Global Inequality of Hourly Income, 1980-2020

Anique Ahmed

September 2023

Global Inequality of Hourly Income, 1980-2020

Anique Ahmed

Paris School of Economics

September 3, 2021

Acknowledgements

Abstract

The study looks into the global inequality of hourly national income (HNI). There is considerable variation in the HNI trends as well as the trends for the average work hours across regions. Across income groups, most regions except for Asia have diverging trends for the HNI between the top 10% and the middle 40%. Global inequality of hourly income is likely much higher than the inequality of annual income owing to the fact that individuals in poorer countries tend to work longer hours. Over all, as of 2017, the study finds a difference of +2.6 percentage points between the share of top 10% hourly income earners and the 10% annual income earners. For the middle 40% and the bottom 50% the differences are estimated to be around -1.63 and -1 percentage points respectively.

Section 1

Introduction

Inequality has been a major point of discussion, and perhaps contention, throughout history. In recent years however, we have seen a phenomenal rise in this discussion, particularly with regards to the income and wealth inequality. This is partly due to the enhanced data collection capacity over time, that has allowed for more concrete, evidence-based discourses, but this topic is also extremely relevant in the context of sustainability. Indeed it is one of the core elements of the UN's *Sustainable Development Goals* which were unanimously agreed upon by all member states - a feat remarkable in and of itself (UN, 2015).
In 2002, *Bourguinon and Morrison* presented a detailed analysis of the global inequality between 1980 and 1992 (Bourguinon and Morrison, 2002). The authors had analyzed the trends for both across and within country inequality. *Capital in the Twenty-first Century* looks deeper into the issue, indicating, through historical evidence, how inequality still remains persistent and pervasive (Piketty, 2013).
A discourse over inequality of hourly income adds a vital dimension to the discussion of inequality overall. My goal in this study is to explore and examine the distribution for the Hourly National Income around the globe. In this study, I will compare variations in hourly income across countries and regions. I will also be looking into the distributions within countries and regions, across income groups. The scope of this study encompasses 64 countries in total.
This work takes insight and great inspiration from the earlier work of the *World Inequality Lab* in particular from the *World Inequality Report 2018* in its approach and methodology (Alvaredo et al, 2015). Following the theme of the institution, I conduct my analysis on the hourly national income by income groups; looking into the top 10%, the middle 40 % and the bottom 50 %. All the data sets I use in the study are country-year level and I will be covering the time period between 1950 to 2017.
For the raw data on the average work hours, I am using the *Penn World Tables version 10* (Feentra et al, 2015). This is an extensive data set that covers data on work input, work output and income for over 180 countries, covering the time periods of 1950 to 2019. For this study I have extracted specifically the country-year level data on *avh* which is a measure of average annual work hours by the individuals engaged. Individuals engaged here refers to the subset of the country level population that contributed to the country GDP in the given year. After carefully studying the data on all the countries covered in the database, I have shortlisted the country pool to 64 countries based on relevance and data availability.
Secondly, I am using data on Gross National Income and Income Inequality from the World Inequality Lab Database. The data points are extracted to match the exact county and year entries from the Penn World Tables. All countries except for the United States have a 1 to 1 match. In this case, national income data between 1950 to 1960 is missing. The figure 1 illustrates the total number of countries covered with time. This number strictly increasing most likely owing to increased data accumulation capacities over time. In the study no country added at one point in time had to be removed in a future year due to lack of data availability. Hence, no forward extrapolation was required. However, in some cases, gaps in data in previous years were covered by backwards extrapolation.
This work is also follows and is heavily reliant on the WIL Distributional National Accounts Guidelines (Blanchet et al., 2020). The methodology illustrated in the guidelines synthesizes the income distributions from all available data sources. Recent series include trends for Eastern Europe, Russia, Latin America, Africa as well as India and China. Many of these new data series will be utilized in this study. [1]

---

[1]See Alvaredo, Assouad and Piketty (2019); Alvaredo, Cogneau and Piketty (2021); Blanchet, Chancel and Gethin (2019); Chancel, Cogneau, Gethin and Myczkowski (2019); Chancel and Piketty (2019); De Rosa, Flores and Morgan (2020); Morgan and Neef (2019); Moshrif (2020); Novokmet, Piketty and Zucman (2018); Piketty, Yang and Zucman (2019); Robillard (2020).
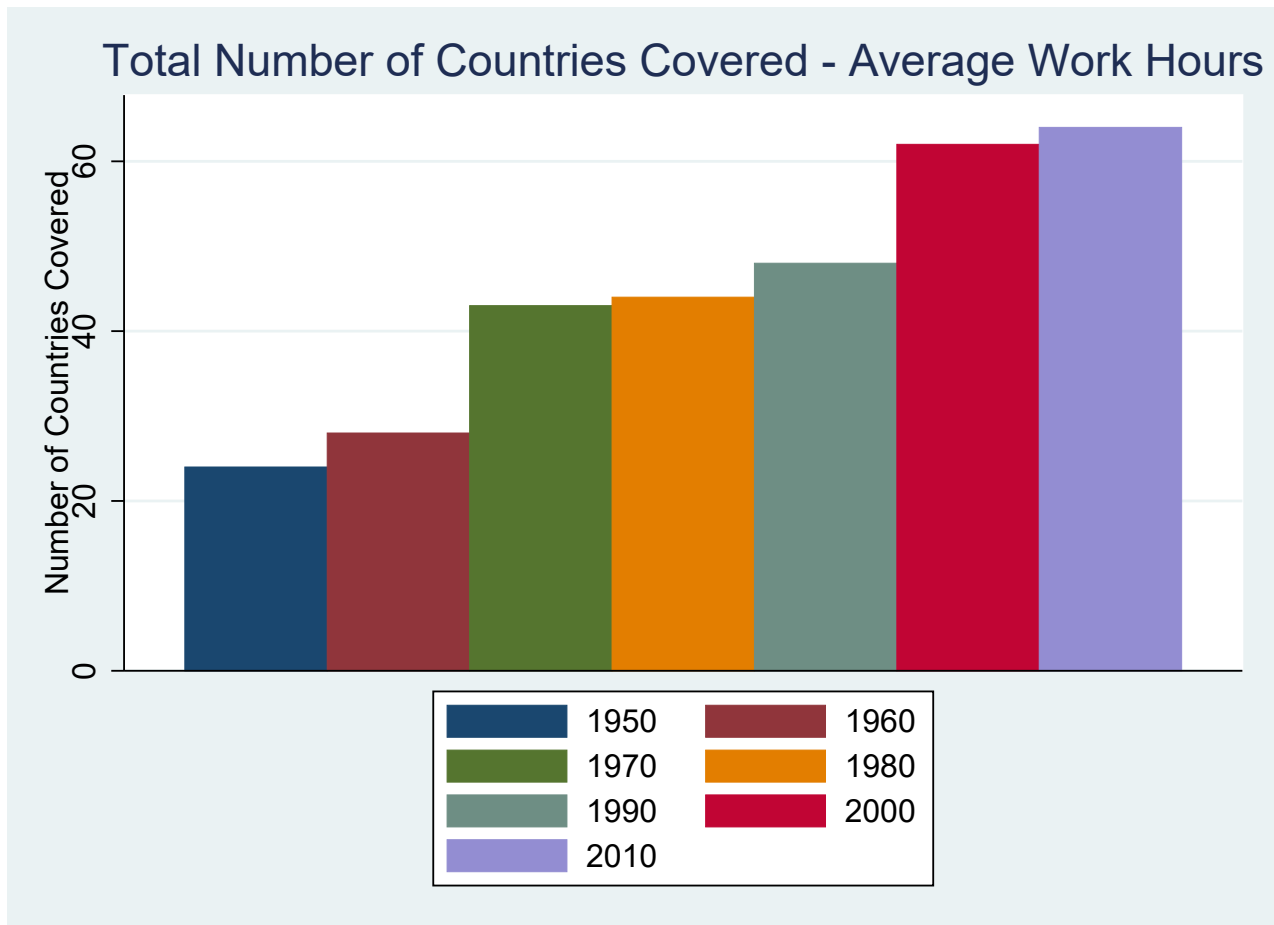
Figure 1: Total Number of Countries Covered

Complete List of Countries Covered

1. Argentina
2. Australia
3. Austria
4. Belgium
5. Bangladesh
6. Bulgaria
7. Brazil
8. Canada
9. Switzerland
10. Chile
11. China
12. Colombia
13. Costa Rica

14. Cyprus
15. Czech Republic
16. Germany
17. Denmark
18. Ecuador
19. Spain
20. Estonia
21. Finland
22. France
23. United Kingdom
24. Greece
25. Croatia
26. Hungary

27. Indonesia
28. India
29. Ireland
30. Iceland
31. Israel
32. Italy
33. Japan
34. Cambodia
35. Republic of Korea
36. Sri Lanka
37. Lithuania
38. Luxembourg
39. Latvia

Figure 2: Percentage Covered in terms of Global Income

40. Mexico

41. Malta

42. Myanmar

43. Malaysia

44. Nigeria

45. Netherlands

46. Norway

47. New Zealand

48. Pakistan

49. Peru

50. Philippines

51. Poland

52. Portugal

53. Romania

54. Russian Federation

55. Singapore

56. Slovakia

57. Slovenia

58. Sweden

59. Thailand

60. Turkey

61. Uruguay

62. United States

63. Viet Nam

64. South Africa

This is an extensive list. The set of countries covered includes almost all G20 countries, with the only exception being Saudi Arabia. It includes all major countries in the developed world and all the major economies among the developing countries. Over all, the data set covered around over 80% of the global economy measured in terms of national income and over 75% of the global population. Figures 2 and 3 illustrate these metrics across time.
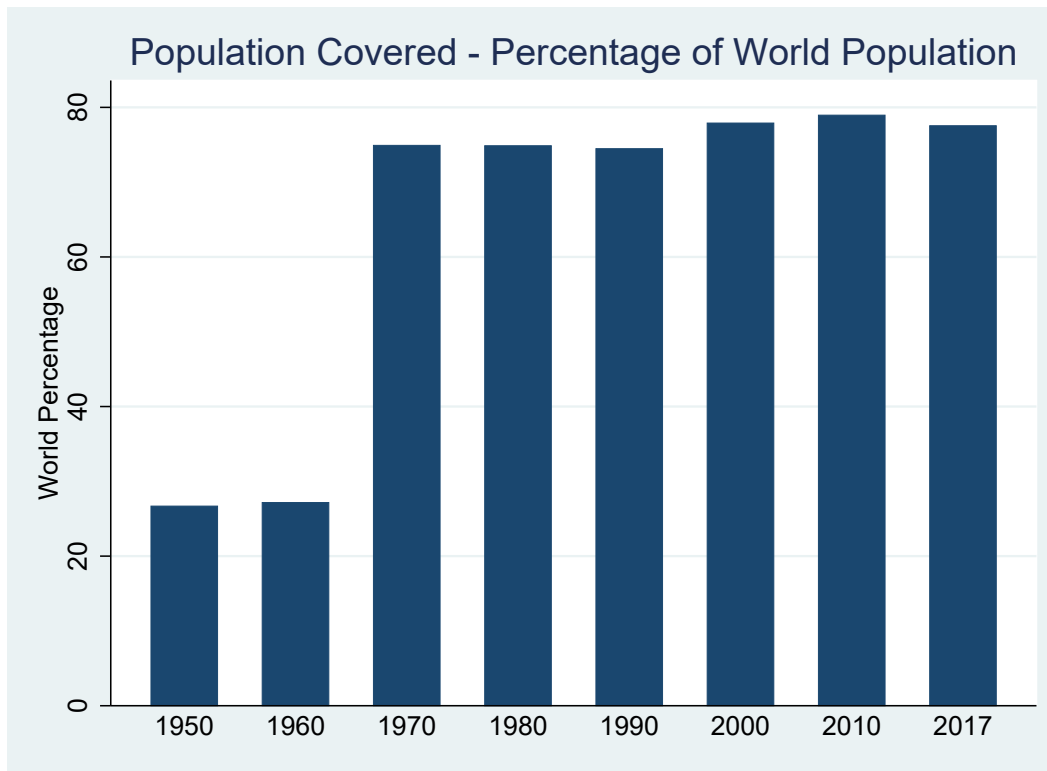
Figure 3: Percentage Covered in terms of Global Population

It is however important to highlight that there still exist strong data gaps specially for countries in Africa. This in part also explains the slight gap in total world population and income covered. For future studies, we could look for a separate data to cover some of these gaps. However, at the current moment, the World Penn Tables is the most extensive data set available on the variable of interest.

The analysis of this study covers trends across time for the hourly national income for all 64 countries listed. I define hourly national income as gross annual national income (GNI) over total annual hours worked by individuals engaged.

I will be looking across country averages and then proceed with HNI trends by income group for each country. Finally, I will be looking into the growth in Hourly National Income for each country from 1980 to 2017.

Regions

Regional averages were conducted for each category using a subset of countries within the region. The countries were chosen for each subset based on relevance and data coverage. Data on hourly income share at the regional levels was compiled using the World Inequality Lab interpolation toolkit. Here is the list of the macro regions covered:

1. World Average
2. G 20
3. Europe
4. Asia
5. North America
6. Latin America
7. Oceania
8. Scandinavia

Global Averages

For the global averages, a priority was given to incorporate the maximum amount of countries. However, due to data limitations and in order to reduce the need for extrapolations, not all countries in the pool were included for the average. A close study of the data revealed year 1970 as a pivotal year where there was a spike in the number of countries included in the data. This includes many economically prominent countries

and/or densely population countries like India, China, Pakistan and Bangladesh among others.

Hence for the global average, I include all countries present in the dataset in year 1970. No country had a break in the data entries once included. The gaps in the global average pre-1970 were completed assuming constant work hours.

