Online Proceedings

Poster Session 2

Commons East, Easel 47

1:00 PM to 2:30 PM

Technology Effects on Labor Force Market

Grace Shi, Senior, Economics
Ju Eun (Esther) Ahn, Senior, Economics, Psychology
Ivana Kolinek, Senior, Economics
Mentor: Elaina Rose, Economics

Development of technology, including artificial intelligence, has been controversial due to the potential negative effects. Many believe it is an auspicious industry and that technology will eventually replace the work of the human labor force. In this research project, our team analyzed the effects of technology in the labor market on the labor force within the next few decades. To accomplish our goal, we developed a model that can interpret the correlations between various factors. Specifically, this research analyzed data, including the employment rate, unemployment rate, number of occupation categories, and involvement rate of technology from varied industries. In addition, the Bureau of Labor statistics database was primarily used to regress the model. We expected to see a decrease in low-skilled occupations, such as cashier, in a short run. These types of occupations will be replace by IoT or artificial intelligence. High-skilled occupations, such as lawyer and surgeons, will still be demanded and irreplaceable in a short run, but would eventually be displaced in the long run. A shift would occur from low to high skilled occupations, due to factors such as social demand, working efficiency, and wage polarization. The employment rate goes down during the short run since more jobs are replaced by artificial intelligences and robotics. However, in a long run, more occupations will be created which will recuperate the fall in employment rate occurred during the short run. This research is very crucial and necessary because of the rapid growth of technology and its immense impact on the human labor force market. This research could ultimately provide information for governments and policy makers regarding potential growth sectors in the economy due to technological changes. Also, future generation can be more aware of this technological change, so that they can choose majors with accurately reflecting future employment trends.

Session 2O

Economic Issues

Session Moderator: Michelle Turnovsky, Economics

MGH 389

3:30 PM to 5:15 PM

* Note: Titles in order of presentation.

Why Do Banks Discriminate? Heterogeneous Effects of Traditional Determinants on Minority vs. Non-Minority Business Loan Default Rate

Anni Hong, Senior, Mathematics, Economics
UW Honors Program
Mentor: Gregory Duncan, Economics/CORE AI

Despite the high growth rate of minority-owned business in the US, economics literature suggests that minority business owners have a harder time getting loans for their businesses compared to their white counterparts. If minority-owned businesses are doing well in the U.S., it is expected that loans to minority owners have high returns (or low defaults). It is paradoxical that banks would discriminate against minority loan applicants since it's against their economic interests. My research project hypothesizes that financial institutions' loan approval process is flawed for assuming that the predictors of loan defaults have the same effect on minorities and non-minorities. For example, credit score is often an important factor in predicting default, however, many minority immigrants haven't had a chance to build up their credits to the same degree as their white counterparts. In this case, a low credit score means a high probability of default for white business owners but does not predict a high default rate for non-white owners. To test the hypothesis, the research project examines the heterogeneity in the effects of common determinants of their loan repayment between minority vs. non-minority business owners through an econometric analysis of a dataset collected by the U.S Treasury Department on CDFIs(Community Development Financial Institution Fund). More specifically, my project tests if the differences in the coefficients of predictors for each group are significant. Evidence supporting the hypothesis suggests that banks are losing out on economics gains by overlooking certain factors on their applicants and actions should be taken to prevent further loss for minority business owners.

SESSION 2O

ECONOMIC ISSUES

Session Moderator: Michelle Turnovsky, Economics
MGH 389
3:30 PM to 5:15 PM

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Were the Conditions Attached to the IMF Loan to South Korea in 1997 Appropriate?

