief review of literature on the relationship between energy and economic development, reveals the importance of energy infrastructure, and helps to clarify how Nepal's lack of energy infrastructure contributes to their current level and trajectory of development.

Most macro-level research focuses on either the relationship between energy consumption and economic growth or the relationship between infrastructure and growth, with energy infrastructure being a variable of interest. As other literature reviews on this topic have also noted, the results of these studies are somewhat inconclusive due to methodological challenges (Attigah and Mayer-Tasch). The strength and direction of the relationship is difficult to determine as a result of the endogeneity problem that exists between energy and GDP growth. However, there are some studies that have attempted to address the issue of simultaneity. One such study examined the relationship between infrastructure and output, controlling for other institutional and economic factors that mediate relationships between

infrastructure and GDP. More specifically, this study measures infrastructure in terms of power production and telecommunications infrastructure. The study found that there is a positive correlation between power production and GDP growth after controlling for the simultaneity between infrastructure and GDP (Esfahani and Ramirez).

Other studies make the case that this direct link between infrastructure and economic growth is due to infrastructure's effects on the productivity of other factors of growth. For example, Nomba Un, Straub, and Vellutini (2009) used a regression based in the growth accounting framework and found that electricity production helps to explain cross country differences in total factor productivity growth in the Middle East and North Africa Region (Nomba Un, Straub, and Velluntini). The study found that a one point increase in the average growth rate of electricity generating capacity results in 0.22 additional average per capita growth (Nomba Un, Straub, and Velluntini).

Another group of literature recognizes energy not as a factor of growth directly, but as an important intermediary. As Kooijman-van Dijk (2008) points out, energy supply is just the first step towards economic growth and poverty reduction. Energy infrastructure can be put in place, but it is the use of the electricity that leads to economic growth (Koojiman-van Dijk). Energy consumption and the adoption of new electrical appliances promote output growth by increasing productivity, lowering cost of

production, and promoting the creation of new businesses (Attigah and Mayer-Tasch, Koojiman-van Dijk). This gets to the idea that investment in energy infrastructure may crowd-in other forms of investment. Therefore, while there are some shortcomings in empirical evidence determining the relationship between energy infrastructure and economic development, there is a theoretical case to be made for the positive relationship between energy and growth.

Reports of the cost of energy insufficiencies and energy shortages in Nepal support the idea that lack of energy infrastructure may be hindering growth by leading to higher operating costs for firms and deterring investment. A paper by the Nepalese Government in collaboration with the United States Government addressed some of the costs of the inadequate energy supply and energy shortages. According to the paper, business owners in Nepal reported 26% annual revenue loss due to power outages in 2009, which is the highest rate in the world (Millennium Challenges Corporation). Businesses, which do not have access to the electrical grid, must rely on generators. Self-generation of energy accounts for 40 percent of energy use among firms and is roughly 3 to 4 times the cost of electricity from the grid (Millennium Challenges Corporation). The high costs of energy, especially in rural areas untouched by the electricity grid, and the cost of energy shortages are major constraints to doing business in Nepal. Additionally, in a World Bank Enterprise Survey, 57 percent of firms said that unreliable energy

supply was the largest constraint to doing business, and energy constraints are important determinants of Nepal's investment climate (Afram and Salvi Del Pero).

Now, with the relationship between energy and growth established, it is important to understand the factors that have contributed to the low levels of energy infrastructure. Over the last several decades, the key underlying factors have been political instability and corruption.

### Political Instability, Corruption, and Growth

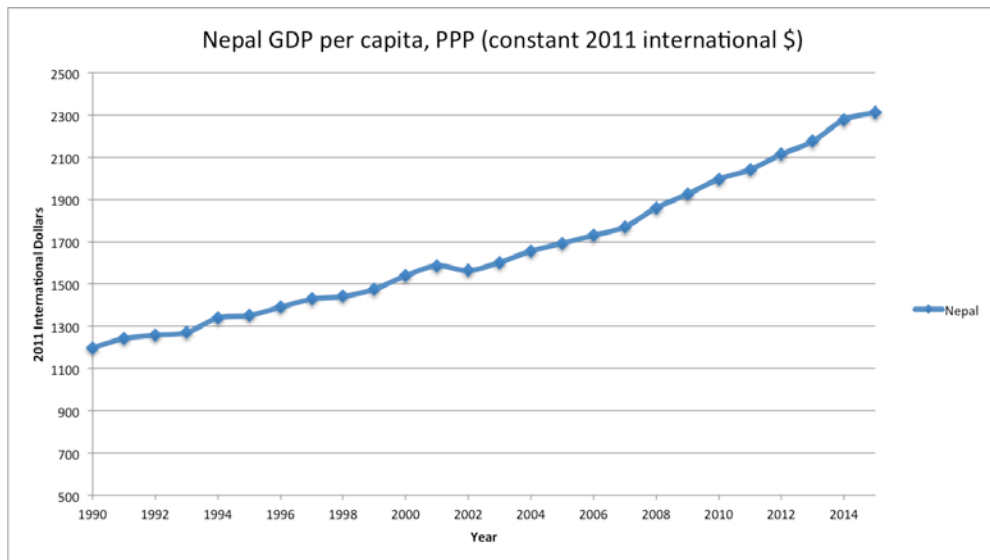
Since the end of the Nepalese war in 1816, which resulted in the solidification of Nepal's current boundaries, Nepal has endured a volatile political climate. Multiple transfers of power and political structures have preceded the current federal parliamentary republic, beginning with the monarchy rule under the chief minister Ranas. Ranas came into power in 1845, and the Rana hereditary line of monarchs remained in power until 1951, when anti-Rana rebels established a cabinet system and brought political parties into the government ("Nepal Country Profile"). However, this short-lived period of democratization ended in 1960 as King Manjendra seized control and suspended party politics. The democratic political party system was then reinstated in 1990. Yet, despite this progress, political instability in the 1990s led to the Maoist Revolt, otherwise known as the Nepalese Civil War, fought from 1996 to 2006 ("The World Factbook: NEPAL"). Since the end of the Maoist Revolt, the country has been free from



monarchy rule and has gradually established what is today a multi-party democracy.

The 1980s and 1990s marked a period of liberalization of the economy, which may explain some of the growth during this period, but also may have contributed to the high levels of political instability. During this period, the Nepali economy was opened up to the outside world once again, and as the economy grew and diversified, incomes became less volatile. Additionally, as the economy diversified, the shift away from the agriculture industry caused less volatility in income, as it was less dependent on rain cycles (*Nepal: Development Policy Review*). Throughout this period of reform, Nepal experienced positive growth in real GDP during this period (Figure 1.). However, this growth and stabilization was matched with policy failures. Although per capita income responded positively to the economic reforms of the 1980s and 1990s, it was accompanied by high rates of inflation, and the growth was not inclusive (“Economy”). Policy reforms excluded certain religious and ethnic groups, especially specific ethnic groups in the Western region of the country (*Nepal: Development Policy Review*). Ultimately, these socio-economic injustices, in combination with the newly established democratic government of the 1990s, led to resistance that resulted in the Maoist Revolt (*Nepal: Development Policy Review*).

**Figure 1.**



\*Data from The World Bank's World Development Indicators Database

Since the time the Maoist conflict began, there have been multiple shifts in power. There were 13 different governments formed in the 13 year period between 1991 and 2004 alone (Bhattacharyya). This political instability is captured in the low index for Political Stability and Absence of Violence/terrorism in the Worldwide Governance Indicators, directly after this period. In 2005, Nepal had a 1.93 percentile rank on a 0 to 100 scale. As of 2015, Nepal has a ranking of 16.9 for Political Stability and Absence of Violence/terrorism, which is still relatively low (Worldwide Governance Indicators).

Literature on the relationship between political instability and growth indicates that there may be both direct and indirect links between political instability and development. In a study including 167 countries, the

International Monetary Fund found that political instability, measured by the number of cabinet changes, is negatively and significantly correlated with real GDP growth. The results remained robust to the inclusion of regional dummy variables and other explanatory variables. Most notably, the magnitude of the coefficient for cabinet changes was reduced with the inclusion of investment. However, even with the inclusion of investment, the effect of cabinet changes on growth is still both statistically and economically significant. This suggests that “only a small part of the effect of political instability on growth occurs through its negative effect on investment” (International Monetary Fund). Thus, while there may be a direct link between political instability and real GDP growth, their findings indicate that political instability does not only affect growth through its effects on investment. Rather, other studies indicate that political instability is related to delayed reform and corruption.

Political instability stalls the reform process largely due to the fact that there is little incentive to invest in long-term projects. Any type of reform that is desired requires continuous bargaining between stakeholders and political desirability and feasibility (Bhattacharyya). Without a considerable degree of political stability, there is uncertainty surrounding long-term political feasibility. In other words, in times of political instability, if the trajectory of the reform extends beyond the lifespan of the present governing body, there is little opportunity to garner political support to implement the

reform (Bhattacharyya). There is also a lack of incentive to support the reform and slow reform processes if there is the anticipation of a shift in power. For example, in Haryana, one of the 29 states of India, the opponents to reform came to power within a year of the reform and stalled the process. Additionally, "Haryana missed reform milestones after a change of government in 1999," and according to Bhattacharyya, similar trends have been noted in Nepal (Bhattacharyya).

Similar delays also affect the investment in infrastructure and other capital expenditures, which would include investments in energy infrastructure. Political uncertainty has hindered the ability to garner political consensus to pass budgets in a timely manner. For example in 2012, political instability, specifically within the Constitutional Assembly, delayed the approval of federal budgets. These budget delays shortened the time-frame for implementing infrastructure and other capital expenditures, which resulted in a decrease in expenditures to 3.1% of GDP (Millennium Challenge Corporation). Additionally, according to Nepal and Jamasb, "political instability and changing priorities of different governments have resulted in 'almost-ready' decisions being repeatedly rehashed in the Nepalese power sector" (Nepal and Jamasb).

Times of political instability are often accompanied by higher levels of corruption. Bhattacharyya found that there is a positive relationship between political instability and opportunistic rent-seeking behavior

(Bhattacharyya). Furthermore, Mauro notes that political instability and corruption may even be intrinsically linked in the sense that they may both stem from a coordination problem among the ruling elite (Mauro). People in positions of power decide to participate in bribes, worsening the government and shortening the “political horizons,” thus making politicians want to “obtain a large slice of the cake today and disregard the size of the cake tomorrow” (Mauro). It should also be noted that one of Mauro’s key finds is that there is a negative relationship between corruption and investment (Mauro). Nepal is ranked 131st out of 176 countries in the Corruption Perception Index 2016, which puts it among the most corrupt third of nations in the world (Transparency International).

Opportunistic, rent seeking behavior is a form of corruption that can be seen within the state controlled and private sectors of the energy industry. There are frequent allegations of rent seeking behavior in Nepal especially “by Nepalese government officials in the distribution of permits and approvals, in the procurement of goods and services, and in the award of contracts” (“Nepal”). Corruption can occur at the government level or within Independent Power Projects (IPPs), which often take the form of collusion between government officials and private investors. The Parliamentary Public Accounts Committee (PAC) has played a crucial role in the attempt to mitigate corruption by reporting incidences of corruption (“Nepal”). A recent example of this can be seen in an article in the Kathmandu Post on June 26,

2015. The PAC pointed out irregularities in the Chameliya Hydropower Project, finding that there were irregularities in the project involving unusually high overhead costs and project delays. The NEA claimed that a contractor that was paid in advance refused to carry out the work due to a contract discrepancy. However, PAC sensed that “corruption gripped the project” (“PAC summons Energy Ministry to discuss Chameliya”). As this example demonstrates, the high value of energy projects invites corruption, as the large contract values offer opportunities for public officials to misappropriate project funds (*Detecting Corruption Risk with Independent Power Producers*).

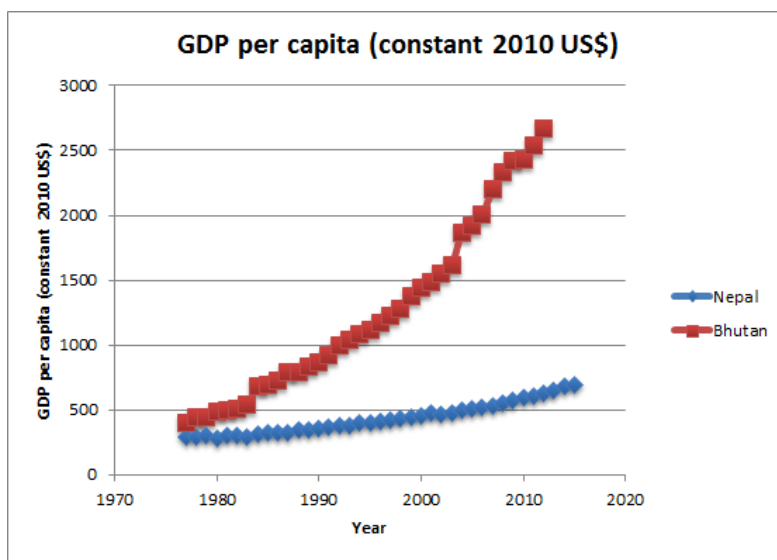
So, how might the trajectory and current state of Nepal's economic development differ had they not experienced political instability that hindered the growth of energy infrastructure? To offer a comparison we turn Nepal's neighboring country of Bhutan.

### Hydropower and Economic Growth in Bhutan

Bhutan is a small, landlocked country east of Nepal that is completely situated within the Himalayan Mountain Range. Similar to Nepal, Bhutan struggles with the effects of being a mountainous, landlocked country, but it enjoys advantages of large hydropower potential. The economic trajectories of Bhutan and Nepal were on a very similar path up until the past several decades. As seen in Figure 2., Bhutan's GDP per capita was comparable in size to that of Nepal's in the early 1980s, but it diverged in the 1990s and into

the twenty-first century. Today, Nepal's GDP per capita is \$2,500 (CIA World Factbook: Nepal). On the other hand, Bhutan's GDP per capita is \$8,100 (CIA World Factbook: Bhutan). While there are obviously many factors that contribute to economic growth, relative political stability and the expansion of hydropower in Bhutan may be able to explain some of the divergence in economic growth rates between the two countries.