List of countries in the Global Averages

1. Argentina
2. Australia
3. Austria
4. Bangladesh
5. Belgium
6. Brazil
7. Canada
8. Chile
9. China
10. Colombia
11. Denmark
12. Finland
13. France
14. Germany
15. Greece
16. Iceland
17. India
18. Indonesia
19. Ireland
20. Italy
21. Japan
22. Luxembourg
23. Malaysia
24. Mexico
25. Myanmar
26. Netherlands
27. New Zealand
28. Norway
29. Pakistan
30. Peru
31. Philippines
32. Portugal
33. Republic of Korea
34. Singapore
35. Spain
36. Sri Lanka
37. Sweden
38. Switzerland
39. Thailand
40. Turkey
41. United Kingdom
42. United States
43. Viet Nam

List of countries in the averages for the G20

1. Argentina
2. Australia
3. Brazil
4. Canada
5. China
6. France
7. Germany
8. India
9. Indonesia
10. Italy
11. Japan
12. Mexico
13. Republic of Korea
14. Russian Federation
15. South Africa
16. Turkey
17. United Kingdom
18. United States

List of countries in the averages for Europe

1. Austria
2. Belgium
3. Bulgaria
4. Croatia
5. Cyprus
6. Czech Republic
7. Denmark
8. Estonia
9. Finland

10. France	18. Lithuania	26. Slovakia
11. Germany	19. Luxembourg	27. Slovenia
12. Greece	20. Malta	
13. Hungary	21. Netherlands	28. Spain
14. Iceland	22. Norway	29. Sweden
15. Ireland	23. Poland	
16. Italy	24. Portugal	30. Switzerland
17. Latvia	25. Romania	31. United Kingdom

List of countries in the averages for Asia

1. Bangladesh	6. Israel	11. Philippines
2. Cambodia	7. Japan	12. Singapore
3. China	8. Malaysia	13. Sri Lanka
4. India	9. Myanmar	14. Thailand
5. Indonesia	10. Pakistan	15. Turkey

List of countries in the averages for North America

1. United States
2. Canada

List of countries in the averages for Latin America

1. Argentina	4. Colombia	7. Mexico
2. Brazil	5. Costa Rica	8. Peru
3. Chile	6. Ecuador	9. Uruguay

List of countries in the averages for Oceania

1. Australia
2. New Zealand

List of countries in the averages for Scandinavia

| 1. Denmark | 3. Iceland | 5. Sweden |
| 2. Finland | 4. Norway | |

The rest of the study is divided in 5 section. will proceed in the following manner. In section 2, I comment on the trends for the average work hours at the country level and at the regional level. In section 3, I will then proceed with an in-depth analysis of the trends for the hourly national income within countries and across regions. In section 4, I will look into the trends for the hourly national income based on income groups for the world and for each region and in section 5 I compare the global distribution of the hourly income and the distribution of the annual income. Finally, I provide my concluding thoughts in section 6. The cases listed in the study are selected in a manner to best portray the main takeaway of the findings.

Section 2

Global Trends for Average Work Hours

The raw country level trends for average working hours were directly extracted from the World Penn Tables, however, given the context of the study it would be worth investigating working patterns across the globe. In this section, I cover mainly the regional trends, with a brief discourse over a few relevant country-level trends. Overall, there is steady decrease in working hours, and hence possibly improved working conditions, for most regions. It is worth reiterating that the regional average for Africa here and for consequent metrics is not taken into account in the analysis due to data gaps. In general, the only stand out here is Asia - being the only region in the world to record a rise in working hours across time. Europe is the best performer on this metric, recording the lowest average work hours in the world in 2017 - a decrease of 29% since 1950.
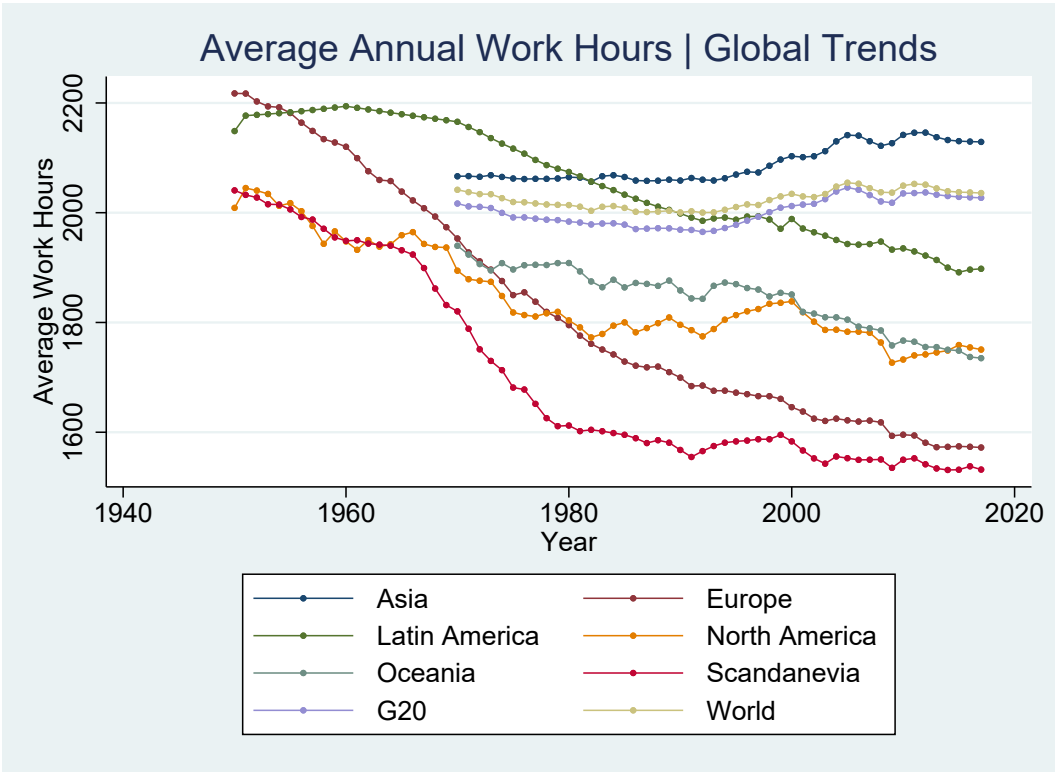
Figure 4: Global Trends for Average Annual Working Hours

As figure 4 illustrates, the average number of hours worked has steady decreased for all regions except Asia, with a sizable variation still between regions.

In Asia, the average work hours moved from approximately 2066.4 in 1970 to approximately 2129.0 in 2017. This understandably also has a strong impact on the global average as well owing to the global population share of the region. Consequently, at a global scale we also see a rise in the working hours despite relatively

good performances for almost every other region in the world. The composite trend for the G20 countries is also relatively identical to the global average.
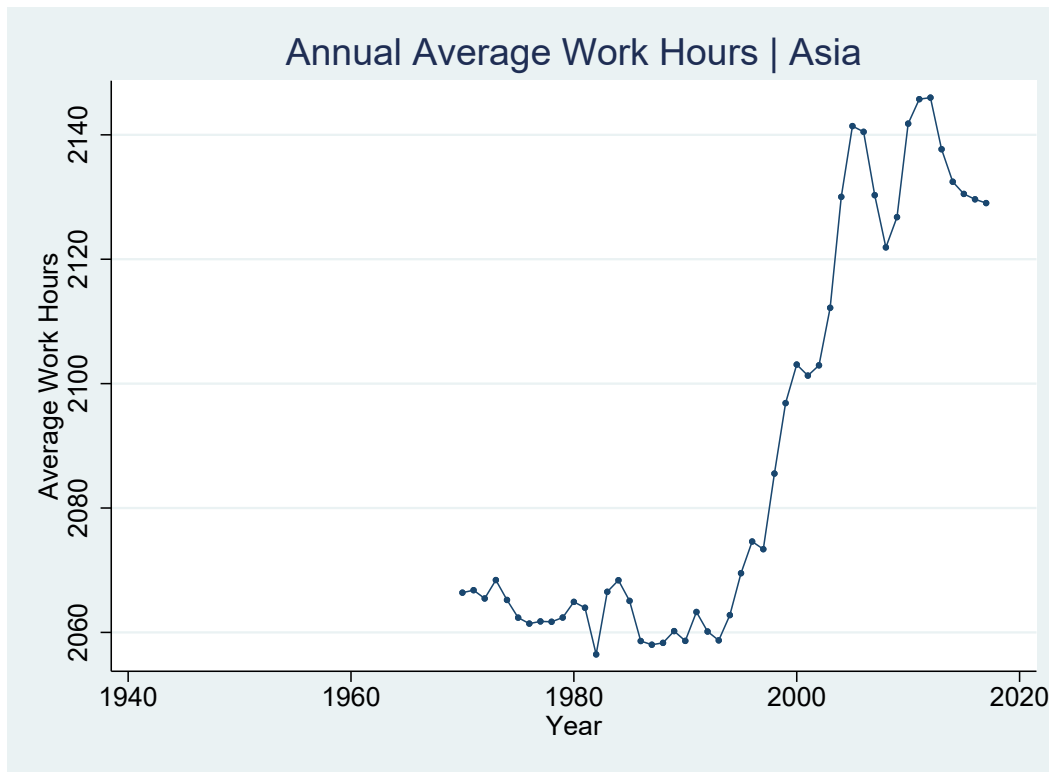
Figure 5: Average Working Hours in Asia

A closer look at the country level trends for Asia reveals that the pattern here is not surprising. Several Asian countries including China, India, Malaysia, Bangladesh, Cambodia, Myanmar, Pakistan, Thailand, The Republic of Korea and Singapore among others record working hours significantly higher than the global average across time. For China and India, the two most populous countries, the spike in working hours is consistent with the economic liberalization policies and economic growth in both countries. In many ways, despite similar trends in other countries in the region, it can be said that these two countries are the major drivers for the regional trend. Furthermore, in the case of China and India, we continue to see an upwards trend in working hours even in the recent decade.

In conclusion, it can be stated that unlike in other regions, the economic boom does not seem to follow a significant reduction in working hours in Asia. It would be important to consider the implications of this in terms of the overall well-fair in the region for future research.

In Europe (figure 7), most countries show a sizable decrease in working hours across time which is consistent with the improvement in working conditions, education, technology and general well-being in the region. There is still notable variation among countries. Contrary to Asia, high income countries in Europe and importantly, countries with high output, tend to perform quite well. Figure 8 illustrates the average working hours for the six top economies (based on GDP) in the region.

On the other end of the spectrum, Greece and Poland were relatively some of the worse performers in the region. Other countries with high working hours include the Central and Eastern European Countries, the Baltic States, Malta and Cyprus. Lithuania is the only country identified to have an increase in working hours across time.

Finally in the United States the decrease has been moderate relative to Europe. In figure 10, I compare the trends between the United States and Europe over the entire time frame covered. We can see that despite a significant head start post World War (1989.2 vs 2217.4), the US now lags significantly behind Europe with much higher working hours on average (1757.225 vs 1572.158).

(a) China
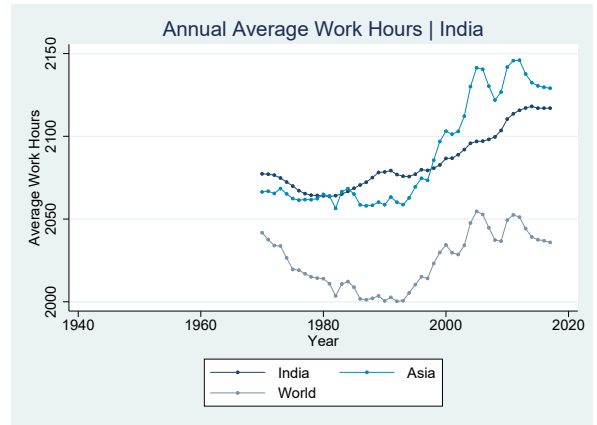
(b) India
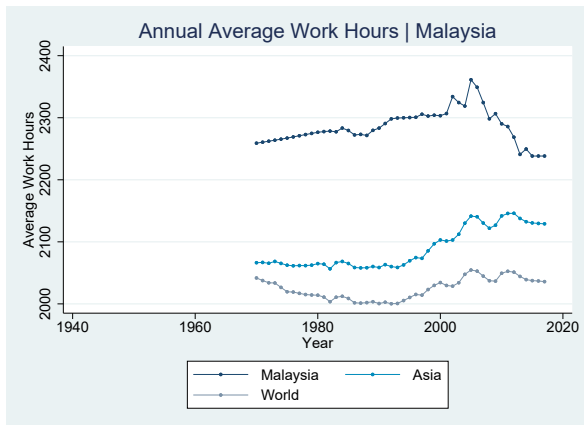
(c) Malaysia
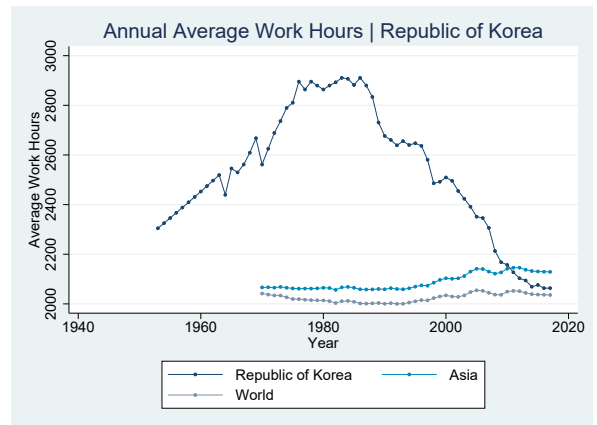
(d) Republic of Korea
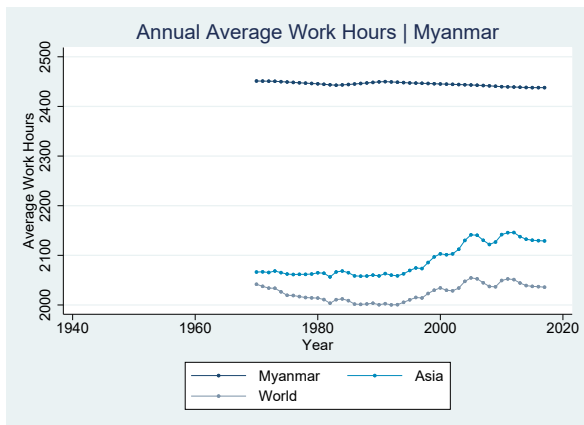
(e) Bangladesh
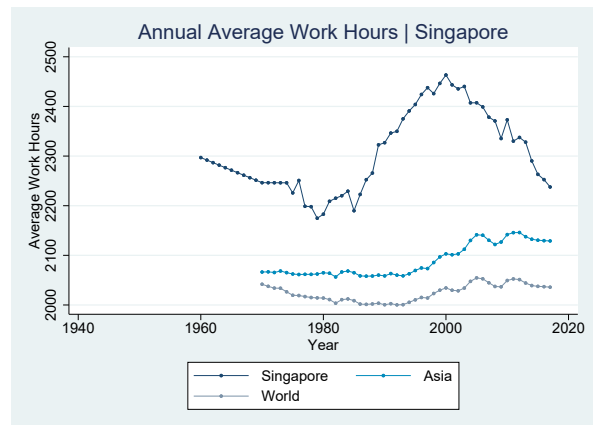
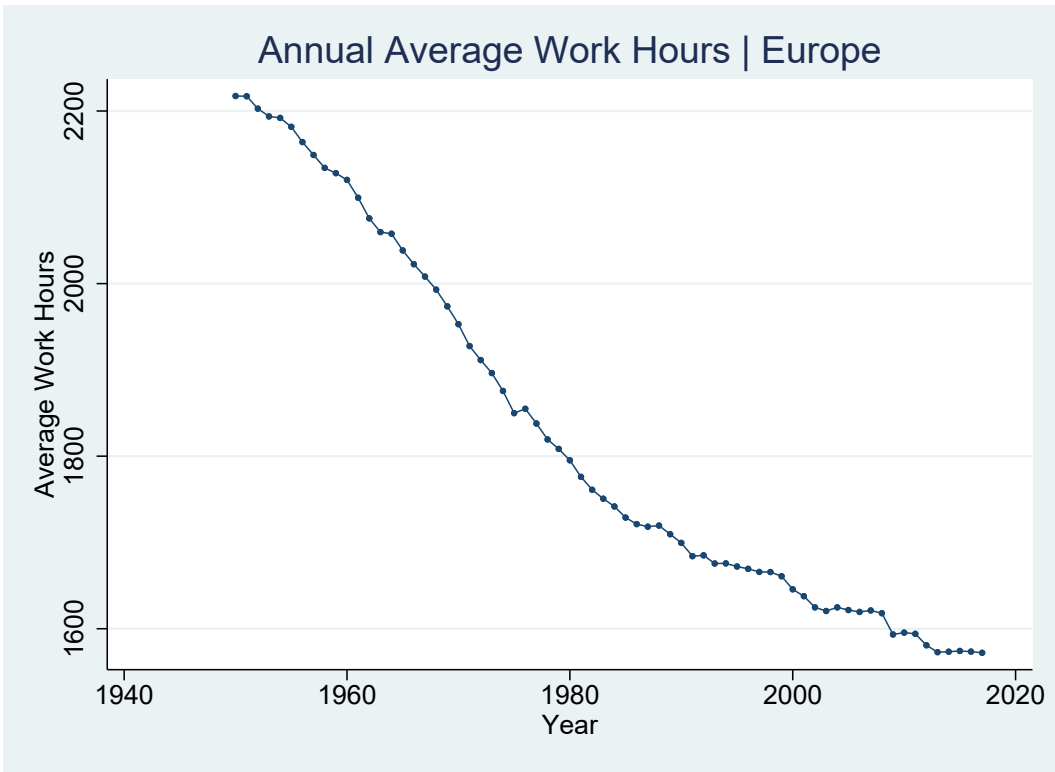(f) Singapore