Yean Kim, Junior, Economics
UW Honors Program
Mentor: Levis Kochin, Economics
Mentor: Thor Dodson, Economics, UW Economics Department

In 1997, South Korea and many other Asian countries were hit with a large currency and financial crisis, with the IMF providing a $58 billion bailout program to South Korea involving large amounts of reforms and corporate restructuring involved, along with a very contractionary fiscal and monetary policy that intensified the crisis. The IMF loan had conditions of higher interest rates, higher taxes, and lower government spending, among others, on hopes that the contractionary policies will restore the foreign investors' faith in Korea. After the crisis, the conditions of the IMF loan have been subject to much criticism in both Korea and abroad. This raises a question as to whether the IMF's response and the conditions of the loan to Korea was appropriate for the situation. For this research, I am collecting information from many sources both from the US and in Korea, including books, journals, and newspapers. I am also acquiring various types of data as part of the research. Some of my findings are that the IMF's response for the crisis was inappropriate as the IMF's diagnosis of the situation was inappropriate. It is because South Korea's situation was different from the other countries of the Asian Financial Crisis as the crisis did not arise due to overvalued exchange rates and government debt. Additionally, part of the IMF's response in Korea can be said of as carrying over from past crises which involved the government accumulating large amounts of debt, as opposed to the Korean case, where the chaebol and the financial institutions lending to them accumulated large amounts of short-term debt and the government had almost no debt and was operating at a balanced budget. The uniqueness of the Korean crisis meant that the IMF should have reacted differently in imposing its conditions for the loan.

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Extending a Theoretical Framework for Superfund Site Remediation

Cameron Raber, Senior, Mathematics, Economics, Pacific Lutheran University
Mentor: Lynn Hunnicutt, Economics, Pacific Lutheran University
Mentor: Mark Reiman, Economics, Pacific Lutheran Universithy

The environmental and human health damage associated with industrial waste has been an undeniable concern since the late 20th century environmental disaster at Love Canal, which had devastating effects on birth defect and miscarriage rates. Since this event, the Environmental Protection Agency (EPA) has been dedicated to the remediation of toxic waste through the Superfund program. There are Superfund sites across the country, in locations as varied as urban Tacoma, Washington and rural Evansville, Wyoming. Which toxic site should enjoy the advantages of faster cleanup? A range of factors could influence the remediation rate at these sites, yet a striking difference in site characteristics presents itself; These two sites are home to very different population densities. Population density, an emblematic proxy variable, can be used as an effective tool to investigate different aspects of socioeconomic site characteristics. Scholarly models of optimal remediation, however, often focus exclusively on the financial costs and environmental damage of cleanup. This project investigates how Superfund site remediation would change if the EPA were to incorporate specific socioeconomic criteria in its decision to remediate toxic sites. Particularly, it explores various aspects of the Superfund program and focuses on and extends a particular theoretical model for temporal remediation. Population density enters the model through its effects on costs, although other consequences of population density will be investigated. The results of the extension indicate that a higher population density corresponds to a decrease in the optimal toxic waste cleanup rate.

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The Impact of the Take Charge Family Planning Initative on Educational Attainment for Hispanic Women in Washington State

Nadya Ekhteraee Sanaee, Senior, Economics
UW Honors Program
Mentor: Rachel Heath, Economics

Take Charge is a statewide family planning initiative that provides men and women in Washington State with free access to family planning services. As one of the most accessible family planning programs in the nation, Take Charge has expanded into school based clinics, allowing adolescents as young as thirteen to receive contraceptives without the knowledge of their parents. Success of family planning initiatives are typically measured by how much they reduce unintended pregnancies among their low income or minority populations, but the effect of these programs on economic indicators such as income and educational attainment are generally less well explored. Thus, the purpose of this research project is to determine the impact of having access to Take Charge on college completion for Hispanic women in Washington State. To address this question, individual level data from the Minnesota Population Center Current Population Survey were used to conduct a variety of difference-in-difference and triple difference tests to measure the effect of having access to Take Charge on college completion. The results depict that having access to this program starting at age 13 significantly increased the likelihood of completing college by 14-18% for Hispanic women. These findings imply that Take Charge can be used as a model program for other states that hope to reduce their number of unintended pregnancies and increase college completion among their low income and minority populations.