**Figure 2.**

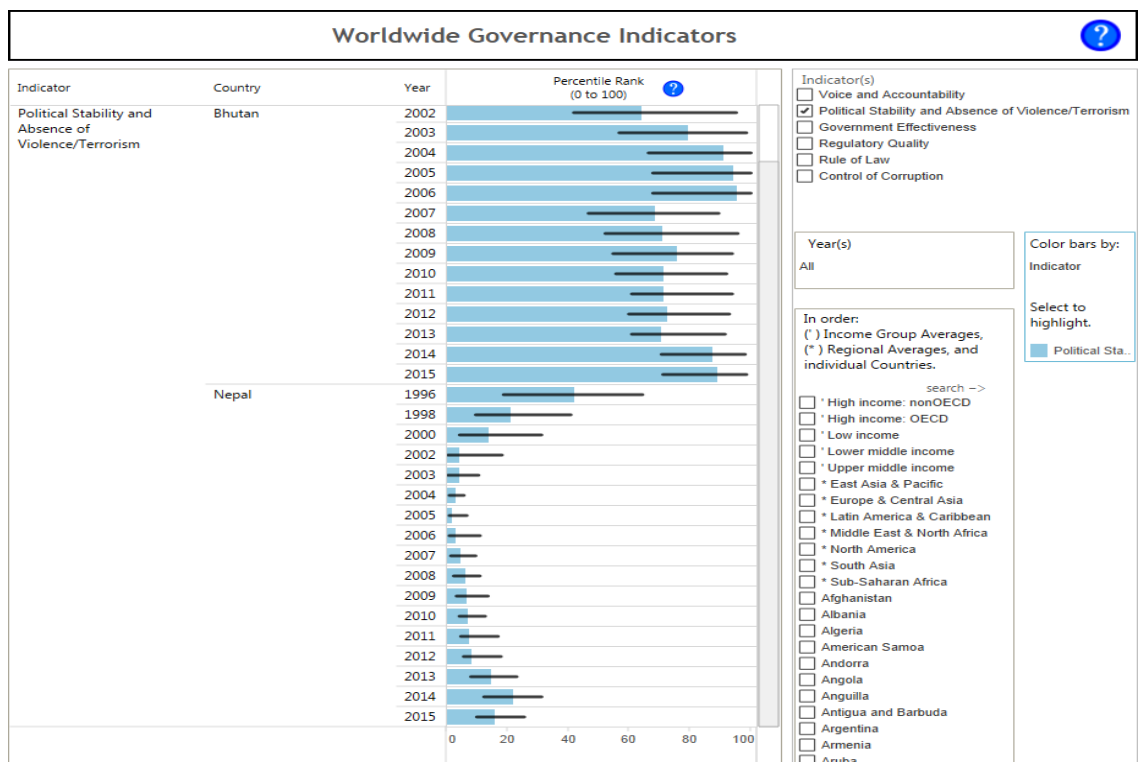


\*data from World Development Indicators Database

Similar to Nepal, Bhutan's political history begins with a long line of absolute monarchies up until 1950. There was a shift away from autocratic governance when the King Jigme Wangchuck (1952-72) took the throne and began to delegate his power. Unlike Nepal's comparatively brief period of democratization from 1950 to 1960, King Jigme Wangchuk and subsequent monarchs continued to move the country towards a parliamentary democracy

(Karan). The first official election in 2007 marked the complete transition to a parliamentary democracy (Karan). Thus, Bhutan's history is not marked with the same political instability. This comparatively smooth transition to a more democratic form of government is especially evident in the index of Political Stability and Absence of Violence/terrorism since 2002 (Figure 3.). While data is only available for roughly the last decade and half, the indicator clearly shows that Bhutan has experienced significantly less perceived political instability in the given time period.

**Figure 3.**



Source: Kaufmann D., A. Kraay, and M. Mastruzzi (2010), *The Worldwide Governance Indicators: Methodology and Analytical Issues*  
 The Worldwide Governance Indicators are available at: [www.govindicators.org](http://www.govindicators.org)  
 Note: The Worldwide Governance Indicators (WGI) are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms. The WGI do not reflect the official views of the World Bank, its Executive Directors, or the countries they represent. The WGI are not used by the World Bank Group to allocate resources.



With the advantage of a relatively stable political environment, Bhutan has embraced its hydropower capabilities. As of 2015, Bhutan has achieved 98% electrification (Asian Development Bank). Additionally, hydropower is Bhutan's number one export, and as of 2007, electricity from hydropower represented 12% of its GDP (Lean and Smyth). To give some background on energy reform and expansion, the Gross National Happiness Commission (GNHC), previously known as the Planning Commission, is responsible for creating development strategies and Five-Year Plans in Bhutan (Tobgay). Since its first Five-Year Plan in 1961, rural electrification has been a key development goal of the GNHC, and the GNHC helped to develop detailed plans for hydropower expansion (Tobgay). There are limitations to the connections that can be made between relative political stability and development of energy infrastructure in Bhutan without empirical analysis. However, the fact that GNHC generated detailed plans to address rural development early on and the hydropower sector successfully expanded thereafter, suggest that reform efforts have been timely. As previously noted, slow reform as a result of political instability and corruption are key bottlenecks to energy reform and subsequent infrastructure development in Nepal.

According to the Asian Development Bank (ADB), the considerable economic growth over the past several decades is largely due to the capital-intensive hydropower development policies. In a 2014 development report,

ADB reported that hydropower development had contributed 20.9% to GDP growth in the preceding 14 years (Asian Development Bank). Another study examining economic development in Bhutan found that a 1% increase in electricity consumption generates 0.03%-0.05% increase in output, and additionally it found a “Granger causality running from electricity consumption to economic growth” (Lean and Smyth). Given these findings, it seems reasonable to conclude that at least some of the divergence in the development trajectories depicted in Figure 2. can be attributed to Bhutan’s realizing its hydropower potential.

Lastly, Bhutan’s poverty level has dropped from 23 percent to 12 percent in the past five years, and The World Bank has attributed this rapid decline in poverty to increases in basic household amenities, such as electricity (The World Bank). While it is not certain to what extent the energy sector has played a role in reducing poverty levels in Bhutan, a study done by the Asian Development Bank showed that electrified households had incomes that were 50-72% higher than unelectrified household, indicating that improvements in energy access contribute to poverty reduction (Attigah and Mayer-Tasch). These results depict the additional, poverty reducing, effects of addressing energy shortages.

### Policy Implications

As previously established, the shortage of electricity is a key development concern in Nepal. The electricity grid only meets fifty percent

of the energy demand, and according to the The World Bank Enterprise Survey, electricity shortages are one of the main roadblocks to doing business in Nepal (Afram and Salvi Del Pero). Lack of electricity infrastructure requires firms to use costly generators, and firms that are attached to the electricity grid are at risk of losing revenue as a result of frequent energy shortages (Millennium Challenges Corporation). Additionally, in theory, lack of energy infrastructure could also be limiting growth by hindering the growth of total factor productivity.

Beyond these arguments, another reason to address the energy shortage in Nepal is to address widespread poverty. In Nepal, roughly 25 percent of the population lived under the poverty line as of 2012 (CIA World Factbook: Nepal). People living below the poverty line in Nepal are heavily concentrated in rural areas, and they are also the populations least likely to be reached by the energy grid. Additionally, not captured by the poverty statics, there are significant portions of the population struggling just above the poverty line, and a large percentage of these families still rely on wood as their primary fuel source. Rural electrification would promote economic growth and greatly improve the quality of life of these vulnerable populations.

In order to promote economic growth and alleviate poverty, Nepal must continue efforts to expand energy infrastructure and implement new policies aimed at reducing corruption. Political instability and corruption

have impeded the functioning of the government-operated energy sector.

Despite some reforms to the energy sector in the 1990s that aimed to expand the hydropower sector by allowing private and joint sector development through licenses, the majority of Nepal's hydropower potential goes unrecognized (Bhattacharyya). Therefore, the continuation of the the current hydropower World Bank Initiative is an important step towards economic growth.

The World Bank Initiative, Nepal: Power Sector Reform and Sustainable Hydropower Development, is a step in the right direction. The initiative aims to develop the hydropower sector by providing funding for two large hydropower projects. In order to meet this objective, the program has several smaller objectives. Short term objectives are to expand the energy grid and make a rural electricity master plan. More specifically, the initiative supports two hydropower projects, Upper Arun Hydropower Project (UAHEP) (335 MW) and Ikhuwa Khola Hydropower Project (IKHP) (30 MW) (The World Bank). Additionally, the plan includes ongoing studies and preparation for policy reform in order for proper legislation to accompany the project and ensure proper water resource management policies (The World Bank). The World Bank approved this project in September 2015, and according to the most recent implementation status report, the National Electricity Authority (NEA) is working on procuring engineers and

construction work for the two hydropower projects (UAHEP and IKHP; The World Bank).

The continuation of this initiative may give Nepal just the push it needs to promote the growth of the energy sector; however, this initiative should be accompanied by additional reform efforts. Corruption is prevalent within the procurement of these projects due to the high value contracts that offer the opportunity for the misappropriation of project funds. Therefore, as the NEA works to procure engineers and construction workers for the two large hydropower projects of the World Bank initiative, there is still a concern that corruption could taint the initiative when it comes to the allocation of funding or payment of the contracted workers. In order for projects and policies to be effectively implemented free of corruption, there needs to be increased accountability and transparency in government spending and public procurement.

An initiative that increases the number of government audits would decrease the the likelihood of corruption. Although the Parliamentary Public Accounts Committee (PAC) plays a role in mitigating instances of corruption, there is a need for more independent audits of government transactions in order to further discourage rent seeking behavior among both government and private sector stakeholders. A field experiment in Indonesia designed to investigate alternative approaches to fighting corruption examined the impact of increasing the likelihood of an audit on the discrepancies between project

costs and expenditures. In the study, 600 villages in Indonesia were allotted project funds that could be utilized for infrastructure projects, such as road resurfacing. A randomized sample was chosen to receive external audits, and the study found that an increase in the likelihood of an audit from 4 to essentially 100 percent reduced the amount of missing expenditures (Olken). The study found that an increase in the probability of receiving an external audit reduced missing funds in the project (Olken). Given the success of this trial, an increase in the frequency of external audits on hydropower projects in Nepal could reduce the likelihood of rent seeking behavior that often results in missing expenditures and stalled, if not halted, expansion of energy infrastructure.

In addition to increasing the frequency of audits, further policy implementations could be put in place to increase transparency in the budgeting and flow of government funds. Once an adequate level of energy security is reached, the government could implement an e-procurement program to further increase transparency and accountability, especially in industrial projects.

An e-procurement system can increase transparency, allowing for easier detection of irregularities, and decrease the interactions between firms and procurement officials. In 2002, an e-procurement system called KONEPS was implemented in Korea (OECD). The system digitized the entire procurement cycle, from tendering to inspections to payments. Within 10

years, over 62.7% of Korea's total public procurement took place through KONEPS, and the program has been deemed a success (OECD). The Public Procurement Service (PPS) of Korea reported that it reduced transaction costs, increased efficiency of the procurement process, and reduced instances of corruption. Additionally, an assessment conducted by the Korea Anti-Corruption for Civil Rights Commission reported that the Integrity perception index of PPS improved from 6.8 to 8.52 out of 10 since the launch of KONEPS" (OECD)

A similar e-procurement system could reduce corruption by promoting transparency in government transactions. Going back to the example of the Chameliya Hydropower Project, the irregularities in the cost of the project may have been detected if there were a similar electronic funds flow. Transparency of government transactions would hold government officials accountable and reduce the instances of misappropriation of project funds.

### Conclusion

Nepal's development trajectory and current state of development can be explained largely by the prevalence of political instability and corruption over the last several decades. While political instability and corruption may have a direct impact on real GDP growth, in the case of Nepal, these factors have also hindered economic growth by limiting the expansion of energy infrastructure. Failure to recognize massive hydropower potential is an

indicator that there is reform needed in the energy sector. However, political instability has led to a lack of government incentives and political feasibility of both energy sector reform and the funding and implementation of hydropower projects. Additionally, political instability leads to opportunist, rent seeking behavior, especially within the procurement of large energy infrastructure projects.

As both the related literature and the example of Bhutan attest, energy infrastructure is positively correlated with economic growth. Investing in energy infrastructure and in turn increasing accessibility to electricity can increase household income (of electrified households), decrease costs to firms, increase productivity, and crowd-in other forms of investment.

In order to achieve greater economic development, Nepal should continue with current hydropower initiatives, like The World Bank Initiative, Nepal: Power Sector Reform and Sustainable Hydropower Development. However, to insure that corruption does not taint the implementation of this initiatives and others of the same nature, Nepal must also ensure greater transparency in government spending and public procurement. This can be achieved through an increase in the frequency of external audits of large infrastructure projects and the adoption of an e-procurement system.



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# Using Behavioral Economics to Reduce Police-Inflicted Death

Benjamin Westermeyer

## *I. Introduction*

Tamir Rice, Eric Garner, Michael Brown, Laquan McDonald, Alton Sterling, Philando Castile, and Justine Damond lost their lives to people that were supposed to protect them. Controversial deaths at the hands of police officers permeate headlines more frequently each year, confirming the persistence of the problem and the urgency of reform. Often, conversations about police-inflicted death revolve excessively around the court cases. While we should critique the justice system's inability to hold police accountable, we ought to focus more on how to prevent these shootings in the first place. Behavioral economics provides insights into the workings of the mind of the utility-optimizing police officer. Policymakers could use these insights to equip officers with the ability and incentive to deescalate tense confrontations safely.