Figure 6: Country Level Average Working Hours in Asia

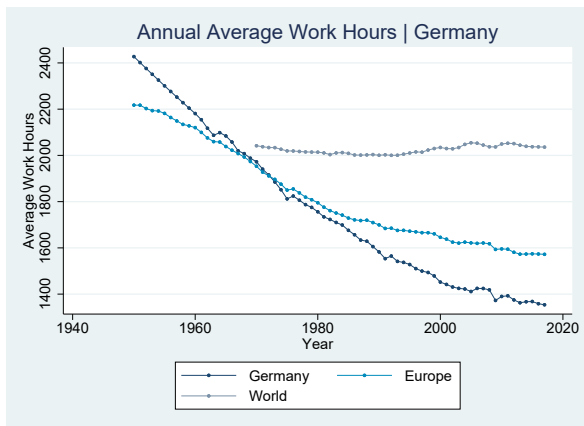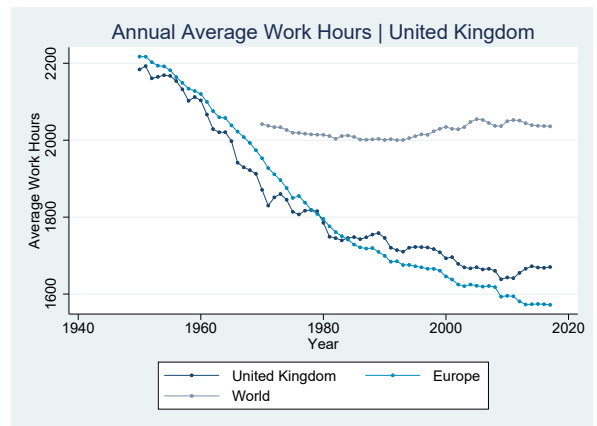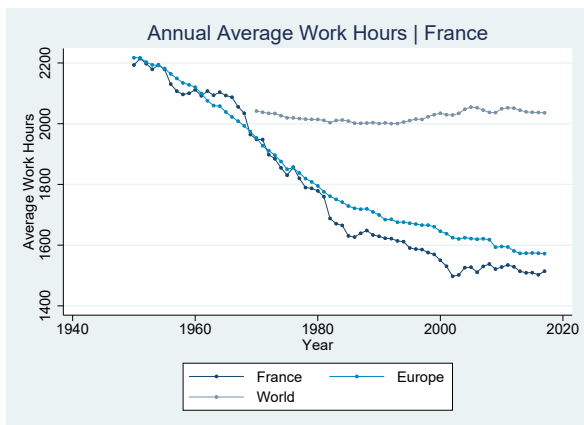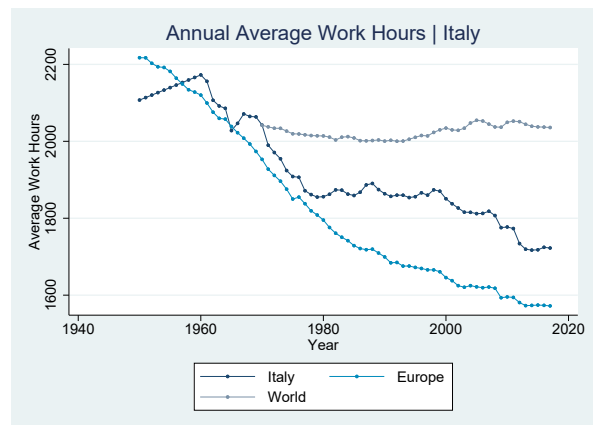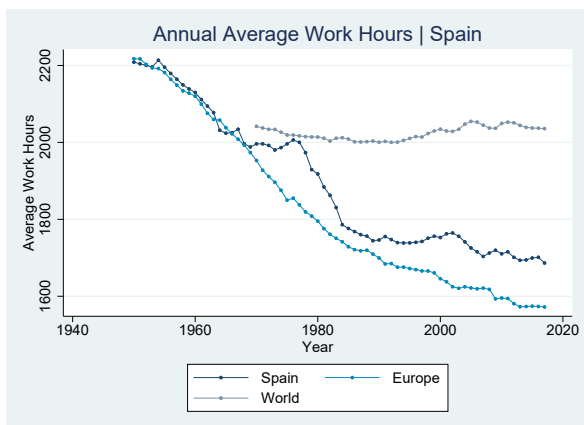Figure 7: Average Working Hours in Europe

(a) Germany

(b) United Kingdom

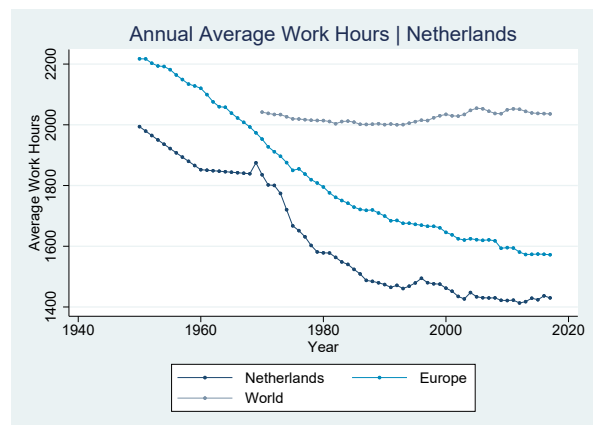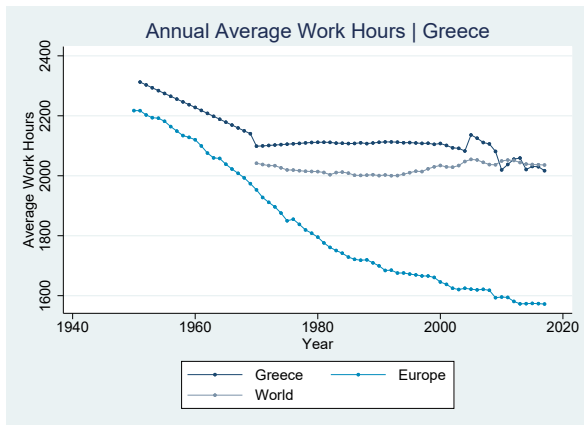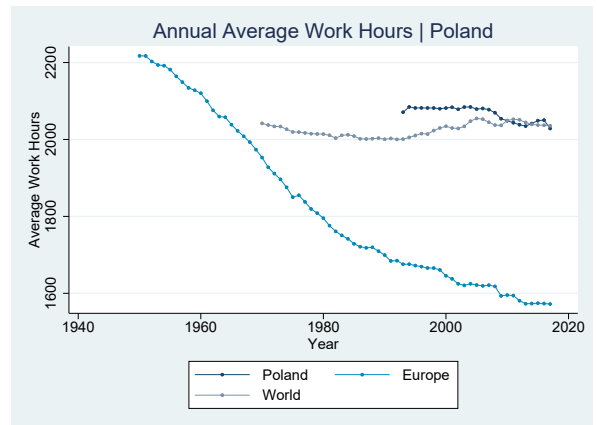(c) France

(d) Italy

(e) Spain

(f) Netherlands

Figure 8: Major Economies in Europe

13

(a)   (b)
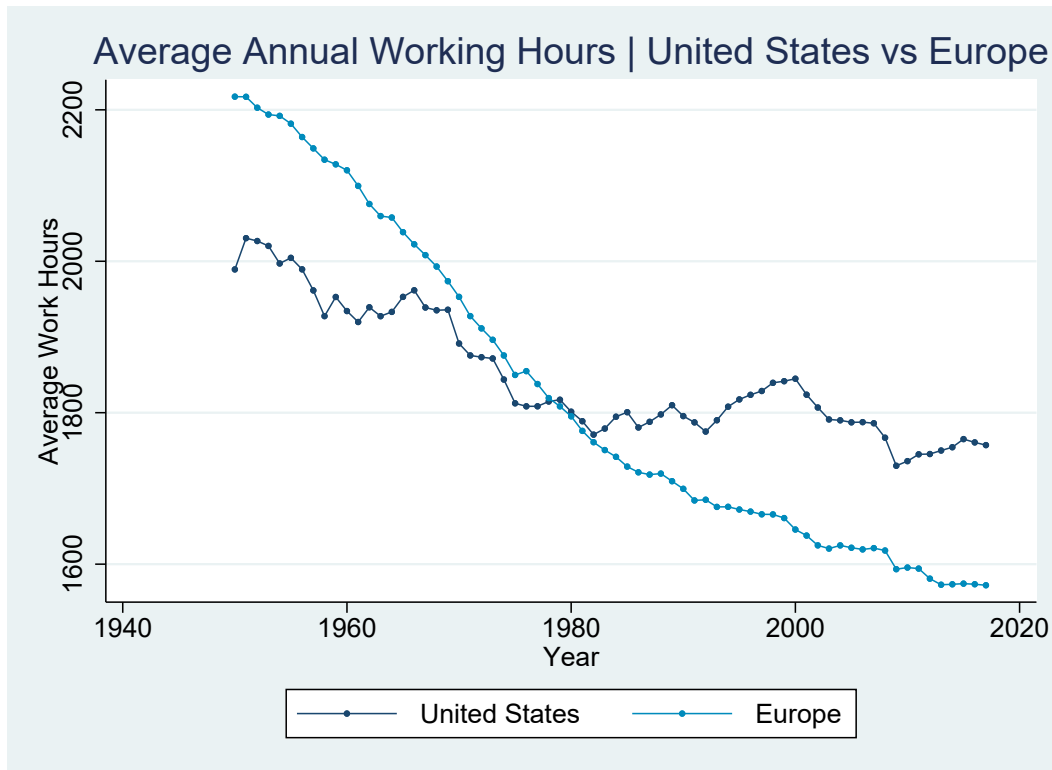
Figure 9: Average Working Hours in Greece and Poland