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Newly Implemented Policy: Two-Child Policy — A Case Study of Taiwan

Zhiyi (Elaine) Yang, Senior, Economics, Mathematics
UW Honors Program
Mentor: Melissa Knox, Economics

The relationship between fertility and economic development can be modeled in many different ways. To microeconomists, fertility may determine the "quality" of children in one family, where quality is typically interpreted as a child's level of education. These models of child quality are based on the classical quantity-quality tradeoff model by Becker, in which parents choose to substitute child quality for child quantity under some circumstances. The focus of this paper is to detect whether the quantity-quality tradeoff exists under the two-child policy in China, implemented in 2015. Since 2015, Chinese families have been permitted to have two children, and this change in the quantity of children in a family may affect child quality as well. However, the two-child policy was implemented only three years ago, so data is lacking. Thus, I chose Taiwan as my case study. I use data from Taiwan to find some the effect of fertility and apply those results to circumstances in China. By using linear regression, I find that the results from Taiwan are consistent with the classical model. Once the quantity-quality tradeoff under two-child policy is clear, scholars can further research on the short-term and long-term influence of two-child policy in China.

POSTER SESSION 3

Commons East, Easel 45
2:30 PM to 4:00 PM

Financing of Noncommunicable Diseases: Socioeconomic and Health Indicators of Development Assistance for an Emerging Global Health Crisis

Caroline Kasman, Senior, Economics, International Studies
UW Honors Program
Mentor: Melissa Knox, Economics

Noncommunicable diseases (NCDs) are responsible for the majority of all global deaths. They reduce quality of life on a mass scale and threatening the United Nation's 2030 Agenda for Sustainable Development while creating massive financial burden in the Global South and developed countries alike. However, in 2017, NCDs received only 2% of total development assistance for health (DAH) in 2017 despite causing 67% of global deaths. This is a signficant lack of alignment between disease burden and funding. Researchers state that donor groups divert DAH to other causes because they are unaware of the impact of NCDs in low and middle income countries. In addition, curbing NCDs on a mass scale requires highly complex responses in comparison to the more cost-effective and evidence-based approaches for many infectious diseases. However, these claims are based on primarily anecdotal studies and there is limited quantitative research on how donor groups allocate foreign aid for NCDs. This report aims to understand how donor groups prioritize economic, political, social, and epidemiological determinants when deciding the level of DAH to provide to countries for NCDs. The master dataset is provided by RTI International and consists of grants for NCDs from 2010 to 2015. It is merged with demographic, economic, geographic, and epidemiological data extracted from publicly available sources. I model correlations between these factors and DAH received using a multiple linear regression. As foundations and NGOs provide the majority of global funding for NCDs, I concentrate on this donor group. I hypothesize that NGOs and foundations concentrate on health indicators and level of corruption when allocating aid for NCDs versus economic indicators, such as level of trade openness. Further research of donor behavior and development assistance for health will contribute to greater transparency in funding processes to better address the emerging NCD pandemic.

POSTER SESSION 4

Commons East, Easel 84

4:00 PM to 6:00 PM

Happiness, Money, and Economic Inequality

Yi-Tan Hsu, Sophomore, Management Science , Economics, Shoreline Community College
Mentor: Tim Payne, Economics, Shoreline Community College

Economics connects to our daily lives. It is not only about the money in the market but also people in the society. Wealth and income inequality is one of the examples. In some countries, such as in the United States, differing levels of income lead to varied benefits. This phenomenon impacts not only the quality of people's lives but also their happiness. However, having a large amount of money is not the most important reason to increase their happiness. In this literature review, economic principles can help to understand the relationship between happiness and money. Examining Jeremy Bentham's idea of the greatest happiness of the greatest number, the paper explores the impact of utilitarianism. There is also recent economic research related to money and happiness that is considered. One significant finding is that people's happiness can be increased by sharing their excess income and wealth. The study of happiness and money is complex, and there are many factors not included in this paper. But, the idea above is still important to be considered and can be one way to improve economic inequality. The solutions to the problems of economic inequality may be found in this research.