Consider a time when you were discussing a sensitive topic with a friend and an argument emerged. You can focus your energy on a variety of things in such a disagreement. You could analyze your friend's word choice, evaluate their credibility, or predict where you expect their argument is going next. Because your analytical energy is scarce, you cannot fully focus on all

of these details; you must allocate your concentration. If you focus too much on predicting what their argument is before it fully develops, you might attack a straw man, rendering your friend upset and yourself foolish. Your analysis is not in the current moment, but wanders into a hypothetical future. If you instead focus on analyzing their present word choice, you will understand their point more accurately and respond more appropriately. Keeping your mind in the present prevents misunderstanding. Danny Kahneman (2011) describes the brain in terms of two systems: System 1 is impulsive and instinctive, while System 2 is deliberate and analytical. When we decide where to apply our critical energy, we are choosing how much to focus our System 2 on present information.

While arguing with a friend is a universal experience, few people have served as police officers. Even so, the agent in both situations chooses how much to direct their System 2 analysis towards present information and how much to direct it towards the past or the hypothetical. The agent in each situation can reduce the chance of a misunderstanding by focusing their analysis on the present. In an argument with a friend, a misunderstanding might compromise a relationship; in Officer Jeronimo Yanez's encounter with Philando Castile, a misunderstanding killed. Police departments should offer their officers Crisis Intervention Team de-escalation training and financial rewards for learning the names of community members so that during intense encounters, they will feel more socially competent and

engaged. They will focus their System 2 on present information and shoot fewer civilians.

## *II. Review of Literature*

High-profile police shootings have prompted experts and laypeople alike to delve into the systemic problems behind policing. Because the most infamous stories involve black males, the analysis starts with race. Due to the lack of comprehensive national data on police shootings, it is difficult to draw general conclusions about nationwide patterns in policing. However, Ben Montgomery of the Tampa Bay Times (2014) collected data on police shootings in Florida, the third most populous state and a good representation of countrywide demographics. Montgomery found that over a 6-year period, 827 people were shot by police in Florida at a constant rate of about 130 people per year. Of those, 40% were black, even though the population of Florida is 17% black. If you are black in Florida, you are about four times more likely to be shot by the police than a white person.

Academic literature supports evidence of disproportional racial discrimination in policing. Alpert et al. (2005) show that non-behavioral characteristics, such as race, affect police officers' suspicion of civilians. Their study found that minority status does "influence an officer's decision to form non-behavioral as opposed to behavioral suspicion." In another study, Gelman (2012) analyzed 125,000 pedestrian stops under the NYPD's stop-

and-frisk policy. He found that people of African and Hispanic descent were stopped more frequently than whites, even after controlling for each race's crime participation rate. These studies support the hypothesis that when officers interact with minorities, they increase suspicion regardless of the civilian's behavior. Since the officer disregards actual behavior, he has lowered his System 2's attention on the present. The findings indicate that System 2's focus on the present is elastic with respect to race of the civilian.

While Gelman and Alpert study the officer's perspective, Bradley (1998) explains the vicious cycle of racial minorities' negative perceptions of police officers. The worse the perception of the police, the more tense the interaction. Officers feel these negative perceptions, and it can create additional pressure, making it even harder for them to do their job well. Bradley points out that it is difficult to have positive relationships with every demographic in a diverse community. In his study, youth and people of ethnic minorities felt that police failed to address their concerns (Bradley, 1998). Building a connection with these alienated groups will enable more positive interactions, making a police officer's work safer and more rewarding. In other words, an officer's sense of safety and enjoyment of his work are elastic with respect to his sense of community.

Police departments could use an insight from outside of the law enforcement literature to help officers better acquaint themselves with their communities. Aiken (1989) revealed that teacher recognition of student



names catalyzes the development of mutual respect. This finding is extendable to civilian-officer relations. Knowing a civilian's name creates a sense of respect that can defuse tense situations. Daytona Beach body cam footage shows a man on drugs approaching a squad car with a knife. The police officer says, "Why don't you chill out Derek?" making the interaction personal. This phrase has an undoubtedly different feel than simply "Why don't you chill out, man?" Instead of a deranged, shirtless black man, he's Derek. The police officer tasered Derek, handcuffed him, and said, "Hey Derek, it's not a smart idea to have a knife coming at the police." If an officer knows the name of the person he encounters, Aiken's research suggests that he will have more respect and empathy for that person. The more respect you have for a person, the more present you will be, not allowing your mind to wander into hypotheticals.

Police departments should offer a weekly reward to the officer that learns the most community member names in that week. Officers who know more names have greater social prowess in their communities, making encounters safer for both parties. I recommend weekly awards because of their frequency and immediacy. First, the law of diminishing marginal benefits says that utility is the square root of the benefit. If you get a lump sum payment of \$16, your utility is 4. If you instead get four separate payments of \$4, totaling the same \$16, you get a total utility of 8. Thus, frequent small windfalls of money create more total utility than just a few

large windfalls. The second reason I recommend weekly awards is because they are more effective for people with time inconsistent preferences. Humans tend to overvalue present benefits and excessively discount distant ones (O'Donoghue & Rabin, 1999). The immediacy of weekly awards accommodates this irrational tendency. Officers will be more motivated to get to know names at the beginning of the week if they know a reward is imminent. If the reward only comes at the end of the month or the end of the year, the goal seems distant and of little value. Long-term rewards are not salient enough to change behavior significantly.

Learning names is not the only way to improve policing. A well-known program for training officers in helping the mentally ill is called Crisis Intervention Team (CIT). It is a valuable resource, as one third of all 827 police shootings in Florida involved someone with a mental illness (Montgomery 2014). Officers undergo 40 hours of training in recognizing mental illness and practicing de-escalation techniques. In one focus group study by Hanafi et al. (2008), officers discuss how the Crisis Intervention Team program improved their intense interactions with the mentally ill. Officers reported that increased knowledge of mental illness improved their empathy, reduced stereotyping, and enhanced their ability to respond properly. Although CIT focuses on those with mental illness, officers can apply the empathy skills they learn from training to interactions with all citizens. Empathy is a sign that an officer is focused on listening to the person

in front of him; so, taking the de-escalation training increases System 2's focus on the present moment.

Police departments should train their officers in CIT because it benefits both the officer and the civilian. Oliva (2010) says, "De-escalation techniques can be an effective intervention tool that not only helps individuals who are in crisis but also reduces police liability and injury." Because CIT reduces risk of injury, officers that take the training feel safer and more comfortable applying System 2 to present information rather than focusing on what to do in the worst-case scenario. Thus, sense of safety is elastic with respect to de-escalation training.

In my comparative statistics, I will focus on how increasing CIT training and the number of names an officer knows can increase their System 2's focus on present information, which can save lives. Since a large portion of my literature review focuses directly on race, it may seem strange that I do not consider a policy change that specifically targets racial bias. However, overcoming racial bias is a matter of learning empathy and shedding stereotypes. The literature shows that CIT and name-knowing help officers accomplish both.

Opponents might argue that System 2's focus on the present is not correlated with a police officer's decision to shoot. This view underestimates the danger of focusing on the worst-case scenario. Philando Castile told Officer Jeronimo Yanez that he was carrying a firearm. Yanez said, "Don't

pull it out,” and Castile responded, “I’m not pulling it out.” Yanez then shot Castile seven times, killing him. Yanez’s failure to hear and interpret what Castile was saying is symptomatic of a person whose mind had vacated the moment and fled to the worst-case scenario. Ramsey County Attorney John Choi said, “No reasonable officer knowing, seeing, and hearing what Officer Yanez did at the time would have used deadly force under these circumstances.” But Yanez was not seeing and hearing what was happening at the time. He was seeing and hearing a false future, in which Castile was going to shoot him. If Yanez had focused his energy on how to respond to the present situation rather than a hypothetical situation, Castile may still be alive today.

Skeptics may also suggest that increasing officers’ experience before they go out into the field would be more effective than influencing the officer’s mind. This is supported by relevant literature. For example, McElvain (2008) found that the risk of officer-involved shooting diminishes as the officer ages. Anecdotally, Darren Wilson was 28 when he fatally shot Michael Brown; Daniel Pantaleo was 29 when he choked out Eric Garner; Timothy Loehmann was 26 when he killed Tamir Rice; and Peter Liang was 27 when he accidentally fired his weapon, taking Akai Gurley’s life. A simple fix, some may say, would be to raise the age at which police departments recruit officers. Unfortunately, police departments are already struggling more than ever to recruit enough new officers (The Economist,

2017). To shrink their pool of potential recruits even further by raising the age minimum would not be in their best interest. I do account for officer field experience in my model, but it is not the most financially feasible variable to change.

### *III. Theory and Models*

To examine the effects of incentivizing officers to learn more names of people in the community, I will utilize the Planner-Doer model framework (Thaler & Shefrin, 1981). The Planner is the police officer when he is determining how many community member names ( $n$ ) to learn throughout the week. He understands that getting to know more people now will benefit his future self when he encounters community members in hostile situations. The Doer is the officer when he is in one particular hostile situation. For the Planner,  $n$  is endogenous; for the Doer, it is not. The Planner-Doer framework is only relevant for the name incentive. The CIT de-escalation training only relates to The Doer.

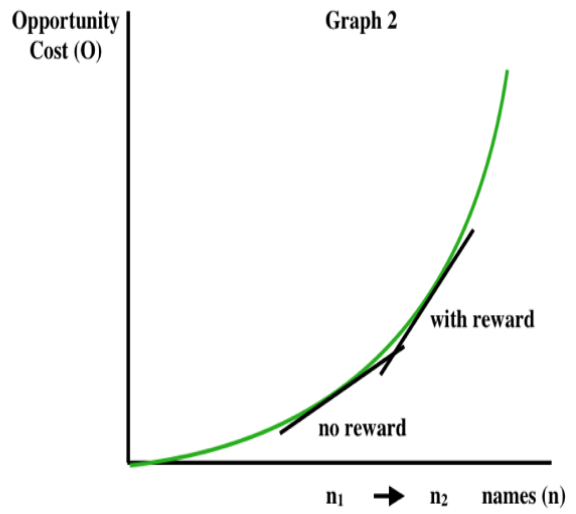
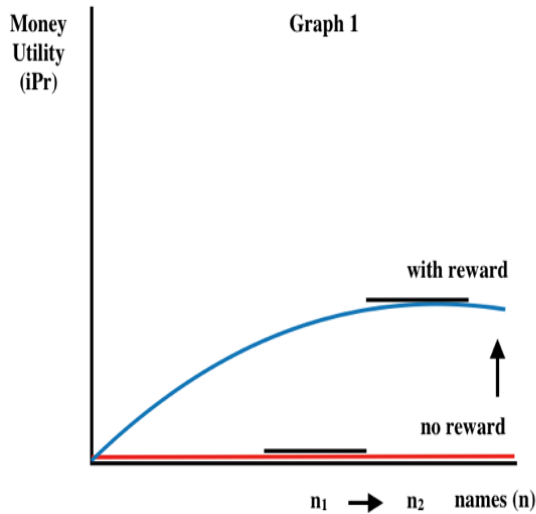
Model 1: The Planner

$$\max_n D(n) + iPr_w(n) - O(n)$$

$n$  = number of names of people in the community that the officers knows  
 $D$  = diagnostic utility the officer gets from knowing the community well  
 $i$  = weekly reward that the police department gives to the officer that learns the most names  
 $Pr_w$  = probability of winning the reward for learning the most names  
 $O$  = opportunity cost of putting in effort to learn names

**Policy Change 1: Implementation of Name Knowing Reward (↑i)**

<b>First Order Condition</b>	$\partial\pi : \frac{\partial D}{\partial n} + i\frac{\partial Pr_w}{\partial n} - \frac{\partial O}{\partial n} = 0$		
<b>Exogenous Δ</b>		↑	> 0
<b>Necessary Endogenous Δ to Counterbalance</b>	↓	↓	↑
<b>Δ in choice variable to achieve the counterbalance</b>	↑ n	↑ n	↑ n



The table and graphs above represent the implementation of a weekly monetary reward for the officer at the department who learns the most names that week. This incentive creates a new benefit for the officer. When there was no reward, the utility over money was constant at zero. Now, instead of

just getting diagnostic utility for learning names, he gets utility from the possibility of winning the reward too. Because the reward expands the total marginal benefit of learning a name, the officer will learn more names until the marginal utility diminishes enough or the opportunity cost increases enough to bring the first order condition back to zero.

Model 2: The Doer, During a Potentially Dangerous Civilian Confrontation

$$\max_p \beta_S S(p, Pr_a, h, c(t, n), r) + \beta_D D(p, n, f)$$

$p$  = System 2's focus on present information

$\beta_S$  = importance that the officer places on his own safety

$S$  = sense of personal safety

$Pr_a$  = perceived probability that the man will attack the police officer

$h$  = officer's experience with similar situations in the past

$c$  = sense of social competency in the community

$t$  = hours of CIT de-escalation training

$n$  = number of names of people in the community that the officers knows

$r$  = race of the civilian

$\beta_D$  = importance that the officer places on the safety of his community

$D$  = diagnostic utility from deescalating the situation peacefully

$f$  = fatigue

This model of the Doer captures a police officer's self-interested analysis of a situation, in which he approaches a seemingly dangerous man. The officer decides how much to focus his System 2 on present information, such as the words and actual behavior of the civilian, and how much to focus on past or hypothetical information, such as anticipating and preparing for the worst case scenario.

In this model, police officers are attempting to maximize both their own sense of personal safety and the diagnostic utility they get from safely deescalating the situation. The two are at odds with each other: an officer's utility during an encounter with a civilian is a balancing act between protecting himself and protecting the community he serves.

A survey of nearly 8,000 sworn police officers found that 58% of officers nearly always or often feel proud of their police work (Pew Research, 2016). Thus, we can infer that a majority of sworn officers were drawn to the profession because they deemed it meaningful work. They likely wanted to make the community a safer place. Thus, they derive diagnostic utility—pleasure from feeling like they are making the world a better place— from enforcing the law in the community to make it safer. This poll signals the salience of diagnostic utility in a police officer's utility maximization.