Figure 10: Average Working Hours in the United States and Europe

14

Section 3

Global Trends for Hourly National Income

Hourly National Income is defined as the countries Gross National Income over total annual hours worked by individuals engaged in work. Overall hourly national income has increased unanimously across regions, though the variation among regions is quite profound. Globally, the average hourly income has increased from just around 1.69 USD (2019 PPP) to around 20.94 USD (2019 PPP). Figure 11 illustrates the trends at the regional level across the globe.
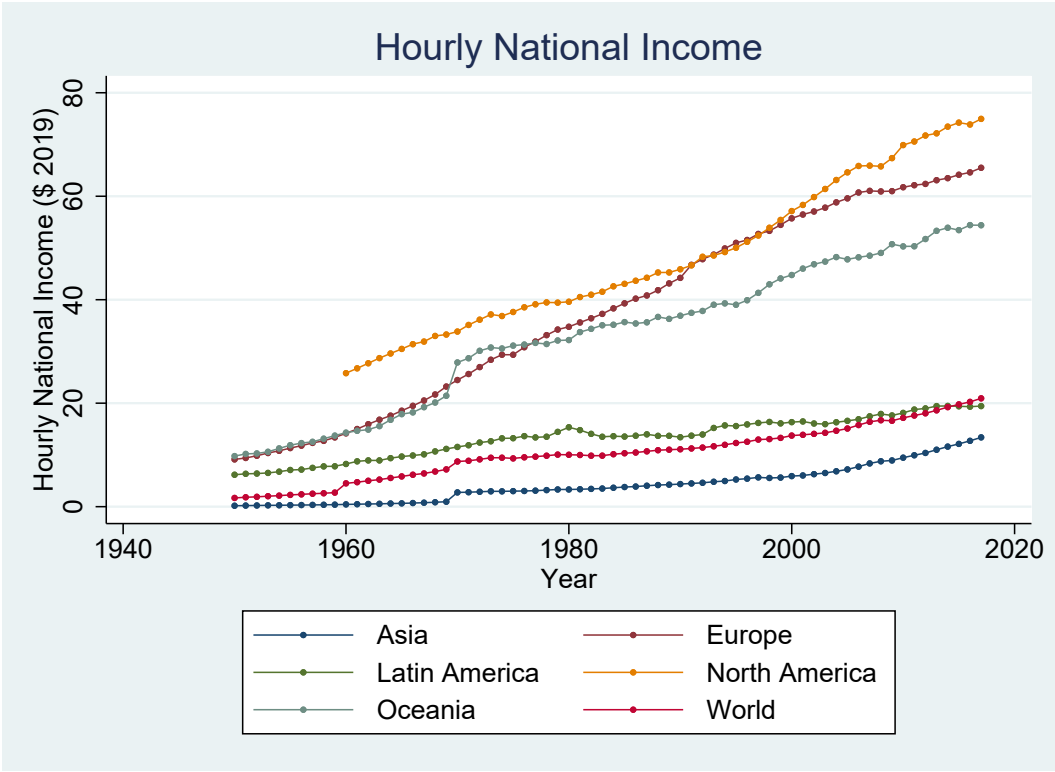
Figure 11: Hourly National Income Across the Globe

North American average here is heavily skewed towards the United States owing to the large population disparity between the US and Canada. In fact, the region enjoys the highest HNI throughout the covered time frame despite the relatively modest figures in Canada. It would be safe to assert that based on the mere population difference, the effect of Canada on the regional average is negligible. Figure 12 illustrates this below. Hence, in my analysis below, I will be focusing on the trends specifically for the US instead in contrast with the rest of the world.

Among the global economies, the United States has consistently maintained one of the highest average hourly income throughout. As of 2017, the average hourly income in the US is around 76.98 - over three and half times the global average.

As the regional trends also illustrate, Europe as a region, is a close second to the US. Understandably however, the region has a much more spread out distribution across the countries.
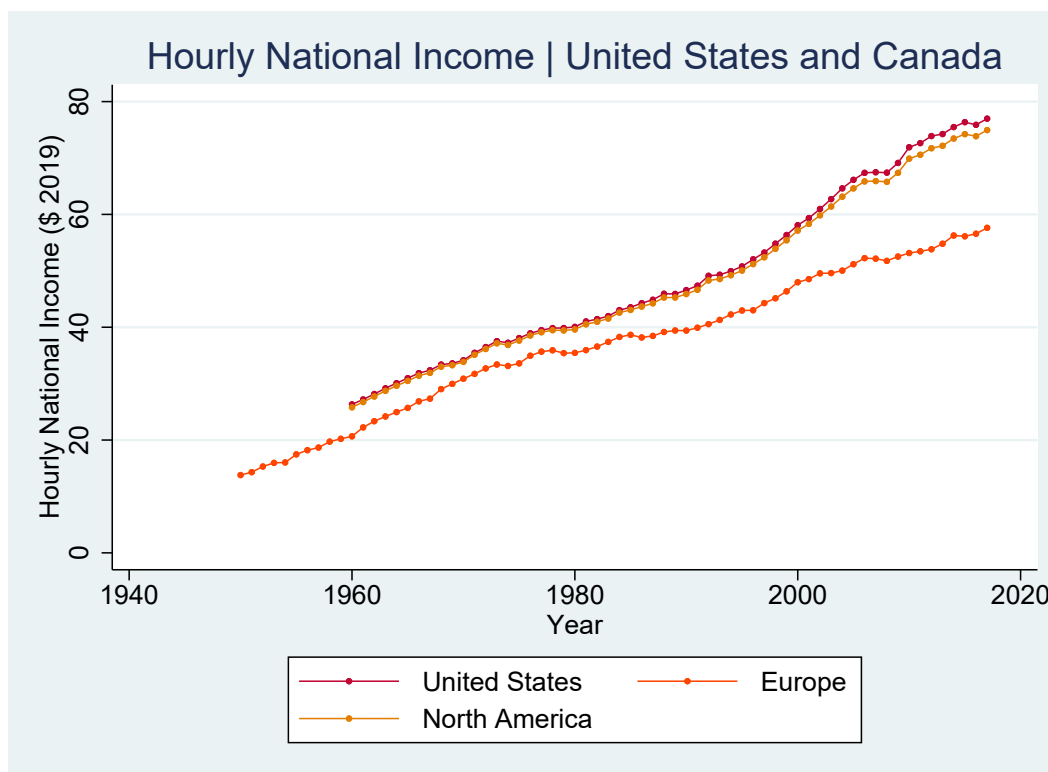
Figure 12: HNI Trends in North America

Figure 13 compares the trends for the hourly national income between the US and Europe. There has been significant growth in both cases. However, as of 2017, the gap between the two is considerable (76.975 vs 65.499). The trend also appears to be divergent despite a convergence up until mid-1990s (figure 14).

In figure 15, I compare the trends for the US with the top six economies in Europe. Immediately, we can spot the intra-regional variation. We can see convergence for US, France and Germany similar to the case for GDP per work hours as pointed out in *Capital and Ideology*, but also in addition with the Netherlands (Piketty; ch. 11, 2019). Further, as Figure 16 shows, there are indeed several other prominent European countries that have over time started to perform much better, eventually, surpassing the US.

Conversely, Asia has been consistently the worst performer in the metric. China and India, the largest two countries in the region in terms of economy and population have consistently performed considerably below the global average. Turkey, Russia, Republic of Korea, Singapore, Japan, Israel and Malaysia have been some of the best performers. In figure 17 - figure 19 I cover some of these cases, along with all the other remaining G20 countries.
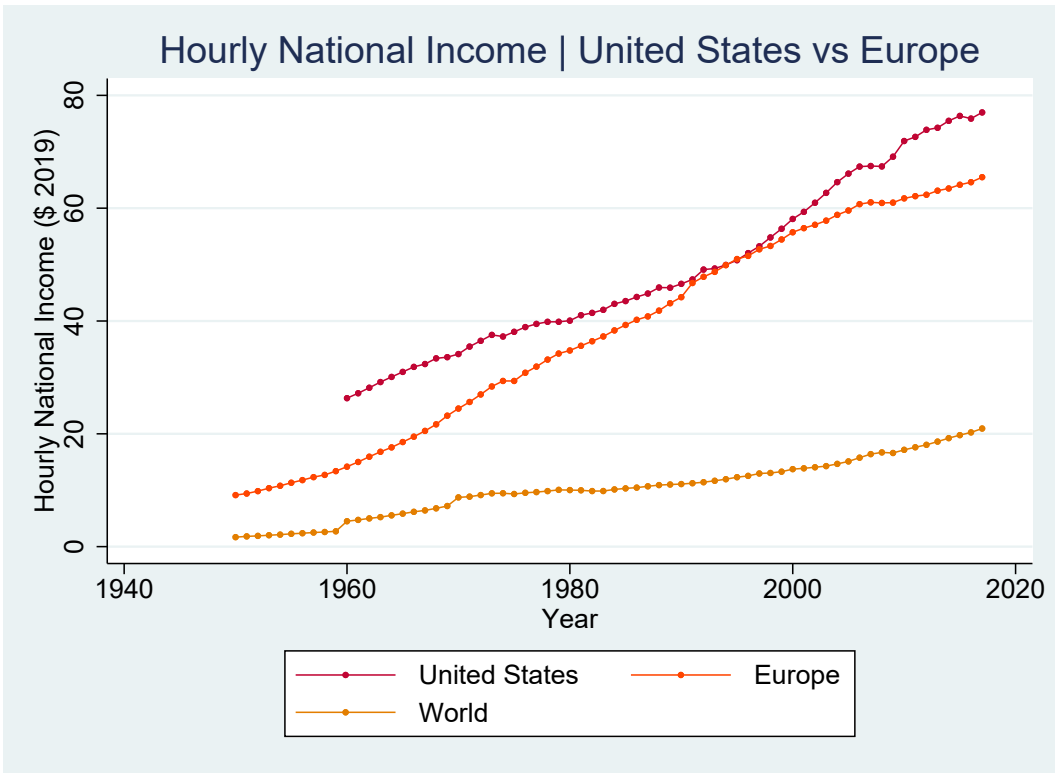
Figure 13: HNI Trends United States vs Europe
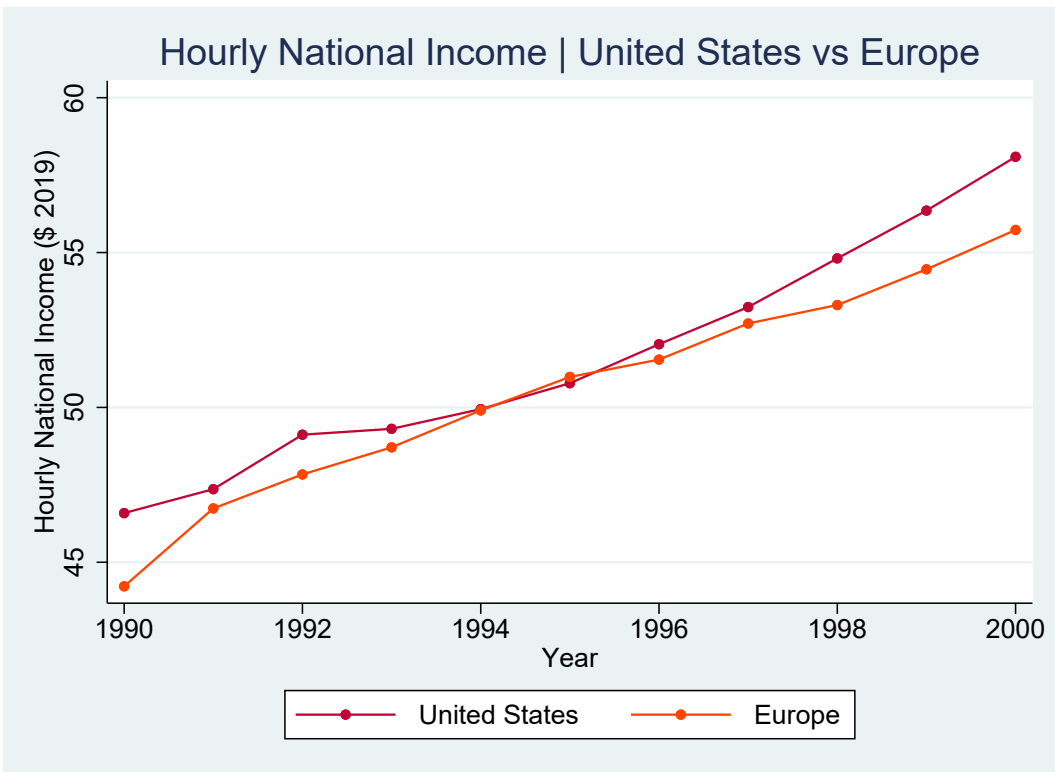
Figure 14: United States vs Europe Convergence
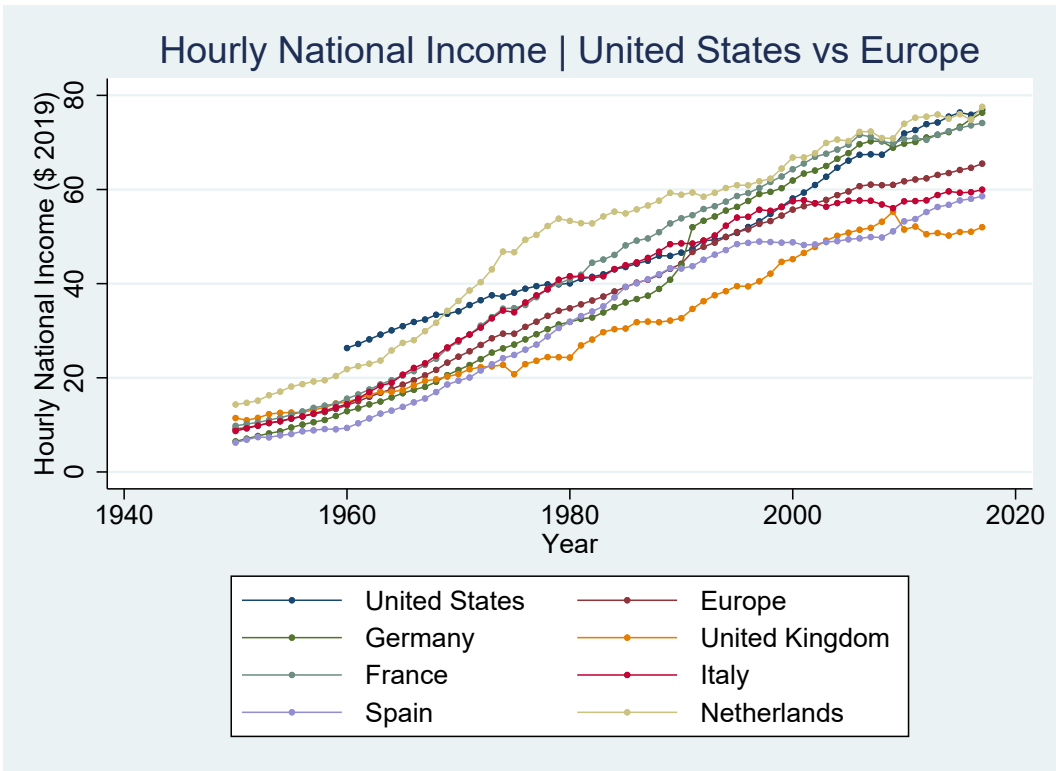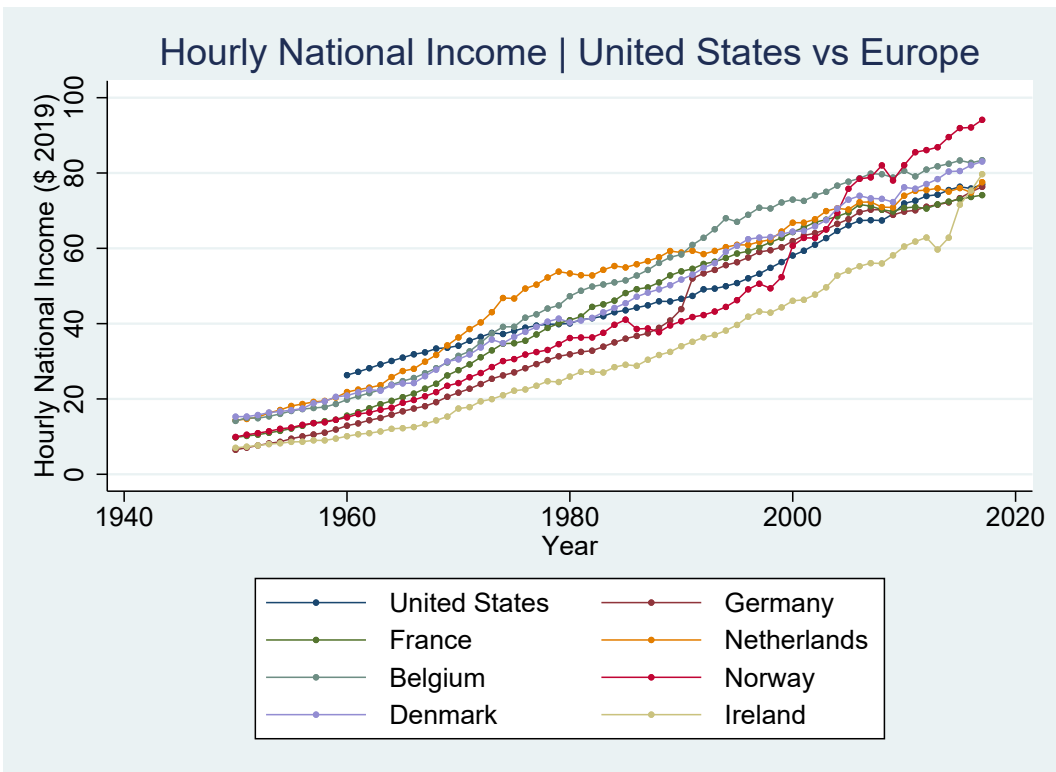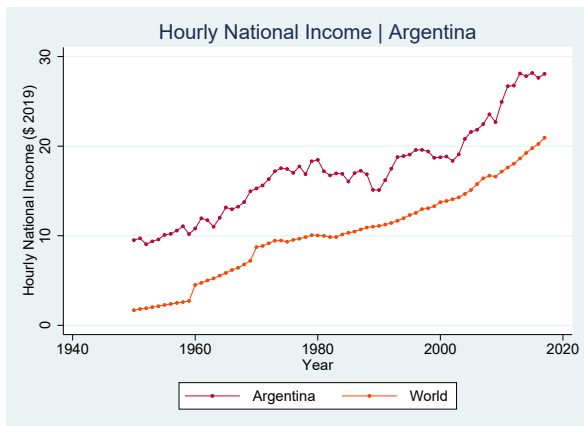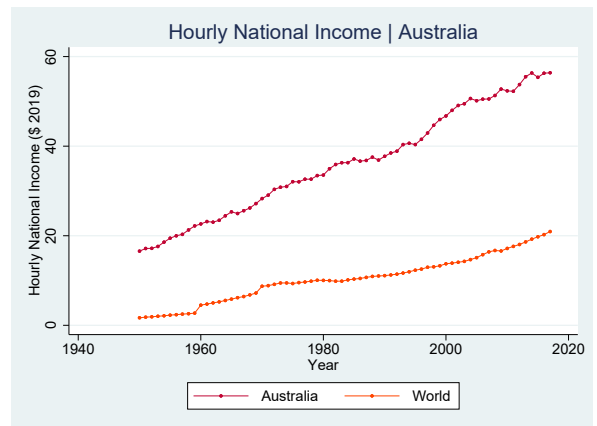
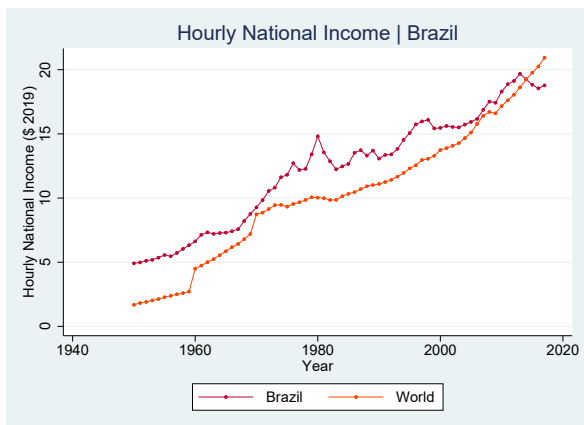Figure 15: United States vs Europe Top Economies
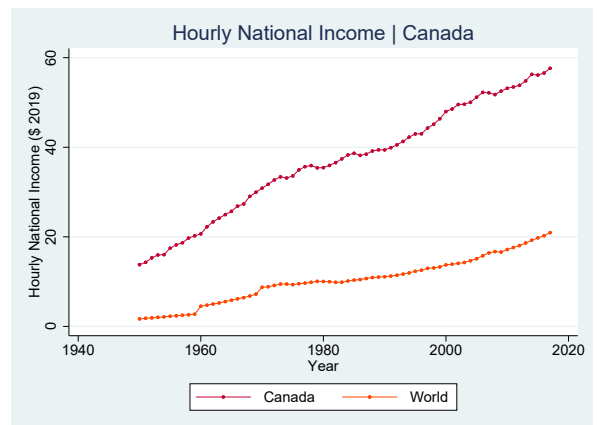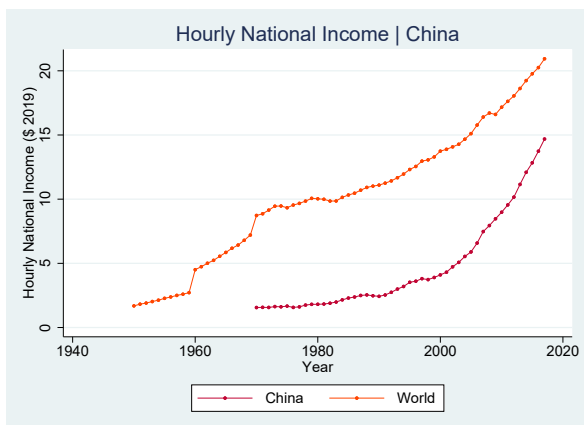