Whenever any person is in a dangerous situation, personal safety is at the forefront of their utility maximization problem. The Pew Research poll shows that this is truer than ever for police officers: 93% of respondents say that they have become more concerned with their safety recently due to high-profile shootings.

Both safety ( $S$ ) and diagnostic utility ( $D$ ) have beta weights on them ( $\beta_S, \beta_D$ ), accounting for the fact that each officer values their personal safety and their community's safety differently. When the officer increases his System 2's focus on present information ( $p$ ), he compromises his sense of

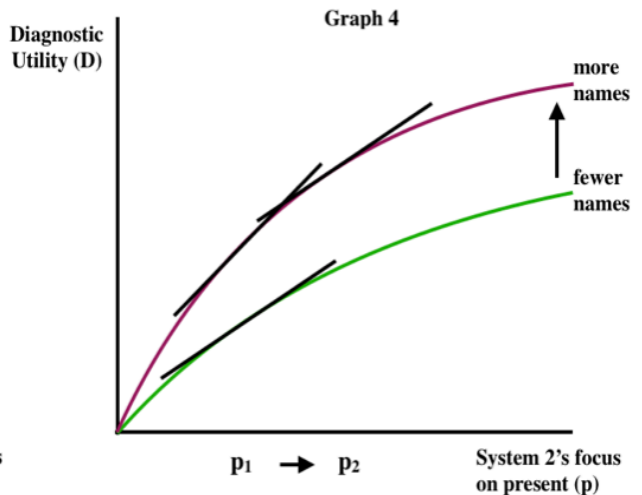
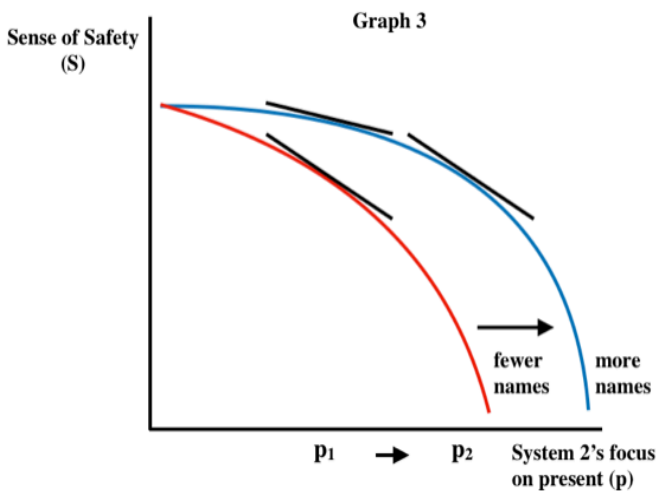


personal safety because he ignores the worst-case scenario, rendering him more vulnerable. The following are exogenous factors impacting sense of safety: First, a higher perceived probability that the civilian will attack ( $Pr_a$ ) makes the officer feel less safe. Second, the officer's experience with similar situations in the past ( $h$ ) will increase his sense of safety; seasoned officers are more comfortable with tense situations and less likely to panic (McElvain, 2008). Third, the race of the civilian ( $r$ ), a categorical variable, impacts personal safety most negatively when the man is black. Last and most important for our analysis is the officer's sense of social competency ( $c$ ). This variable depends on the officer's amount of de-escalation training ( $t$ ) and connection to the community, measured through the number of names of community members he knows ( $n$ ). While  $n$  was endogenous for the Planner in Model 1, it is now exogenous because it is fixed in the moment of a specific encounter.

Shifting focus to the diagnostic utility term, increasing System 2's focus on present information will increase the diagnostic utility gained during an interaction with a civilian. A social interaction is more rewarding when you feel like you are paying attention to what someone is saying and doing. Higher levels of fatigue ( $f$ ) lower the potential for feeling diagnostic utility. Last, the connection to the community again comes into play. The more names an officer knows in the community, the more he will enjoy helping that community.

**Effect of Policy Change 1: Increase in Number of Names Known ( $\uparrow n$ )**

<b>First Order Condition</b>	$\partial\pi : \beta_S \frac{\partial S(Pr_a, h, c(t, n), r)}{\partial p} + \beta_D \frac{\partial D(n, f)}{\partial p} = 0$		
<b>Exogenous <math>\Delta</math></b>	$(-) \uparrow$	$\uparrow$	$> 0$
<b>Necessary Endogenous <math>\Delta</math> to Counterbalance</b>	$\downarrow$	$\downarrow$	
<b><math>\Delta</math> in choice variable to achieve the counterbalance</b>	$\uparrow p$	$\uparrow p$	

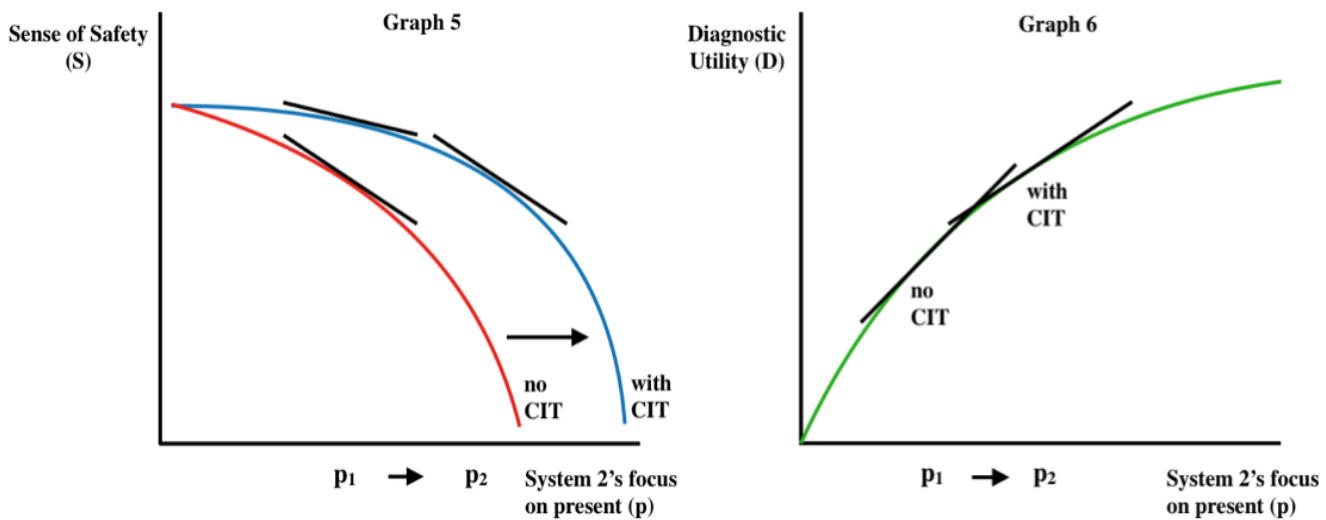


The exogenous change shown above is the effect of officers' knowing more names of people in the community. The number of names known increased because of the Planner's response to the incentive in Model 1. Knowing more names increases the officer's sense of social competency ( $c$ ) in these situations because he feels more familiar with the people he interacts with. Due to this higher level of social comfort, the safety curve shifts

outward. On this new curve, the marginal loss in sense of personal safety due to an increase in System 2's focus on the present is smaller than it was on the old curve, as shown on Graph 3. Knowing more names also increases the officer's marginal diagnostic utility because he feels a more intimate connection with the people he serves. Thus, the diagnostic utility curve shifts out. Both graph shifts make the first order condition greater than zero; so, the officer is no longer maximizing utility. In order to maximize, he has two options: First, he can increase his System 2's focus on the present until the marginal loss of personal safety is back to where it originally was. Second, he could increase System 2's focus on the present until marginal diagnostic utility is where it was before. Either way, the police officer will increase his or her System 2's focus on the present.

**Policy Change 2: Implementation of CIT Training (↑t)**

<b>First Order Condition</b>	$\partial\pi : \beta_S \frac{\partial S(Pr_a, h, c(t, n), r)}{\partial p} + \beta_D \frac{\partial D(n, f)}{\partial p} = 0$	
<b>Exogenous Δ</b>	$(-) \uparrow$	$> 0$
<b>Necessary Endogenous Δ to Counterbalance</b>	$\downarrow$	$\downarrow$
<b>Δ in choice variable to achieve the counterbalance</b>	$\uparrow p$	$\uparrow p$



The exogenous change in the above example is forty hours of Crisis

Intervention Team training (t). Implementing this training increases the officer's sense of social competency (c) in these situations because he has had practice and knows how to respond. Due to this higher level of competency, the safety curve shifts outward. On this new curve, the marginal loss in sense of personal safety due to an increase in System 2's focus on present information is smaller than it was on the old curve. This makes the first order condition greater than zero; so, the officer is no longer maximizing utility. In order to maximize, the officer has two options. First, he can increase his System 2's focus on the present until the marginal decrease in sense of safety rises to what it originally was. This is shown on Graph 5 as the officer moves from  $p_1$  to  $p_2$  until the slope is the same as it was before the training was implemented. He can also increase System 2's focus on the present until the

marginal increase in diagnostic utility is lower than it was initially. This is shown on Graph 6 as he moves from  $p_1$  to  $p_2$ .

#### *IV. Conclusion and Discussion*

Based on the 130 annual police shootings in Florida, around 2,531 people are shot by police each year nationwide. 2,531 sounds insignificant compared to the 44,193 annual suicides (AFSP, 2015) or 34,439 fatal car accidents (NHTSA, 2016). So, why focus on police killings? First, they are systemic. Police departments exist across the country, and thus police kill people across the country. Second, many police killings are avoidable. Police killings are often due to confusion that generates chaos. Shifting System 2's focus to the present information available can prevent these misunderstandings and avoid the use of deadly force. Third, police killings create a vicious negative externality. They are a bigger problem than the deaths they directly cause. Every police-inflicted death erodes trust in a system that is meant to serve and protect people. When police kill, civilians are less likely to call when they are in trouble. When police kill, civilians will act more hostilely towards officers, increasing the likelihood of future heated encounters. Improving police interactions can save many more lives than just the ones directly lost at the hands of officers.

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## **Free Trade and Pharmaceuticals: Canadian-American Pharmaceutical Trade and American Access to Affordable Drugs**

Kelsey Myers

Abstract: American pharmaceutical prices are the highest in the world, making life-saving medications financially inaccessible to many. Legislation like the “Safe and Affordable Drugs from Canada Act” would attempt to resolve this issue by allowing for the direct importation of Canadian drugs, which are sold at far lower prices. This study explores the theoretical economic impacts of this type of free trade legislation, concluding that these types of laws would cause a rapid decrease in drug prices at the expense of American pharmaceutical firms.

### I. Introduction:

Access to healthcare has become one of the most prominent and salient debates in current American politics. Though access to primary care, hospitals, and emergency rooms are all significant components of an adequate public healthcare sector, there are perhaps few features more important to the welfare of this system than affordable pharmaceuticals. With scientific breakthroughs, more and more Americans receive the care they need through pills and shots than in the past. In many ways, this progress is a boon: debilitating and dangerous diseases and infections can now be cured, or at least treated. What once required a complicated procedure can now be



rectified through a patch or pill. Inarguably, America has become a healthier society through these medical epiphanies.

However, these pharmaceuticals do little good when their prices are high enough to be practically inaccessible. Mylan CEO, Heather Bresch, recently faced a congressional hearing for the price hikes of EpiPens, a drug that prevents death in the instance of a severe allergic reaction. Bresch was asked to consider the harsh realities of making these drugs financially inaccessible when one senator forced her to admit that she had never actually witnessed a person in anaphylactic shock, a reaction her drugs were designed to prevent and mitigate. Multiple sclerosis patients pay as much as \$10,000 out of pocket annually for drugs that help prevent outbreaks causing blindness, paralysis, and loss of cognitive function, and many routinely choose not to take these prescriptions due to the expense. American pharmaceuticals are some of the most expensive in the world, due, at least in part, to less strenuous pricing regulations than those of Europe and Canada.

This problem is only worsening with time. Pharmaceuticals are getting more, not less, expensive across most markets and product lines, especially in the United States. As drugs become more expensive, their prices become an ever more salient hazard for general public health.

Some legislators believe the answer to this pressing conundrum is more open trade across national borders in the pharmaceutical industry. Legislators have found a number of ways to at least partially bridge the separation

between the American pharmaceutical industry and international competition. Some bills have proposed “reciprocal approval,” whereby drugs and pharmaceutical patents that have been approved in certain specified other countries can receive expedited Food and Drug Administration approval in the United States. This express lane to regulatory approval would be especially prudent in circumstances in which such drugs are not available in the United States, or when, due to monopolies or rapid industry price spikes, comparable drugs are financially inaccessible in the United States. Other proposals include legislation that prevents lobbying money and kickbacks from being used as a tool to delay the approval of international drugs by the Food and Drug Administration for sale in the American pharmaceutical market. In general, these bills seek to mitigate the separation between American and international pharmaceutical industries imposed by national borders, protectionist policies, and transnational trade regulation in order to decrease the price of drugs, or at least slow the growth of pharmaceutical prices, through increased competition.

Senators Amy Klobuchar and John McCain proposed legislation this January to allow American citizens and pharmacies to import pharmaceutical drugs from Canada, where prescriptions are on average half as expensive as they are in the United States. This “Safe and Affordable Drugs from Canada Act” is superior to other legislation at controlling pharmaceutical prices in that it allows American consumers and pharmaceutical providers to buy

Canadian drugs *at Canadian prices*. Other legislation merely allows Canadian pharmaceutical companies to sell their products within the United States. While this does theoretically increase competition, most firms adjust to the higher price levels of the pharmaceutical industry of the United States when they begin selling drugs in the United States. This is why Gleevec, a cancer treatment drug, costs \$6,214 monthly per customer in the United States, but only \$1,141 monthly per customer in Canada. Other cancer treatment producers in the United States would have to drop their prices by a great deal more to compete with the Canadian price of Gleevec than to compete with the American price. The "Safe and Affordable Drugs from Canada Act" ensures these more dramatic price drops.

The United States has not consistently supported such policies, instead choosing to isolate the American pharmaceutical industry from foreign competition. As American consumers now live with some of the most expensive drugs in the world, it seems prudent to evaluate whether this strategy is fostering healthy communities and societies in the United States, especially as it seems clear that financial access to pharmaceuticals is key to public health. As such, this study will explore the impacts of the United States' employing a more open trade policy in the pharmaceutical industry with Canada as a method of controlling pharmaceutical prices for the American consumer.

This article will do so by reviewing related economic and social science literature and applying a number of relevant international economic trade theory models to this particular case study. This research argues that policies like the “Safe and Affordable Drugs from Canada Act” would theoretically be greatly advantageous to the American consumer in need of prescription pharmaceuticals. Therefore, this and similar legislation could represent a great increase to the quality of public health in the United States.

## II. Literature Review:

There is a great deal of literature relevant to the study of international trade law specifically applied to the case of pharmaceuticals and medical products. Much of it is focused upon research directly related to many topics tangential to, or directly in line with, this study's thesis concerning the pricing implications of legalized pharmaceutical imports to the United States from Canada. These include the importance of patent protections, the relationships between developed and developing countries, and the impacts on future pharmacological innovation, among other subjects.

Nearly all studies concerned with pharmaceutical reform or status quo include an analysis on the consequences to patent holders and patent law.

Lopert and Gleeson 2013<sup>1</sup>, for instance, traces the evolution of

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<sup>1</sup> Ruth Lopert and Deborah Gleeson, “The High Price of ‘Free Trade’: U.S. Trade Agreements and Access to Medicine,” *The Journal of Law, Medicine, and Ethics* 41, no. 1 (2013): 199-223.

pharmaceutical patent protections in the United States. Arfwedson 2004<sup>2</sup> argues against the type of re-importation legalized under the “Safe and Affordable Drugs from Canada Act” based upon not only the relative risk of unsafe drugs (resulting from the lack of Food and Drug Administration regulation), but also because this undermines patent protections in the United States. Arfwedson also investigates how this lack of patent protection will impact later pharmaceutical research and development, a topic explored in greater detail below. Rotstein 1994<sup>3</sup> is devoted entirely to addressing pragmatic methods of pharmaceutical patent protection under international trade regimes, like NAFTA. These types of investigations are useful to the legalistic understanding of pharmaceutical companies’ various legislative protections and their pragmatic execution in a complex economic structure, but are at best only indirectly concerned with the types of price controls of drugs that are the focus of this study.

Tangentially, some studies are concerned with how this patent law impacts prices, but only on a macro-economic scale in regards to the Global North and Global South. Fellmeth 2004,<sup>4</sup> for instance, legalistically reviews TRIPS, an important global agreement concerning international

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<sup>2</sup> Jacob Arfwedson, “Reimportation (Parallel Trade) in Pharmaceuticals,” *Institute for Policy Innovation Policy Report 182* (2004)

<sup>3</sup> Abraham Rotstein, “Intellectual Property and the Canada-U.S. Free Trade Agreement: The Case of Pharmaceuticals,” *Intellectual Property Rights* (1994)

<sup>4</sup> Aaron Xavier Fellmeth, “Secrecy, Monopoly, and Access to Pharmaceuticals in International Trade Law: Protection of Marketing Approval Data under the TRIPS Agreement,” *Harvard International Law Journal* 45 (2004)

pharmaceutical trade that accounts for national quality review processes and international patent protections. Responses to TRIPS, like Fellmeth's, debate upon the relative importance of patent protections for developed nations' pharmacological innovators and of developing nations' clear need for financially accessible drugs. Rein 2001<sup>5</sup> applies this conundrum specifically to the case of the AIDS epidemic, in which expensive developed nations' pharmaceutical research and development was desperately and immediately needed in impacted nations, all of which were lower-income. While these studies do more directly balance patent protections with consumer pharmaceutical access, they do so on a global scale, rather than within domestic markets.

Other research explores another topic tangential to pharmaceutical patent protections: impacts on future pharmaceutical research and development. Due to the fact that many of the companies that produce expensive pharmaceuticals are the same producers that invest in future pharmaceutical research and development, many theorize that a drop in prices could result in a likewise decrease in medical innovation. Danzon and Furukwa 2008<sup>6</sup> investigate this claim by examining the price levels of drugs in different countries and the corresponding levels of pharmacological innovation in each

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<sup>5</sup> Judy Rein, "International Governance through Trade Agreements: Patent Protection for Essential Medicines," *Northwestern Journal of International Law and Business* 21, no. 2 (2001): 379-408.

<sup>6</sup> Patricia M. Danzon and Michael F. Furukwa, "International Prices and Availability of Pharmaceuticals in 2005," *Health Affairs* 27, no. 1 (2004): 221-233.

nation. They postulate that the United States may have discovered more successful pharmacological research and development breakthroughs based upon their higher pharmaceutical prices. Light and Lexchin 2005,<sup>7</sup> on the other hand, argue against this notion that higher United States price levels are used to fund research and development, and that more regulated prices would lead to a decrease in medical innovation. They found little evidence to substantiate this theory. Though these more pragmatic evaluations of patent protection consequences are related to some elements this study's economic analysis, they do not capture the broader scope of the following theoretical models.

Other studies concern topics more similar to those of this research. Vernon, Goupil, and Golec 2006<sup>8</sup> discuss the current practice of importing pharmaceuticals over the internet, but lack the theoretical models of this study or the specific focus of Canadian exports to America. Similarly, Hollis and Ibbott 2006<sup>9</sup> discuss internet trade in regards to the American-Canadian case, but again without these same economic models. Pecorino 2002<sup>10</sup> does focus on this case, but once more forgoes a discussion of general trade models for specific theoretical calculations of bargaining power.

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<sup>7</sup> Donald W. Light and Joel Lexchin, "Foreign Free Riders and the High Price of U.S. Medicines," *BMJ* (2005)

<sup>8</sup> John A. Vernon, Stephan Goupil, and Joseph H. Golec, "The Internet and Pharmaceutical Importation: Economic Realities and Other Related Issues," *Albany Law Journal of Science and Technology* (2006)

<sup>9</sup> Aidan Hollis and Peter Ibbott, "How Parallel Trade Affects Drug Policies and Prices in Canada and the United States," *American Journal of Law and Medicine* 32, no. 3 (2006)

<sup>10</sup> Paul Pecorino, "Should the US Allow Prescription Drug Reimports from Canada," *Health Econ* 21, no 4 (2002): 699-708.

Grootendorst 2004<sup>11</sup> does contain these types of theoretical economic analysis applied to the American-Canadian pharmaceutical import case, but focuses on the impacts for one individual firm, rather than a general industry, which would be broadly impacted by a bill like the “Safe and Affordable Drugs from Canada Act.” Other studies explore pharmaceutical trade through the concept of “parallel trade.” Kyle<sup>12</sup> applies this concept to the European Union. This study seeks to fill the evident gap in the literature by exploring the case of American-Canadian pharmaceutical trade through general economic theoretical models aimed at the broader drug industry. This research asserts that such open trade would make drugs generally less expensive, to the detriment of American pharmaceutical producers.

### III. Economic Analysis: Theoretical Models and Policy Evaluation

International trade theory can easily be applied to this case study of international drug sales between Canada and the United States as a tool of analysis. While these arguments are entirely theoretical in nature, rather than based upon empirical data, this is conducive to the predictive nature of this study (as the “Safe and Affordable Drugs from Canada Act” has not yet been enacted). The following original analysis includes three models pertaining to the American-Canadian pharmaceutical trade: differences in endowment in the pharmaceutical industry between Canada and the U.S., differences

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<sup>11</sup> Paul Grootendorst, “The Economics of Cross-Border Trade in Pharmaceuticals: Theory and Evidence,” *Journal of Pharmaceutical Marketing and Management* 16, no. 3 (2004): 99-109.

<sup>12</sup> Margaret K. Kyle, “Parallel Trade in Pharmaceuticals: Firm Responses and Competition Policy,” *Fordham Competition Law Institute*: 399-419.



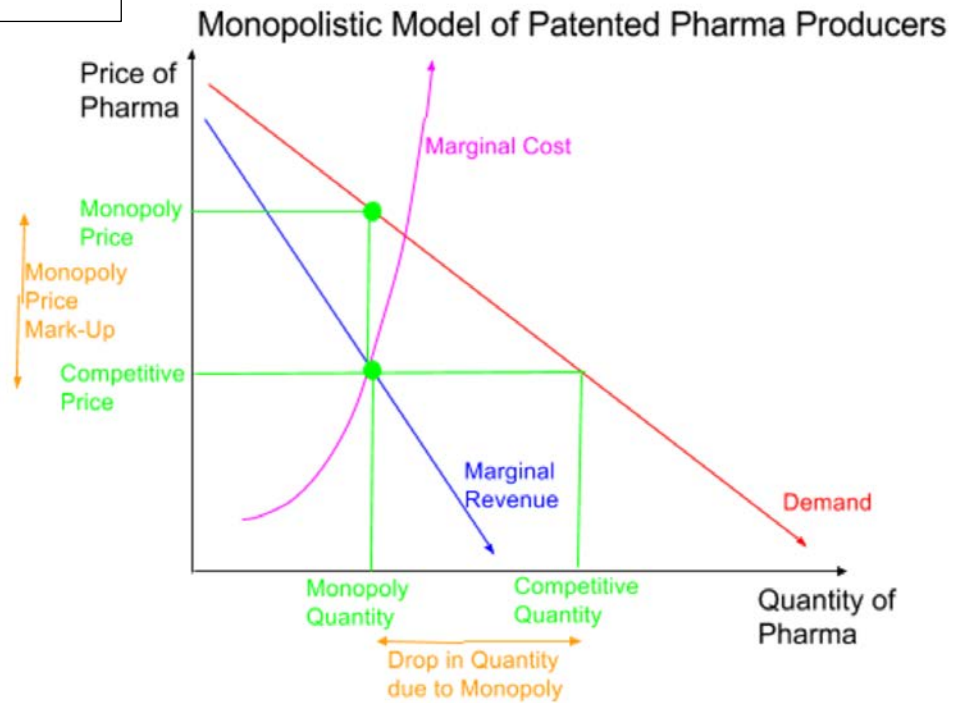
between open and closed trade models resulting from different policy proposals, and the overall impact of American pharmaceutical prices lowered by Canadian imports.

A. Monopoly Model of Current American Pharmaceutical Producers

Current American pharmaceutical producers with patents general operate under the conditions of a monopoly. This is because patents allow firms to legally shut other manufacturers out of the supply market for a significant period of time in order to protect their intellectual property. This helps incentivize expensive research and development endeavors by ensuring that for a temporary period, solely the researching industry will reap the benefits of its innovation.

This also leads to extraordinary mark-ups. Drugs are often incredibly expensive because they suffer from monopolistic pricing schemes. Eventually, after the patent expires, a more normal and competitive supply market emerges. However, due to the fact that price levels are already so high, many producers may choose to price their drugs closer to existent high prices. In this way, some of the monopolistic mark-up may be preserved for years. For this reason, background knowledge of the monopolistic pricing model as applied to this case is significant.

Graph A



Graph A indicates that under the monopolistic pricing structure prevalent in drug industries dominated by patents, American consumers experience both a drop in quantity of pharmaceuticals produced and a significant price-mark up. Both of these features of the model indicate that fewer patients will receive the medications they need. This is model also demonstrates the reason for high pharmaceutical prices in many industries.

### B. Differences in Endowment

Consider the relative national endowments of Canada and the United States in relation to the pharmaceutical industry. While neither has a clear or drastic advantage based upon human capital, natural resources, or technology, Canada still has a far greater national endowment than the United States in

the pharmaceutical industry specifically. This is based upon Canada's political support of socialized medicine, rather other classical or Ricardian factors of productivity.

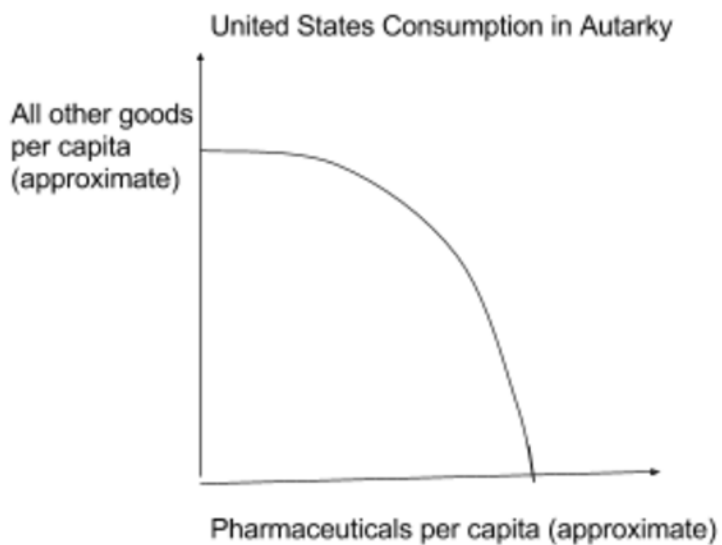
Canada's single-payer healthcare system ensures that there are only a few markets for pharmaceuticals in the country, as the government pays for most healthcare expenses. This concentrated market power in the hands of few consumers is not dissimilar from a monopsony. These powerful government consumers, therefore, are able to negotiate for low pharmaceutical prices, as they comprise the total of Canadian drug buyers. In this way, the universal and public provision of healthcare makes pharmaceuticals relatively cheaper for everyone.

In the United States, on the other hand, many different insurers have relatively small market shares as consumers, and are joined by uninsured persons, who must buy their pharmaceuticals outright. These firms and individuals act comparatively as price-takers, rather than price-setters, and therefore are not able to effectively negotiate for low pharmaceutical prices to the same extent as the Canadian government. This is one of the many reasons pharmaceuticals in the United States are so much more expensive than in other countries.