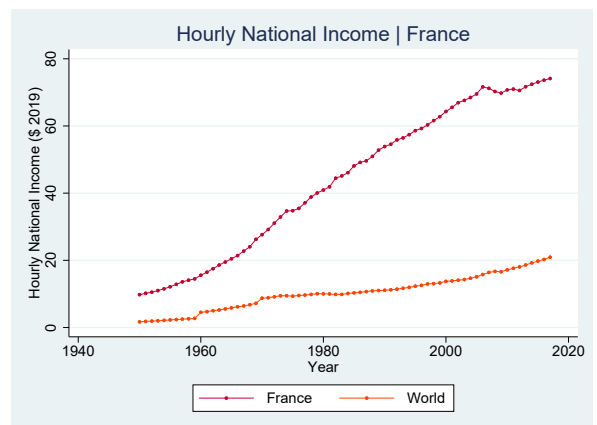Figure 16: United States vs Europe Top Performers
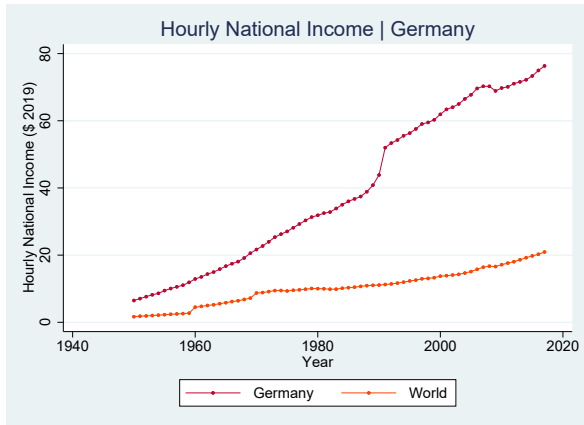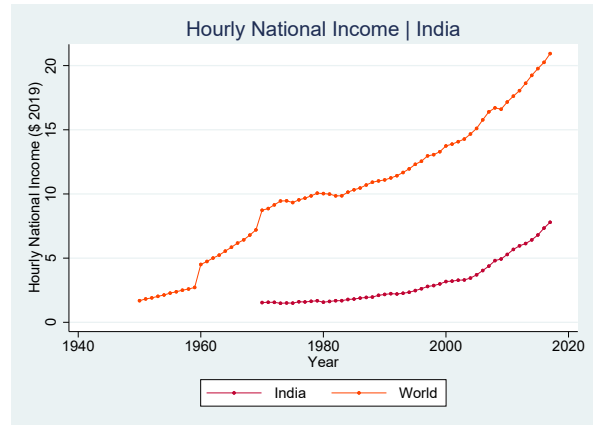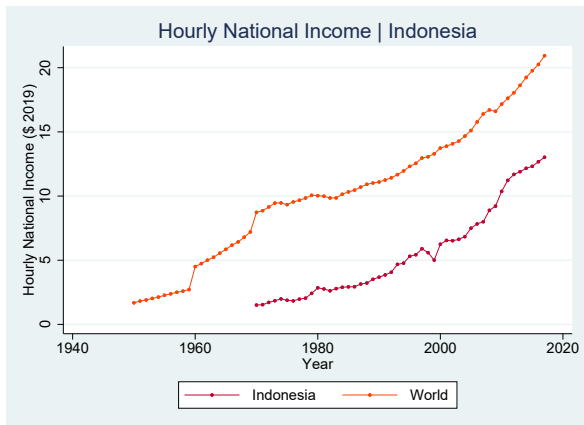
(a) Argentina

(b) Australia

(c) Brazil

(d) Canada

(e) China
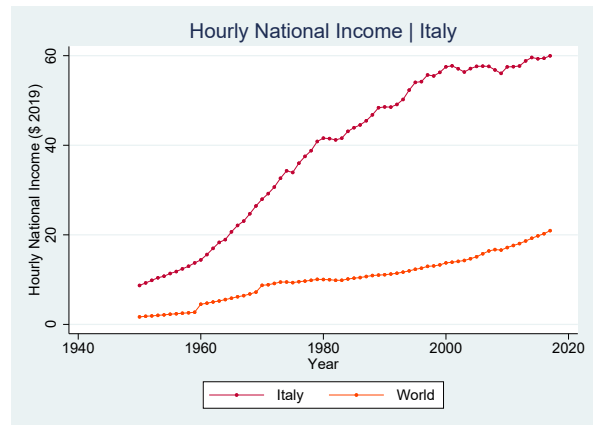
(f) France

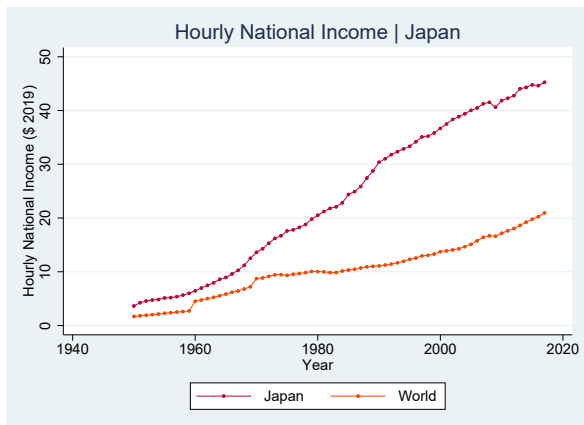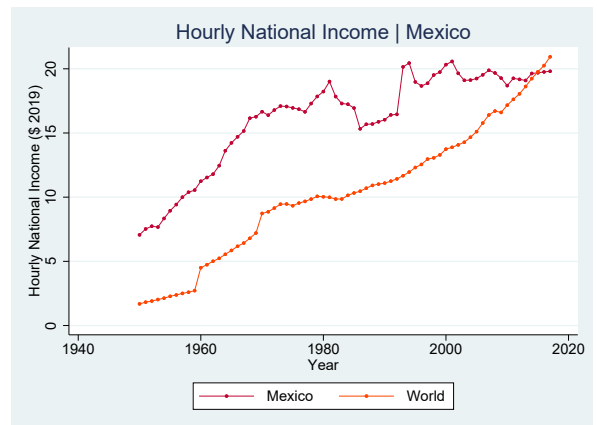Figure 17: Hourly National Income for the G20 (a)
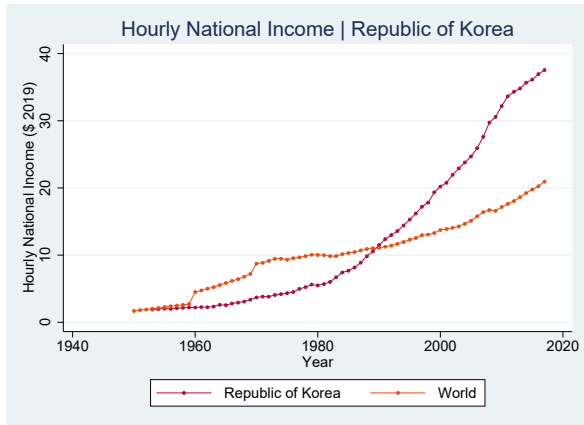
(a) Germany