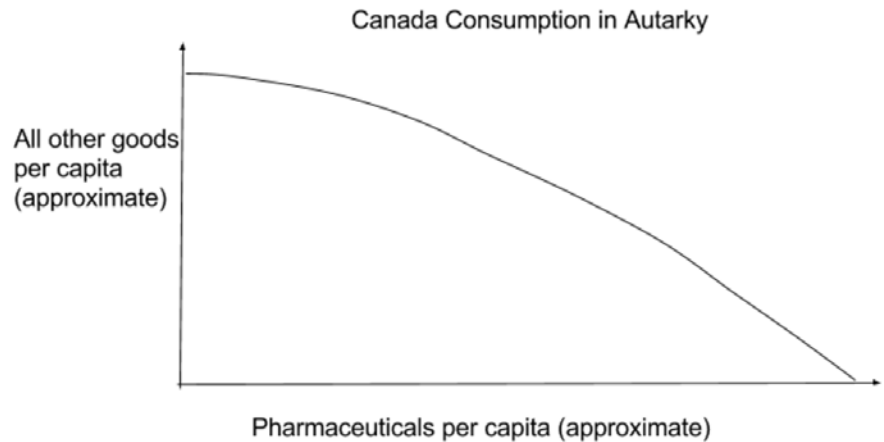
The price-taking behavior of individuals and firms as consumers in the American pharmaceutical industry is only part of the problem with negotiating for lower drug prices. Purchases of drugs by the American

government do constitute a significant market share of pharmaceutical consumption in the United States, but legislation has been instituted to prevent these government programs from negotiating with pharmaceutical companies on the prices of drugs. Medicare, a program subsidizing medicine for the elderly in the United States, is arguably the most prolific provider of public healthcare in the country. Medicare Part D ensures that Medicare is able to subsidize prescription pharmaceutical costs specifically for the elderly. However, The Medicare Modernization Act of 2003 forbids Medicare from negotiating with pharmaceutical companies on the prices of drugs, all but ensuring that these costs remain incredibly high. It is apparent that these expenses are a result not only of non-socialized medicine, but of specific legislative protections for the American pharmaceutical companies.

Graph B



Graph C



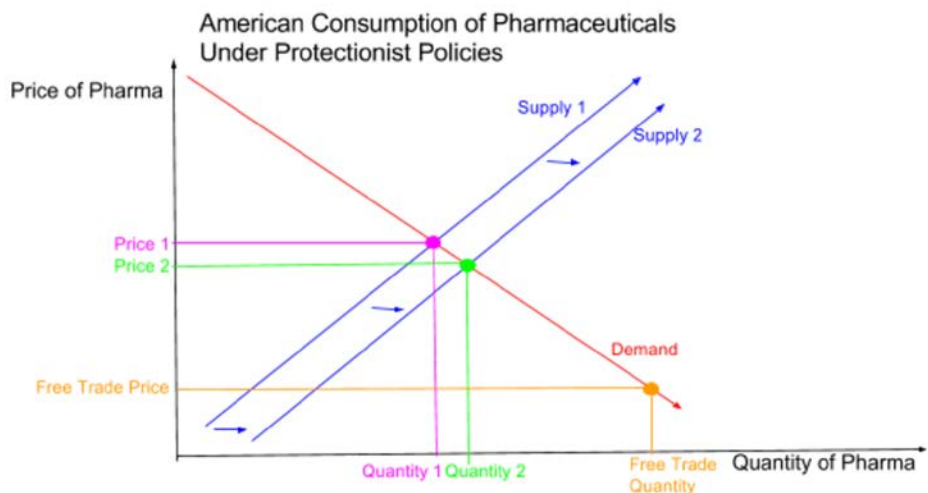
Graphs B and C compare the proclivities for United States consumption of drugs per capita in autarky as opposed to Canadian consumption of drugs per capita in autarky. As compared with all other goods, Canada has a far greater endowment in pharmaceuticals due to its extensive public healthcare structures, as opposed to the United States' weaker concentrated healthcare system and therefore less apparent national endowment. This is why the curve of Graph C is flatter, and of Graph B is steeper. Autarky consumption and prices may be, at this point, a non-inaccurate framework with which to view the American pharmaceutical industry, due to the protectionist trade policies aiming to isolate this market from international producers.

It is important to note that these graphs are purely theoretical illustrations of differing national endowment. In reality, as the price elasticity of healthcare is quite low, Canada and the United States would not differ to nearly the depicted extent in consumption per capita of necessary and life-saving prescriptions.

C. Open Trade versus Closed Trade Impacts on Price

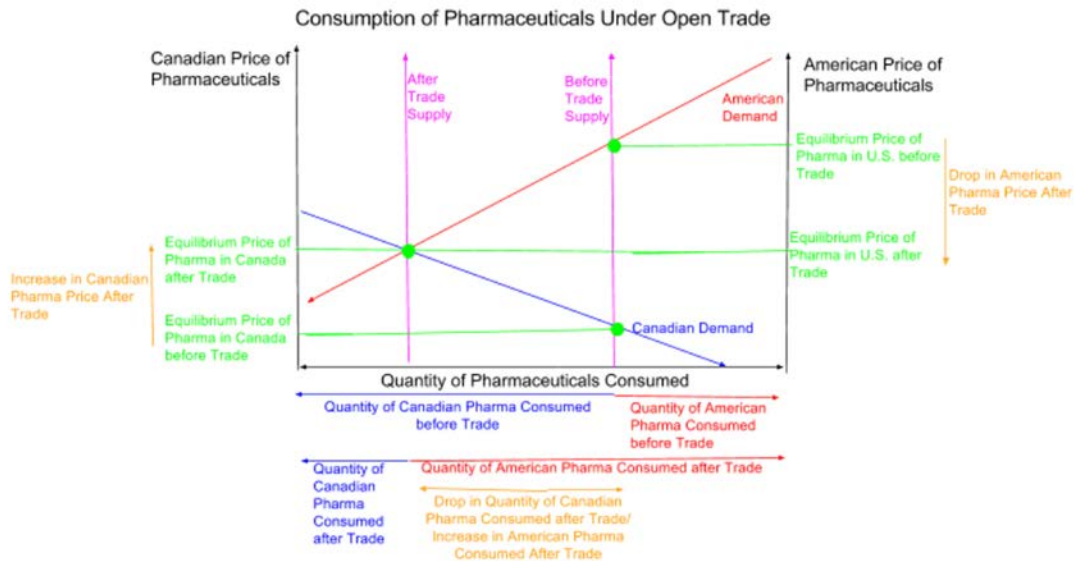
One of the most important differences between the “Safe and Affordable Drugs from Canada Act” and other legislation seeking to control American drug prices is that other pieces of legislation attempt to lower drug prices within the U.S. pharmaceutical market while maintaining protectionist trade policy. This is generally done by easing the process by which foreign pharmaceuticals are approved by the Food and Drug Administration for sale in the American drug market. Crucially, this method allows pharmaceutical companies to set higher prices when they sell drugs within the U.S. market, in accordance with existent high price levels, rather than selling drugs at the same lower prices as they do elsewhere.

Graph D



For the American consumer, this would generally translate to only a small dip in prices, if any. Increased competition and the possibly slightly lower prices of newly-introduced foreign alternatives would only moderately impact prices. This is depicted in Graph D, in which supply shifts right with the introduction of more producers into the American domestic market. Graph D illustrates only the American market, as the U.S. consumer remains isolated from international producers through protectionist trade policy and regulation. Clearly, only a small price dip and moderate increase in quantity consumed are visible as more suppliers are introduced to the American market.

Graph E



This contrasts with Graph E, which accounts for direct international pharmaceutical imports under a more open trade regime, as envisioned in the “Safe and Affordable Drugs from Canada Act.” In this case, both Canada and the U.S. are accounted for in terms of price and quantity consumed. The demand curves of Canada and the United States reflect current price levels, explaining the illustrated relatively high American demand and comparatively low Canadian demand. Graph E indicates a much more drastic drop in prices than Graph D, albeit with perhaps an unrealistic market share of pharmaceuticals consumed lost to the American market.

A comparison of these graphs clearly demonstrates why open trade with Canada in the pharmaceutical industry would theoretically far more dramatically impact American drug prices. This would make pharmaceuticals much more financially accessible to the American consumer, a veritable boon for public health in American society.

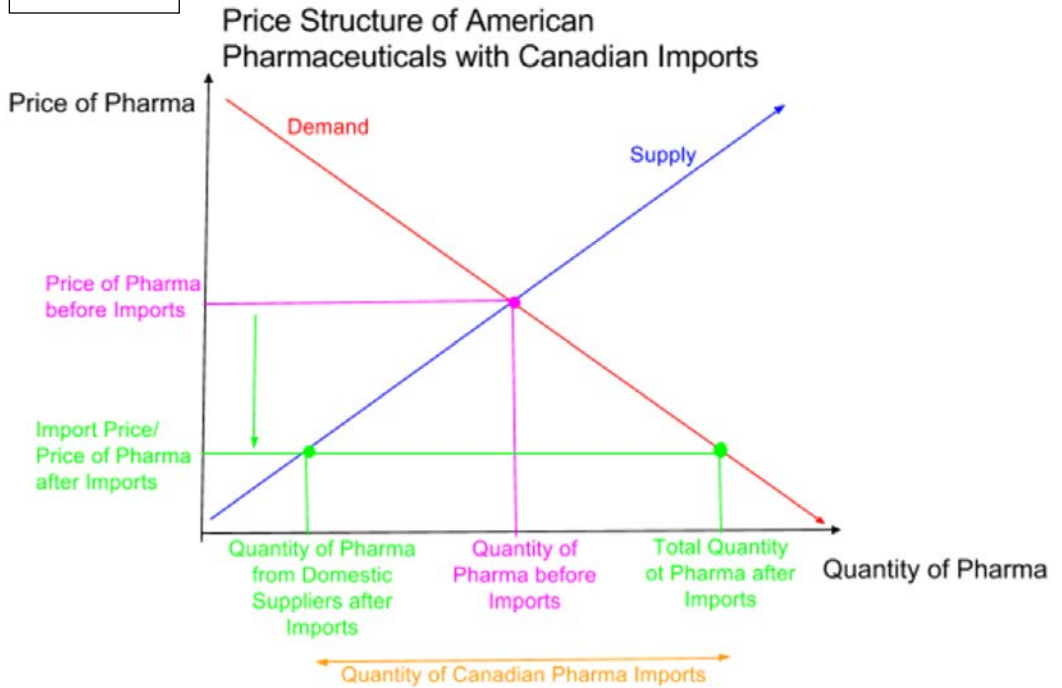
#### D. Impacts of Lowered American Drug Prices after the Introduction of Canadian Imports

Graph E illustrates some, but not all, of the impacts of a more open pharmaceutical trade policy between the United States and Canada. These omissions are better explored in Graph E. Specifically, Graph E demonstrates some of the more direct consequences of the quantity of imports that will supply American pharmaceutical consumers after institution of more open



pharmaceutical trade policies, like the “Safe and Affordable Drugs from Canada Act.”

Graph F



Graph F clarifies several consequences of the institution of legal Canadian drug imports. This comparison arises from the relative differences between the market at price points before and after the legalization of Canadian pharmaceutical trade. Not only will prices drop, but the total quantity of pharmaceuticals demanded will, predictably, increase significantly.

Additionally, Graph F clearly illustrates that this increase will result from a large quantity of Canadian imports, now the main supplier of American pharmaceuticals. Only a small quantity of drugs will be produced by United

States pharmaceutical firms. Indeed, the demand for domestically-produced pharmaceuticals will decrease, considering that prior to the institution of a more open trade policy, all pharmaceuticals were manufactured by American firms. After Canadian imports are legalized, only the least expensive American pharmaceuticals will continue to be bought by American consumers. These will likely be mainly or entirely generics, as opposed to name-brand drugs.

Herein lies the political difficulty of more open American pharmaceutical trade with Canada: the relative losers of less protectionist policies. American pharmaceutical firms and industries stand to lose out substantially to Canadian drug companies if such a legalization of imports is institutionalized. Those hardest-hit will likely be designer-brand drugs, which are those requiring the greatest profit margins in order to effectively re-invest their earnings into further pharmaceutical research and development. At present, these companies are immensely lucrative, and therefore possess great political sway over policies like the "Safe and Affordable Drugs from Canada Act." This is inarguably an enormously important explanatory factor when considering why such policies have not yet been instituted.

Many scholars also utilize these facts to present a viable counterargument against the lowering of pharmaceutical prices: the loss of medical innovation. Most high-priced drug firms are designer-brand drugs, and these are the same companies that invest the most in pharmaceutical research. This medical

research leads to pharmaceutical innovation by developing new drugs that cure or treat diseases more effectively than current pharmaceuticals, or sometimes that cure or treat medical problems that currently have no medical recourse. If these companies were to disappear, or slash their prices so drastically as to eliminate funding for new medical research and later innovation, another great hazard would be introduced to future public health. However, as previously discussed in the literature review, these causal links between research and development and inflated designer drug prices may not be as strong as previously supposed. Indeed, there is a great deal of scholarly controversy on the topic of purported decreases in future pharmacological research and development contingent on drops in pharmaceutical prices.

#### IV. Conclusion:

The high prices of American pharmaceuticals are of the utmost concern not only to the American consumer, but also the state of public health in the United States. Some legislators believe the answer to this salient national issue is the institution of free trade legislation with Canada allowing for the direct importation of cheaper pharmaceuticals. Previous research has explored a number of the facets related to this type of direct drug importation, but none adequately explored the general theoretical economic impacts on the broad pharmaceutical industry in the American-Canadian case.

This research concludes that Canada's public health infrastructure leads to a natural endowment in pharmaceuticals, and that the institution of free trade

will do more to drop Canadian prices than expedited FDA approvals. This boon for the American consumer will come at the expense of American pharmaceutical firms. This, in turn, may result in smaller investments into future medical and pharmacological research and innovation.

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## What Caused Midwestern Agrarian Protests in the Late 19<sup>th</sup> Century?

Robert Leet

In Robert Whaples' *Where is there Consensus among American Economic Historians?*, significant disagreement exists between historians and economists over the causes of agrarian unrest in the Middle West from 1870 to 1900 (Whaples 142). This lack of consensus has been a topic of scholarly debate and focuses primarily on the commercialization of agriculture, agricultural price fluctuations, and farmers' deteriorating economic status. Due to the large amount of research done on this matter, however, this paper will focus on Douglass North, Anne Mayhew, Robert McGuire, and Bradley Lewis, who, in my opinion, provide the most compelling arguments in explaining agrarian unrest in the late 19<sup>th</sup> century. While North and Mayhew believe the protests stemmed from social and qualitative factors, McGuire and Lewis argue that the protests derived from economic and quantitative elements. I, however, believe the protests did not stem from a specific cause or source, but rather, entailed a gradual, multifaceted evolution of economic, historical, and political factors.

Before delving into North, Mayhew, McGuire, and Lewis's arguments, the farmers' major complaints that are generally supported by modern historians should initially be examined. These complaints include: 1)

a decline in purchasing power, 2) high monopolistic transportation costs imposed by middlemen operators, and 3) usurious mortgage rates enforced by banks, moneylenders, and Eastern Capitalists (North 138) (Walton & Rockoff 268-272). To expand on the first two points, the decline in farmers' purchasing power implies that the price of agricultural goods fell more than the price of non-agricultural goods; so, Midwestern farmers received less income relative to their Eastern counterparts. Due to the high presence of monopolies on the East Coast, many eastern goods were sold at artificially high prices, which helps explain why agricultural prices in the Midwest remained relatively low. Since monopolists largely controlled the nation's railroad network, they did not transfer gains to the farmer when transportation and organization improved; so, Midwestern transport costs were believed to be high for this reason. Farmers were charged unnecessarily high interest rates because financial institutions in the East feared a high risk of default in the Midwest, and therefore they colluded not only to pool assets and minimize risk, but also to obtain a greater share of the market and charge higher monopolistic rates (North 138-139).

In *Growth and Welfare in the American Past*, Douglass North argues that farmers did not necessarily suffer from a decline in purchasing power, high monopolistic transportation costs, and usurious mortgage rates. North claims that evidence on farmers' declining purchasing power understates their improving terms of trade position during the late 19<sup>th</sup> century. North also



finds that railroad rates were falling rapidly from 1865 to 1900; so, farmers did not necessarily experience high monopolistic rates, but rather, benefitted from favorable transport costs. Lastly, North argues that farmers' mortgages were short-lived (around three to four years), and so, no significant changes in price would have occurred over these periods to negatively affect farmers' incomes and their ability to repay mortgages sufficiently (North 139, 141). Instead of attributing the farmers' decline in purchasing power, high transportation costs, and unfavorable lending rates to explain agrarian unrest, North believes the protests arose from international competition and the farmer's deteriorating economic status in America (North 142, 145).

North's terms of trade argument is not very convincing because the measure does not accurately capture real incomes of domestic Midwestern farmers in the late 19<sup>th</sup> century, and his terms of trade chart (shown in his book *Growth and Welfare in the American Past*) fluctuates widely and shows a weak (if any) increase in export prices over imports from 1865 to 1900 (see appendix A in this paper). In *Trends in Agricultural Terms of Exchange*, J.N. Lewis argues that using terms of trade to gauge farmers' purchasing power is an incomplete portrayal of agricultural prosperity, and therefore, the measure cannot be used as a springboard for general conclusions (Lewis 58). In addition, North's terms of trade measure compares the farmers' well-being to that of other nations. The protests, however, were domestically-driven and should not be analyzed from a broader international perspective. North's

broadened analysis of the Midwestern protests, in other words, ignores important domestic factors that strongly influenced the farmers' real incomes.

North's short-lived mortgage argument assumes that price levels would not change significantly enough to negatively affect a farmer's ability to repay his or her mortgage. This argument, however, disregards the fact that a farmer's income was subject to a multitude of factors and was not solely based on his or her output's selling price. These factors include: unpredictable climate conditions, uncontrollable and uncertain fixed costs (which were dependent on middlemen monopolists) (Mayhew 469) (McGuire 837), and fluctuating transport costs (also dependent on monopolists, who largely controlled the railroads in the Midwest) (Lewis 690). The short-term income of the farmer was thus subject to significant volatility, which likely hindered his or her ability to pay a consistent mortgage rate. Lastly, North's international competition argument does not consider how Midwestern farmers received information from abroad on foreign agricultural markets and competition. Domestic farmers were likely highly unaware of international market movements due to poor communication and technology systems at the time.

The opening of new western land (and its subsequent oversupply of crops) and the farmer's deteriorating economic status are two convincing aspects of North's analysis (North 143-145). North does not mention an increase in western land as a separate argument, but he uses it in tandem with

a lack of money supply to explain the farmer's deteriorating economic status in America. During the 19<sup>th</sup> century, the productive focus of the nation gradually shifted to industry and manufacturing; so, the farmer was losing his spotlight. The macroeconomic and developmental arguments implied by North, in other words, are the most convincing aspects in understanding the causes of late 19<sup>th</sup> century agrarian unrest.

Anne Mayhew expands on North's deteriorating status argument by claiming that the protests arose from the commercialization of agriculture (Mayhew 469). She states "the farmers were objecting the *increasing importance of prices*; they were protesting a system in which they had to pay for transport and money rather than the specific *prices* of transport and money" (Mayhew 469). Farmers were, in other words, convinced by middlemen monopolists to constantly purchase technologically superior goods in order to produce a greater amount of output and keep up with competition. Farmers likely felt manipulated by these middlemen and thought protesting was an effective means of voicing their complaints.

Mayhew's argument is convincing to the extent that it attributes America's industrial developments to the commercialization of agriculture, which subsequently became a nuisance to the farmer. The time frame in which Mayhew conveys the commercialization process, however, seems sudden, almost surprising. Mayhew states:

[the] descriptions of farming in the Middle West are not descriptions of farmers who depended on markets for disposal of their produce; rather, they are descriptions of farmers who were quick to take advantage of opportunities to market goods as they arose, as they did after 1870. (Mayhew 471)

This quote suggests that the commercialization process embodied a rapid transition to the market after 1870, and farmers were not previously aware of its development. Mayhew believes the opening of transportation facilities in the Midwest was the main reason behind the rapid commercialization of agriculture. (Mayhew 469-470).

Despite Mayhew's claims, evidence indicates that the commercial process likely started prior to the Civil War, and farmers were well aware of its development prior to 1870. In *Did the Civil War Retard Industrialization?*, Thomas Cochran reveals that America's value added by manufacture (a measure of industrial growth) rose by 157 percent from 1839 to 1849, 76 percent from 1849 to 1859, and 82 percent from 1869 to 1879 (Cochran 199-200). The US economy was thus experiencing a surge in industrial growth prior to 1870. Cochran also finds that a total of 11,627 miles of new railroad track was laid from 1851 to 1855, 8,721 miles of track from 1861 to 1865, and 16,174 miles of track from 1866 to 1870 (Cochran 201). Both of these findings suggest that the commercialization of agriculture did not necessarily embody a "rapid" transition to the market after 1870 as argued by Mayhew,

but rather, grew impressively prior to 1870. Midwestern farmers were likely well aware of America's industrial potential before 1870 and hoped their agricultural production would complement the nation's expanding industrial sector once it reached the western frontier.

Farmers also did not completely oppose commercial development in the Midwest. In *The Agrarian Image of the Large Corporation, 1879-1920*, Louis Galambos finds that agrarian newspapers and journals did express a large amount of discontent toward corporations, but also conveyed a noticeable amount of favorable elements (Galambos 353). Galambos furthermore finds that around one-third of agrarian journals in the Midwest had at least one favorable reference to big business from 1879 to 1900, and the attitudes were "more subtle, varied, and contradictory than historians have led us to believe" (Galambos 354). Galambos' study shows that agrarian attitudes toward big business did not embody a complete opposition, but rather, showed some support for these entities. Galambos' study also suggests that the agrarian protests were much more complex and diversified than historians have claimed. The many regions, political parties, and social and economic classes that comprised the movement likely had differing views on large firms and the commercialization process in general. One can therefore not develop a sufficient conclusion in explaining agrarian unrest without considering the diversity of groups and opinions that comprised the

movement and played a large role in characterizing the degree and means of protest.

As opposed to North and Mayhew's qualitative analyses, Robert McGuire evaluates the agrarian movement from a quantitative perspective, hypothesizing that farmers' price, crop yield, and income fluctuations determined the degree of protest in the Midwest. Through empirical testing, McGuire confirms his hypothesis—he finds that areas with higher crop yield, price, and income volatilities are associated with a higher degree of protest (McGuire 848). McGuire also divides the agrarian movement by state and party (i.e., the Agrarians, Greenbacks, Alliances, and Populists), which helps advance one's understanding of the geographic and political determinants behind the degree of unrest.

Bradley Lewis critiques and expands on McGuire's analysis by claiming that the protests did not arise from an accumulation of local factors, but rather, arose from fluctuating railroad costs (Lewis 690). Lewis posits that railroad costs were more or less linearly related to the distance crops were shipped to the East Coast; so, the longer the distance to a consumer market, the higher the transport cost imposed on the farmer. Through empirical testing, Lewis finds that changes in farmers' mean prices and incomes were strongly correlated with the distance to New York City. This finding leads Lewis to conclude that states farther away from New York were strongly related to a higher degree of protest (Lewis 695).

Of these two quantitatively-focused papers, McGuire's analysis is more convincing because he incorporates a wider variety of economic, political, and geographic variables. Lewis's findings may initially seem suggestive in concluding that differences in railroad costs was the main reason for agrarian unrest, but Lewis likely had to form several simplifying assumptions (more so than McGuire due to his narrow hypothesis) in order to come to this conclusion. This effect ultimately limits the scope of his analysis and may encourage biased results. By not considering a wider variety of economic, geographic, and political variables like McGuire, Lewis disregards broader, qualitative developments that played a crucial role in explaining agrarian unrest in the Midwest. Lewis's railroad assumption (that railroads were the main source of agricultural transportation) could also lead to distorted results, since steamships, canals, roads, and wagons may have played a noticeable role in shipping agricultural products during the late 19<sup>th</sup> century.

One should also realize that correlation does not imply causation. Many economists, who use empirical-based methods (like McGuire and Lewis), tend to rely heavily on quantifiable outcomes to justify their conclusion(s). But as shown above, empirical analyses can be subject to a number of assumptions that could limit the legitimacy of a study's results. Empirical findings therefore cannot be deemed entirely conclusive. More importantly, empirical tests do not incorporate qualitative phenomena—many

social, historical, and political forces played a strong role in influencing the agrarian protest movement, and quantitative studies simply cannot capture these elements.

Given the evidence and analysis presented, I think the Midwestern protests stemmed from a gradual, multifaceted development of economic, historical, and political factors. A combination of the points presented above and from several outside sources constitute the majority of economic factors behind the movement, but these influences may have also entailed a more complex interaction of micro and macroeconomic forces than what historians have led us to believe. Douglass North's argument on the expansion of the western frontier (leading to an oversupply of crops), for example, helps explain why crop prices were low, but macroeconomic data from the 1870s and 1880s also reveals that US prices and money velocity fell; so, farmers possibly experienced a dual loss on their incomes (see appendix B in this paper for macroeconomic data) (Rockoff 741, 743). Data on declining grain prices in the US further supports this statement—according to *Historical Statistics of the United States*, oat, corn, barley, and wheat prices fell by -1.79 percent, -2.09 percent, -2.40 percent, and -1.71 percent on average respectively from 1870 to 1900 (see appendix C in this paper) (Olmstead & Rhode 2017). Although these figures are an aggregate measure of US commodity prices, they were grown most abundantly in the Midwest and can



therefore be argued as a proximate reflection of Midwestern agricultural price levels.

Historical and political developments also played vital roles in invigorating agrarian unrest. Farmers have historically been the dominant force and voice in American politics and for most of American history (Rothstein 164). During the 1870s, however, the tides were turning in favor of industrialists. Douglass North describes this transition with the quote: “Throughout all of our earlier history, his [the farmer] had been the dominant voice in politics and in an essentially rural society” and “he [the farmer] was [now] being dispossessed by the growing industrial might of America and its rapid urbanization” (North 145). In a way, this quote supports North and Mayhew’s argument on the farmer’s deteriorating economic status. I, however, think the quote alludes to the farmers’ diminishing relationship with the federal government. As the 19<sup>th</sup> century progressed, farmers likely had a harder time obtaining regulatory protection against monopolies since the productive focus of the nation was shifting to industry. Farmers therefore felt the need to express their concerns on a national level by protesting.

The Grangers, Greenbacks, National Farmers’ Alliance (also known as the Northern Alliance), and the Populists comprised the agrarian movement. As opposed to what many historians have claimed, these groups existed simultaneously and differed in their political demands during the late 19<sup>th</sup> century. Robert McGuire assumes in his analysis that the Grangers,

Greenbacks, Northern Alliance, and Populists existed sequentially from 1867 to 1897 (McGuire 842). Evidence from *The American Economy: A Historical Encyclopedia*, however, reveals that the Grangers, Greenbacks, and Northern Alliance coexisted from 1874 to 1888, while the Populists, Northern Alliance, and Grangers coexisted from 1892 to 1908 (Ossian 2011) (Olson & Mendoza 2015) (Foner & Garraty 2014) (Wynne 2011).

There was also contrast between the parties' political demands. While the Grangers desired upper-limit price regulation on railroads and large corporations (Walton & Rockoff 273), the Greenbacks sought inflationary changes and cheap money after the Panic of 1873 (Olson & Mendoza 2015). The Northern Alliance demanded government control of transportation and communication, as well as reforms of currency and land ownership (Foner & Garraty 2014), and the Populists protested monopoly control and sought government ownership of banks, railroads, and communication (Walton & Rockoff 275). As the evidence suggests, a wide variety of political views comprised the agrarian movement. While some of the demands are similar, others are unique to the party. One can therefore not form a resolute conclusion in explaining agrarian unrest in the Midwest without considering the diverse array of political groups that comprised the movement.