(b) India
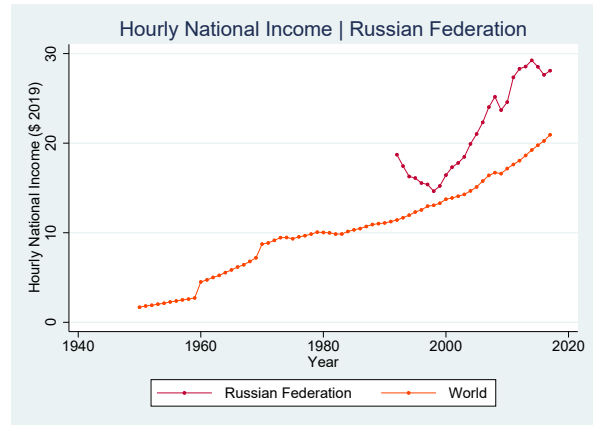

(c) Indonesia
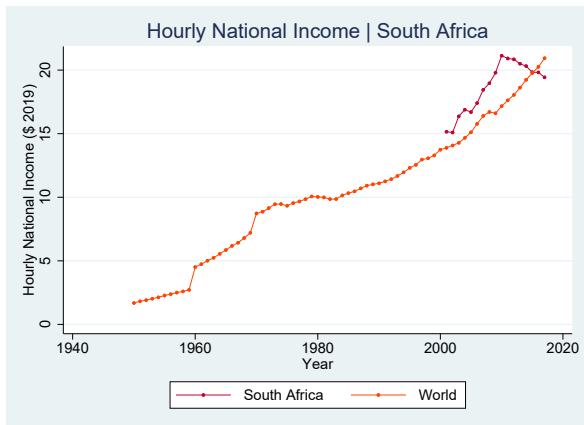

(d) Italy

(e) Japan

(f) Mexico

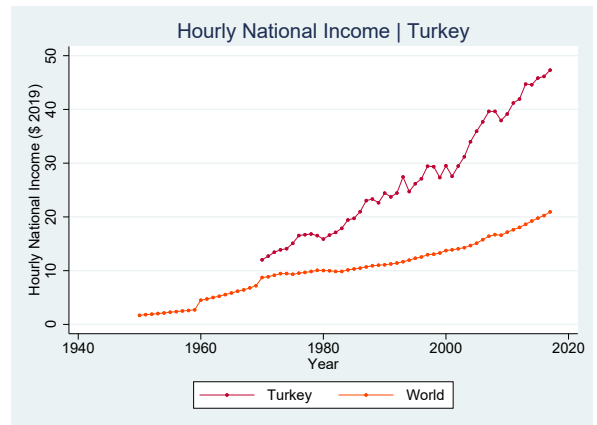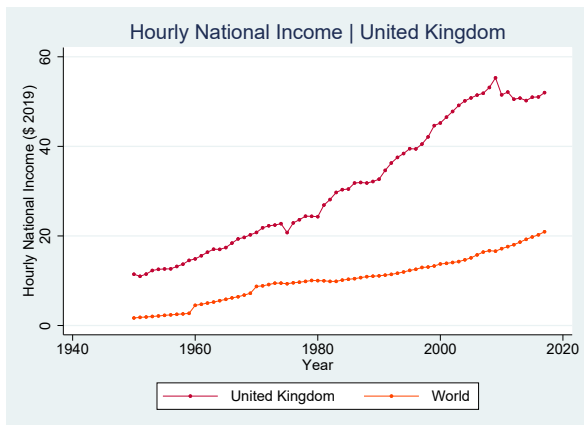Figure 18: Hourly National Income for the G20 (b)

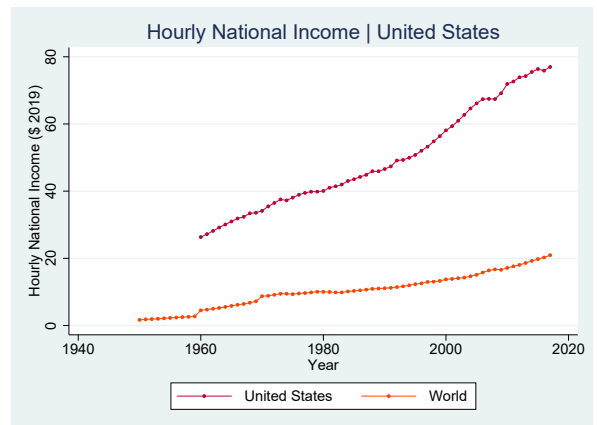(a) Republic of Korea

(b) Russian Federation

(c) South Africa

(d) Turkey

(e) United Kingdom

(f) France

Figure 19: Hourly National Income for the G20 (c)

Section 4

Hourly National Income across Income Groups

In this section, I will be covering the hourly national income trends across income groups. Consistent with the World Inequality Lab methodology, I have divided the income groups as the top 10%, the middle 40%, and the bottom 10%. The global and regional level data was interpolated using the World Inequality Lab data interpolation tools. For each region, I present the data in the form of paired plots. The first graph, comprises of the raw values. It illustrates the average hourly income a particular individual from the respective income group is expected to earn. The second plot illustrates the percentage share of hourly income of the entire income group from the total hourly income earned in a given year by the population involved.

Figure 20 and figure 21 below show the global trends by the income groups. On an individual level, we can see that the disparity has indeed increased at an alarming level. In 1980, an average individual in the global top 10 percentile could have expected to earn around 60.56 2019 USD per hour, while currently an individual in the top decile earns around 117.30 2019 USD on average. Compare this with middle 40 percent that in 1980 earned around 8.76 2019 USD to now earning around 19.08 and the bottom 50 percent that moved from earning 0.93 2019 USD in 1980 to 3.14 2019 USD in 2017. However, as is evident by the figures, despite the increased gap in the raw hourly income, the trends are convergent due to the higher growth rate of hourly income at lower percentiles. Figure 21 illustrates this explicitly in terms of total share of hourly income earned by each income group.

At regional level, however, there is only one major outlier. As figure 22 - 26 illustrate, all regions except Asia in fact have a diverging trends between the top 10% and the middle 40 %. In case of Asia, the average income of a single individual in the top 10% increased from 18.764 2019 USD to 68.525 2019 USD, in comparison with the middle 40% individual who saw an increase from 2.59 to 12.779 2019 USD and the bottom 50% individual whose income increased from 0.82 to 2.865486 2019 USD. Overall the share of the top 10% decreased from 56.4% to 51.1% from 1980 to 2017 where as the share of the middle 40% increased from 31.1% to 38.2%. The share of the bottom 50% decreased from 12.4% to just about 10.7%.

Despite diverging trends, Europe and Oceania are still relatively egalitarian in terms of hourly income. As of 2017, a top 10% hourly income earner in Europe earns roughly around 3 times the hourly income earner of the middle 40% (229.75 vs 74.35) as is the case for Oceania (188.10 vs 66.38). Contrast this with Asia where an hourly income earner in the top 10% earns over 5.5 times the hourly income of the the middle 40%. North America can be interpreted as a case of progressed digression as the hourly income share of the top 10% exceeds the hourly income share of the middle 40%. Latin America despite being significantly unequal shows the most stable trends across the income distribution. Figure 27 to 32 illustrate the growth in hourly income by income deciles for each region.
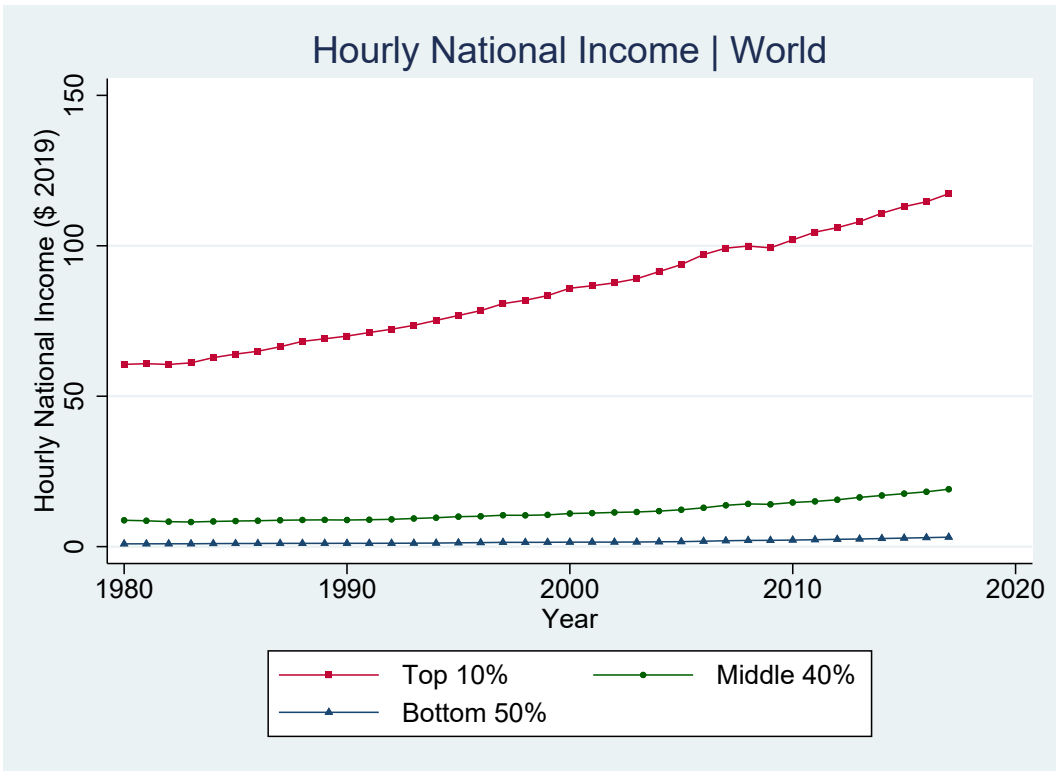
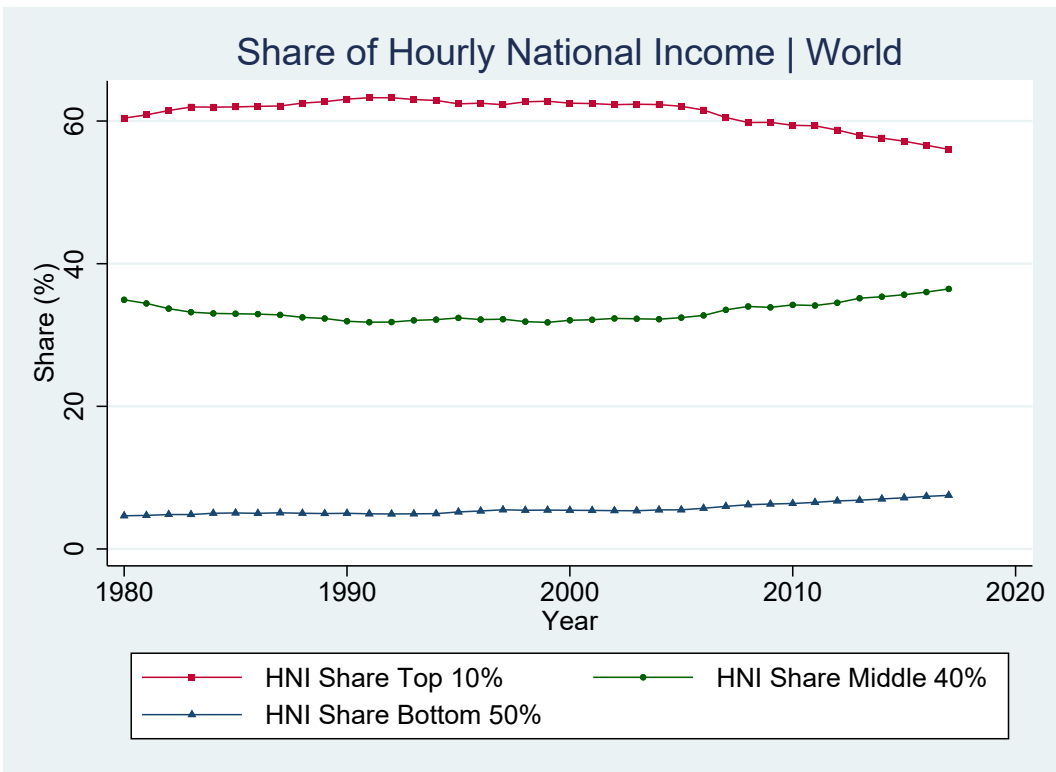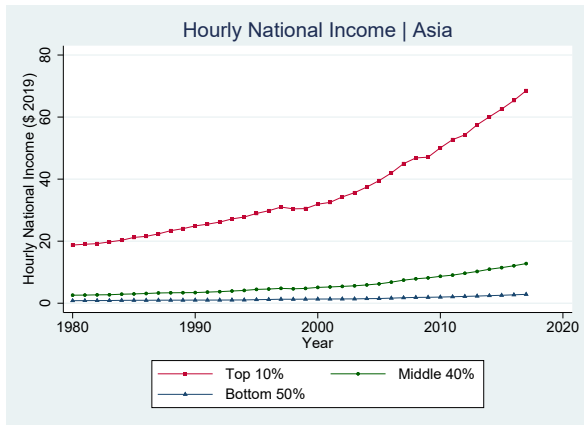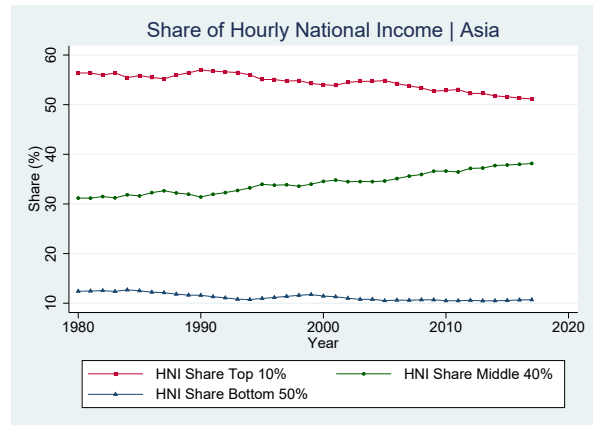Figure 20: Global Trends across Income Groups
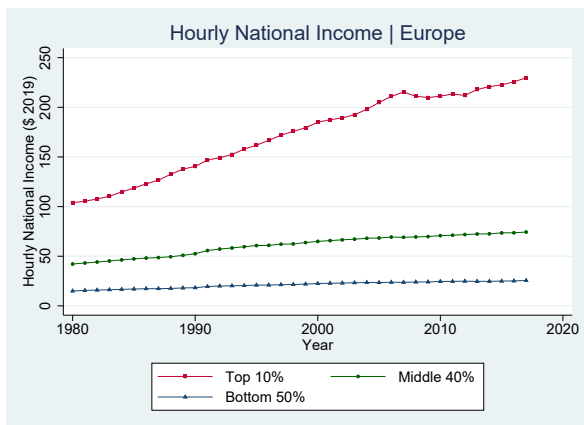

Figure 21: Global Trends across Income Groups (Shares)

(a) Raw   (b) Shares
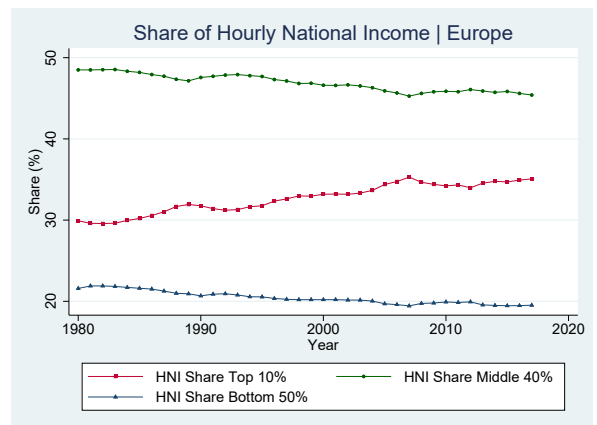
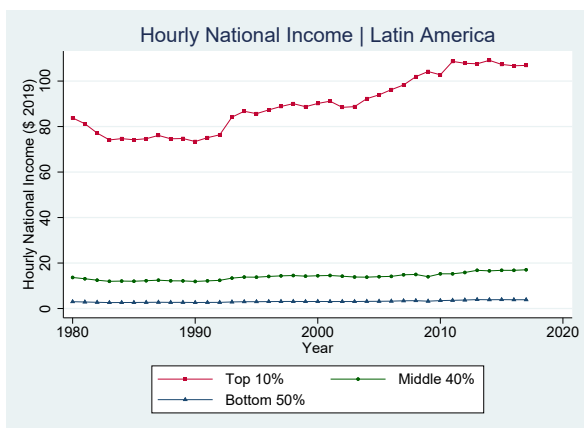Figure 22: Trends across Income Groups in Asia

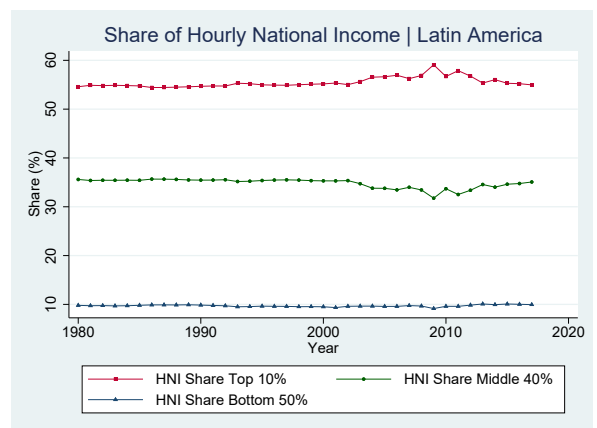(a) Raw   (b) Shares

Figure 23: Trends across Income Groups in Europe

(a) Raw   (b) Shares

Figure 24: Trends across Income Groups in Latin America
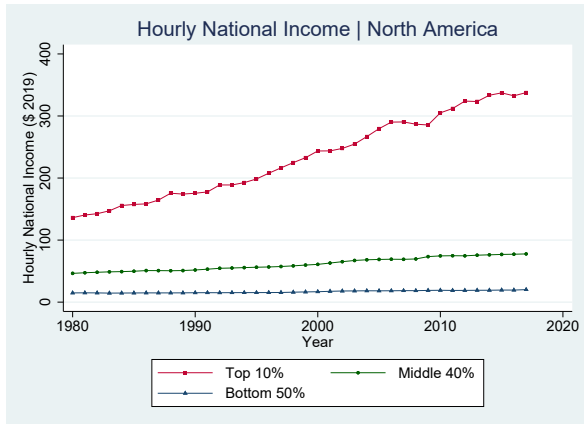
(a) Raw
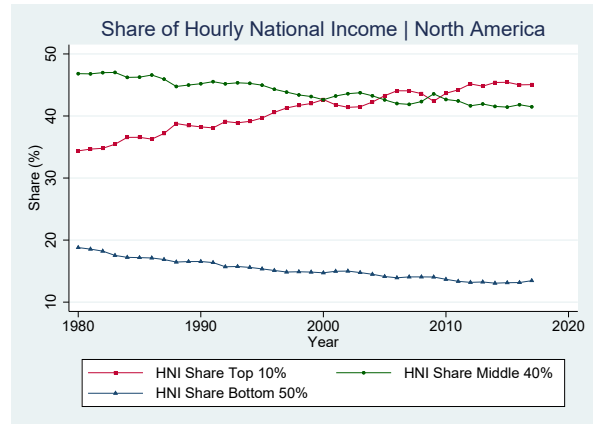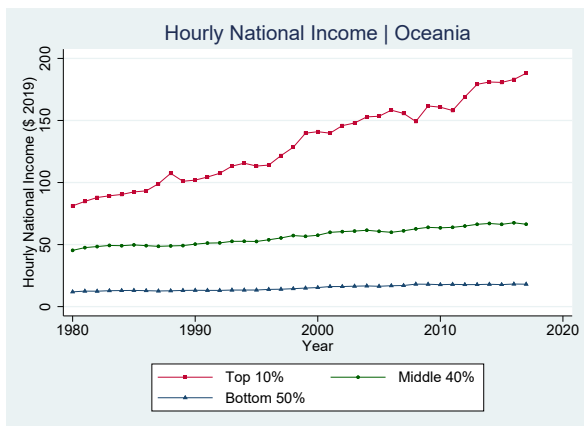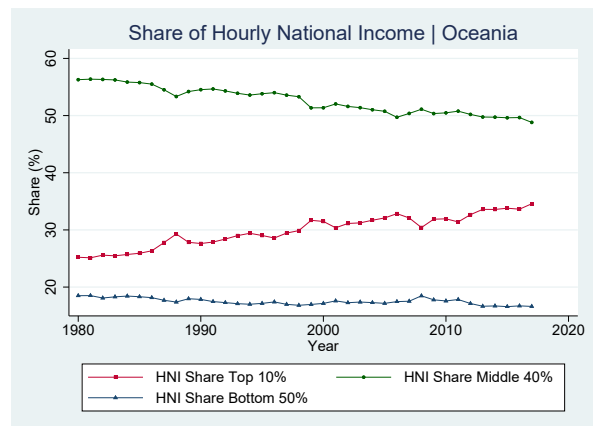
(b) Shares

Figure 25: Trends across Income Groups in North America

(a) Raw

(b) Shares

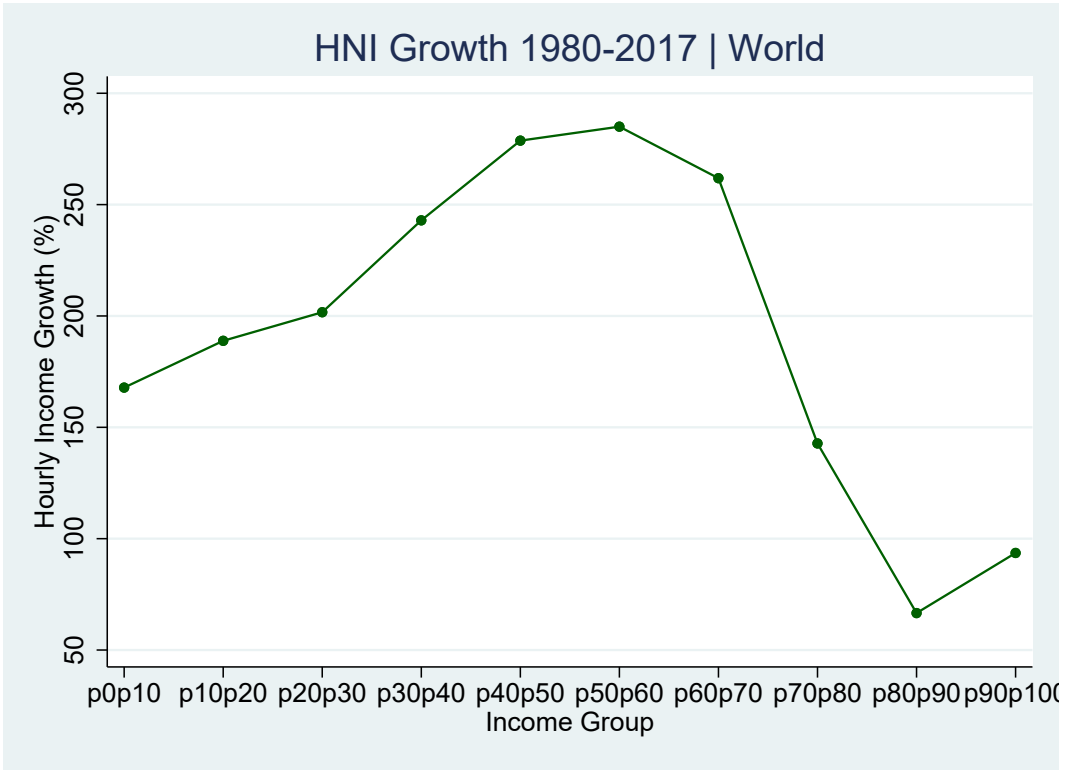Figure 26: Trends across Income Groups in Oceania

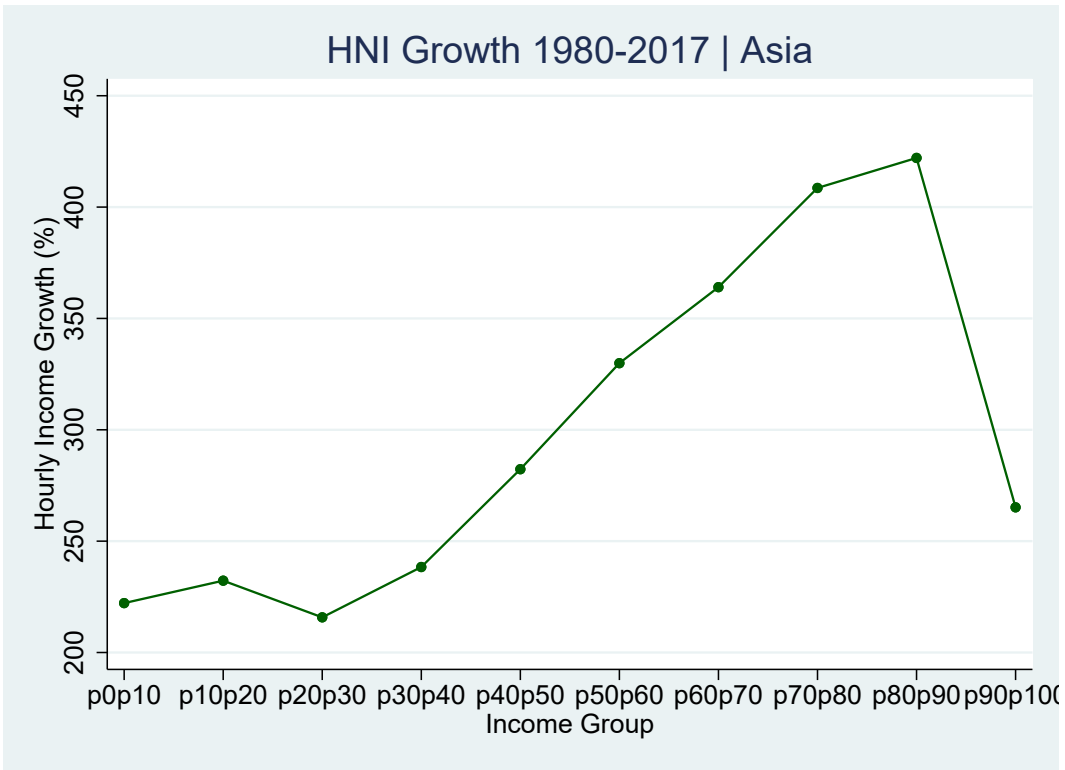Figure 27: HNI Growth 1980 - 2017
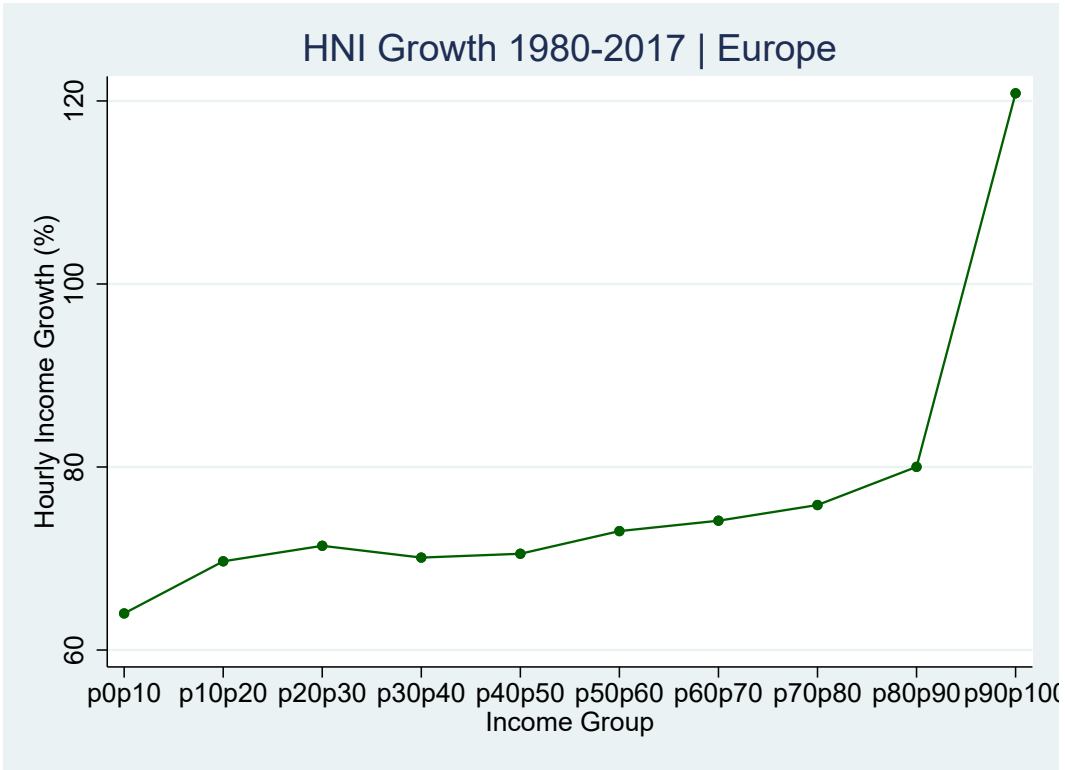