The majority of economic historians believe the agrarian protest movement arose from a decline in farmers' purchasing power, high monopolistic transport costs, and usurious mortgage rates. Douglass North

refutes these points and argues that the protests resulted from international competition and the farmers' deteriorating economic status. Anne Mayhew expands on North's second argument by claiming that America's rapid industrialization after 1870 led to the commercialization of agriculture, which intervened with farmers' day-to-day operations. As opposed to North and Mayhew, Robert McGuire and Bradley Lewis take a quantitative, empirical stance on the matter. McGuire organizes the protests geographically and politically, and finds that areas with higher crop yield, price, and income volatilities are associated with a higher degree of protest. Lewis does not support McGuire's geographic and political assumptions, but instead argues that differences in railroad transport costs were the main reason behind farmers' fluctuating incomes, which consequently led to differing levels of protest in various locations around the Midwest.

While I support North and Mayhew's analyses to some degree, I argue that farmers were not aware of international competition occurring at the time, and the commercialization of agriculture entailed a much slower, gradual process that preceded 1870. I support McGuire's consideration of geographic and political factors in analyzing the protests, but disagree with Lewis's narrowed assumption that railroad costs were the main reason for agrarian unrest. As opposed to North, Mayhew, McGuire, and Lewis, I do not think the protests stemmed from a specific cause or source, but rather,

entailed a gradual, multifaceted evolution of economic, historical, and political factors.

Economic historians often feel the need to form definitive answers to these types of debates through a mix of empirical testing and critical thinking. These historians do not always consider the intricate economic, sociological, and political phenomena occurring gradually over time, however. By not incorporating a gradual, intricate method of analysis, scholars tend to ignore important evolutionary aspects of history that are critical to solving unanswered debates, like the late 19<sup>th</sup> century agrarian protests. Or perhaps, sufficient evidence from the agrarian movement is lacking, and historians are trying to answer the unanswerable. Nonetheless, the arguments presented in this paper help one reach a better understanding of the potential causes of agrarian unrest and ultimately shed light on why significant disagreement exists between economists and historians.

Appendix A

**CHART 21. AGRICULTURAL TERMS OF TRADE, 1865-1890. RATIO OF FARM PRICES TO ALL PRICES. 1910-1914 = 1.0**

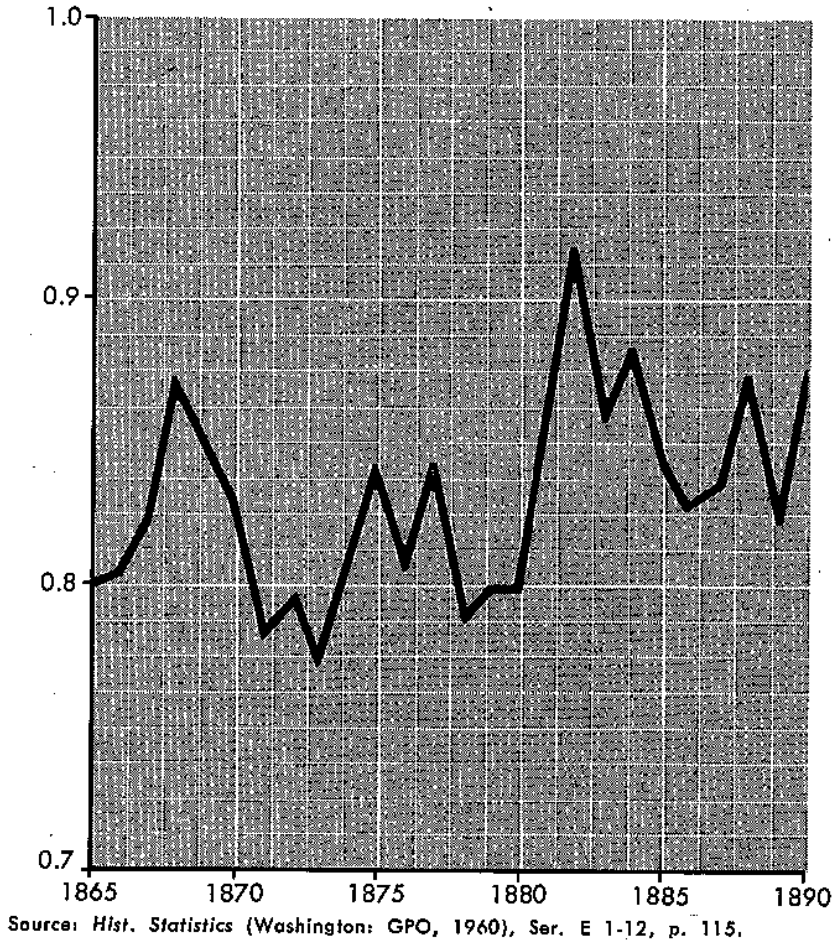


Fig. 1: Conveys agricultural terms of trade from 1865 to 1890. As the graph demonstrates, farmers' terms of trade increased negligibly during the period and was subject to significant price volatility. Douglass C. North, *Agricultural Terms of Trade, 1865-1890*, graphical chart. Source: *Historical Statistics* (Washington: GPO, 1960), Ser. E 1-12, p. 115. Available from: *Growth and Welfare in the American Past*. Englewood Cliffs, NJ, 1966. 138. Print.

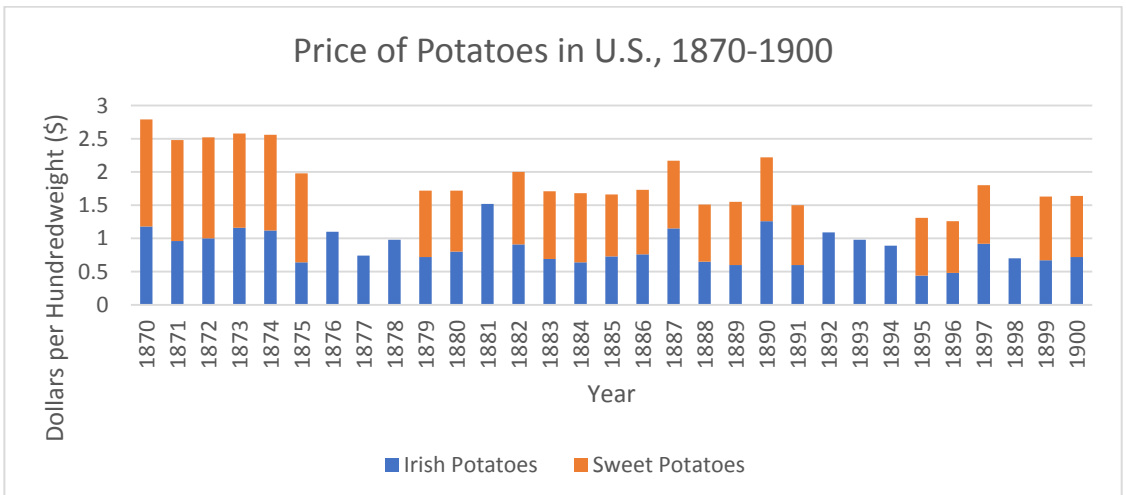
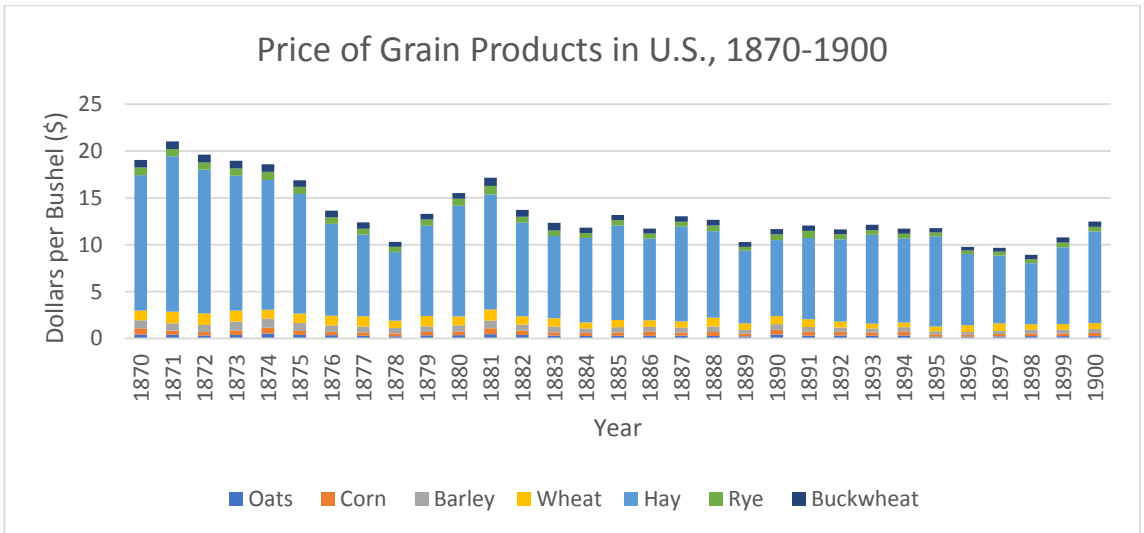
## Appendix B

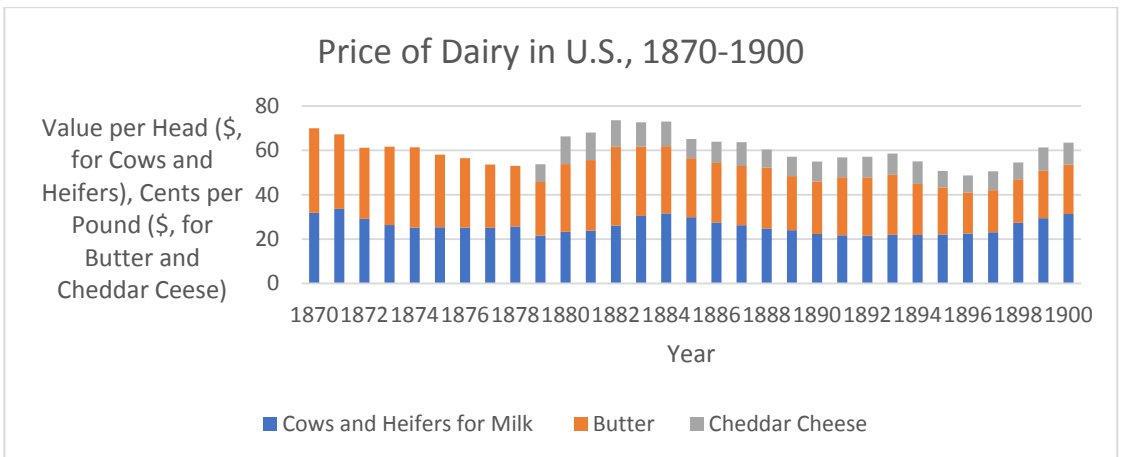
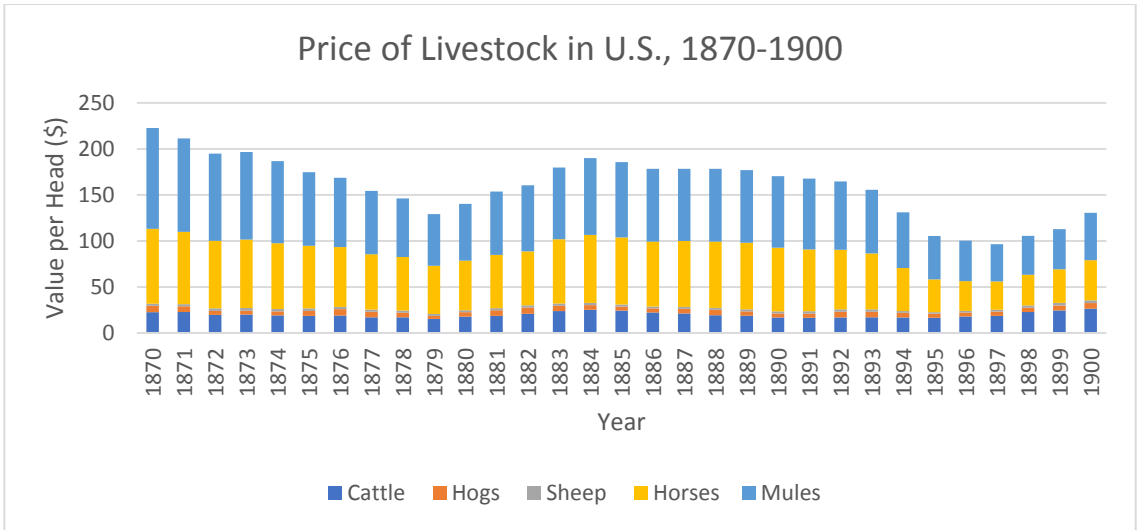
Change in Macroeconomic Variable (%)	1870s	1880s
$\Delta Y$	+5.0%	+2.7%
$\Delta M^S$	+2.6%	+7.7%
$\Delta P$	-3.3%	-0.1%
$\Delta V$	-0.9%	-5.1%

Fig. 2: Shows changes in nominal GDP ( $\Delta Y$ ), money supply ( $\Delta M^S$ ), aggregate price level ( $\Delta P$ ), and money velocity ( $\Delta V$ ) during the 1870s and 1880s. Hugh Rockoff, *The "Wizard of Oz" as a Monetary Allegory*, data table. Source: U.S. Bureau of the Census (1975). Available from: The University of Chicago Press (JSTOR). 1990. 741-743. Print.

Appendix C

Please view the following Excel file [here](#) to see agricultural price data of grain, potato, livestock, and dairy products in the U.S. from 1870 to 1900. The graphs below show the general price trends of these four agricultural groups, and can be viewed more easily under the “Graphs” tab in the attached Excel file. All data comes from *Historical Statistics of the United States Millennial Edition Online* in bibliography below.







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A faint, light-colored map of the United States is visible in the background, centered on the page. The map shows the outlines of the states and is rendered in a light beige or tan color, matching the overall theme of the cover.

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