Figure 28: HNI Growth 1980 - 2017
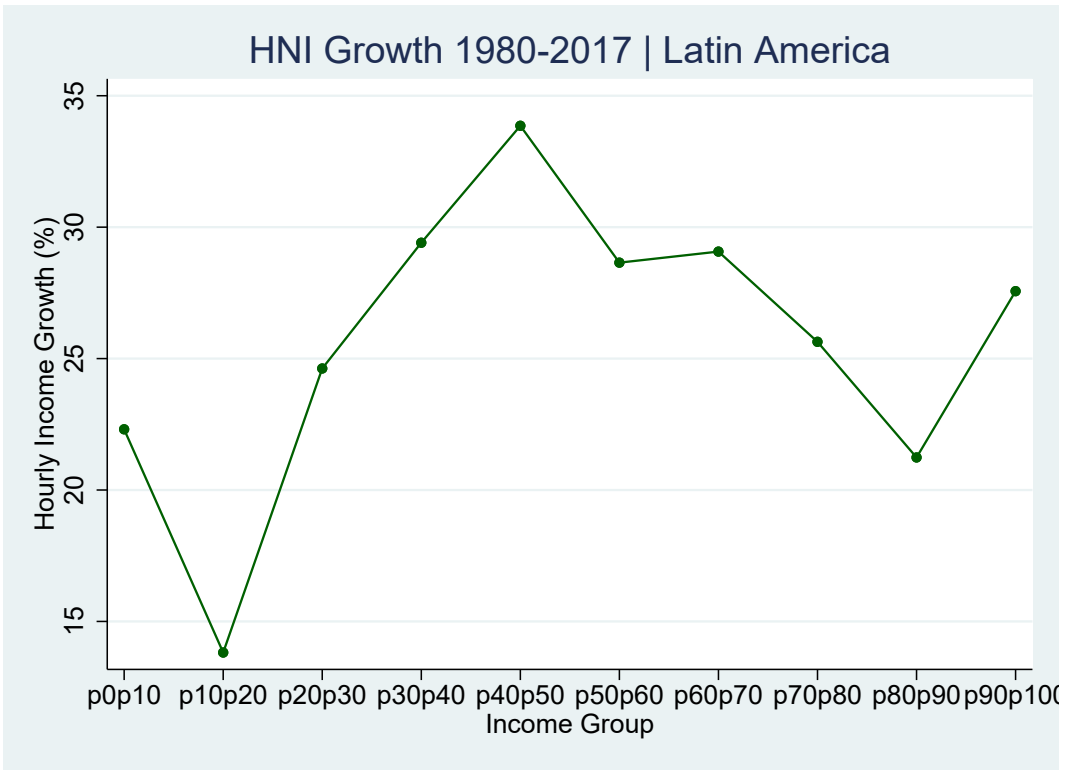
26

Figure 29: HNI Growth 1980 - 2017

Figure 30: HNI Growth 1980 - 2017

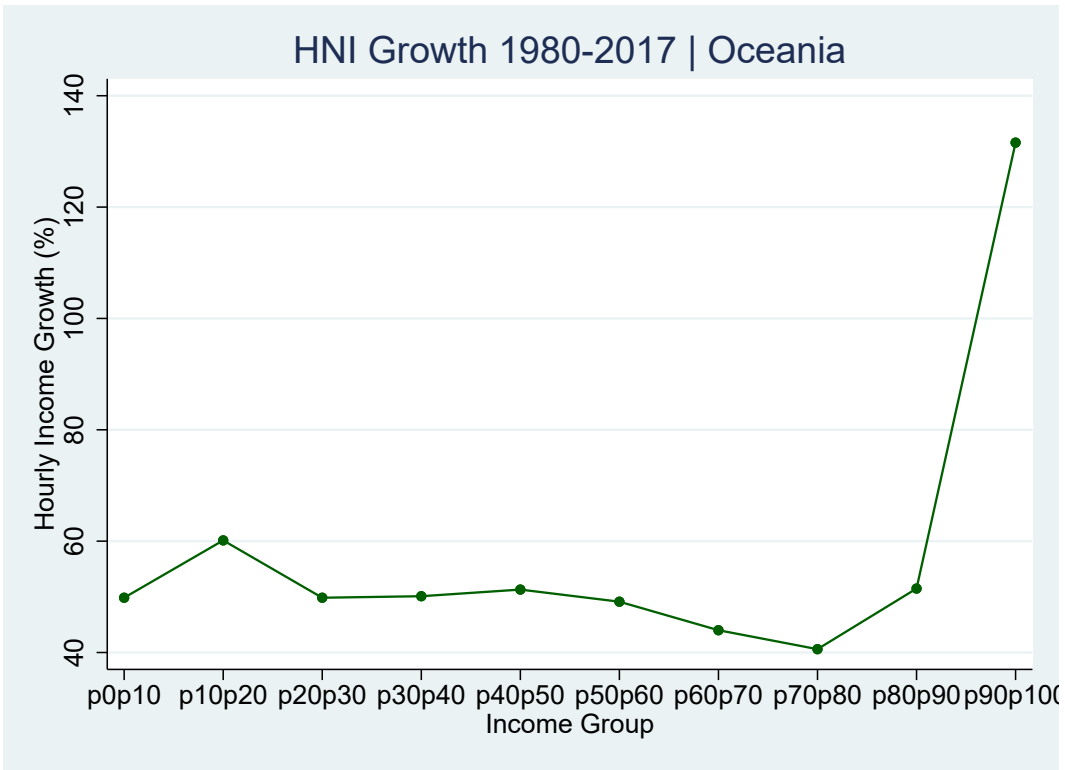Figure 31: HNI Growth 1980 - 2017

Figure 32: HNI Growth 1980 - 2017

Section 5

Hourly Income in the context of Annual Income

In this section I will be comparing the global inequality of hourly income and the inequality of annual income. In order to make the results comparable, I have interpolated the trends for annual income specifically for the set of countries covered in the study.

In the previous analysis, we have seen that there notable differences in the working hours across countries. This alludes to the possibility that the inequality of hourly income is likely much higher than the inequality of annual income because individuals in poorer countries are also working longer hours. Indeed this is what we observe in figure 33 to 35.

In figure 33 we can see that the top 10% of the hourly income earners in the world consistently have a higher global share of the entire population in comparison with the top 10% annual income earners. The gap is notable throughout the time period covered. It also appears to have grown over time. In 2017, the top 10% hourly income earners owned around 56.0% of the total population share while the top 10% annual income earners own around 53.4% of the total population share. This constitutes difference of around +2.6 percentage points. In 1980, these figures were recorded to be around 60.4% and 59.1% respectively - a gap of around +1.3 percentage points.

Naturally, the opposite is true for the middle 40% and the bottom 50%. In both cases, the share of hourly income is consistently lower. In 2017, the middle 40% hourly income earners owned around 36.5% of the total population share versus the 38.1% total population share of the middle 40% annual income earners - a gap of -1.6 percentage points. In 1890 these figures were recorded to be 34.9% and 35.9% respectively, with a percentage point difference of -1.

Finally for the bottom 50%, despite an increase in the shares for both the bottom 50% hourly income earners and the bottom 50% annual income earners, the gap between the two has also increased. In 2017, the shares were recorded as 7.5% vs 8.5% for the hourly income earners and the annual income earners respectively (a gap of around -1 percentage point). While in 2017 these figures stood at around 4.7% vs 5.0%, representing a gap of around -0.3 percentage points.

These figures are of course an estimate and indeed the actual global shares, representing all countries in the world, may have some variations. Nonetheless, the persistence of these trends illustrate that the relative gap between the two groups is likely to be very stable. Hence, the overall results should remain the same.
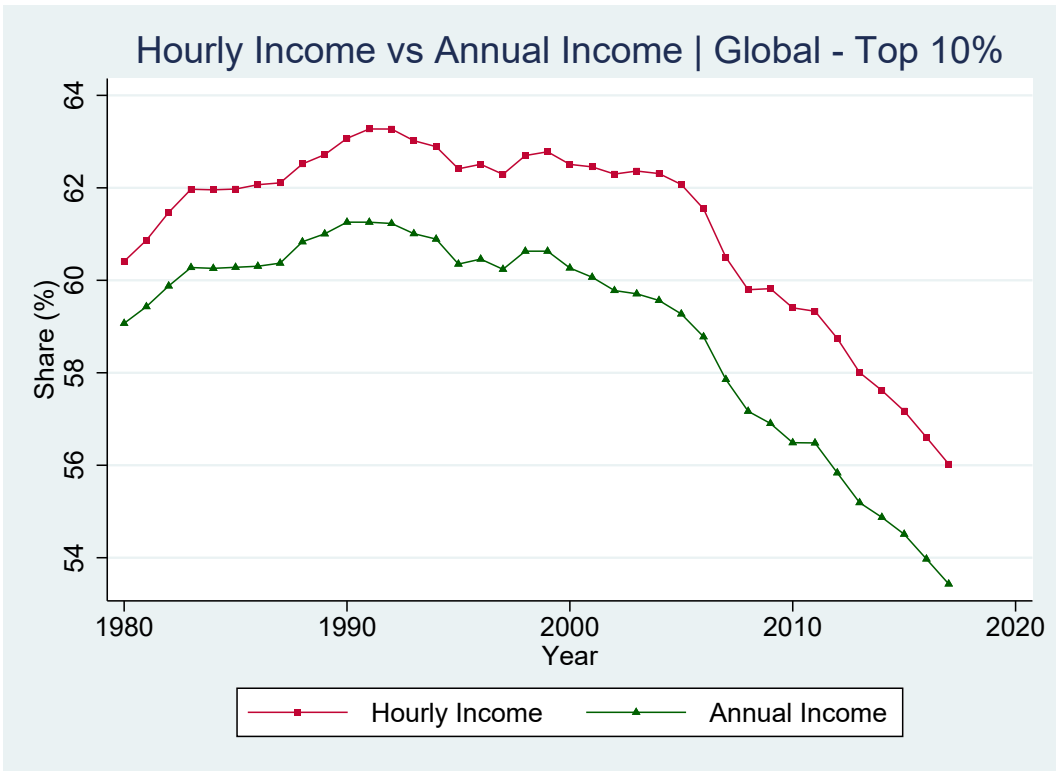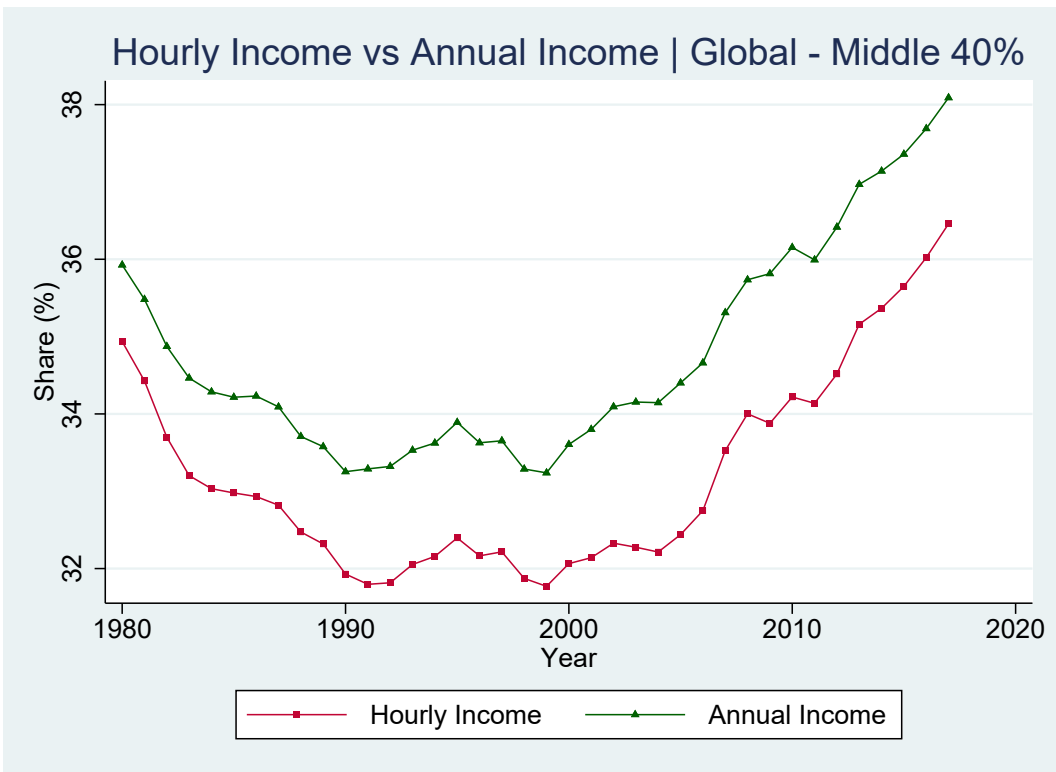
Figure 33: Global Top 10%
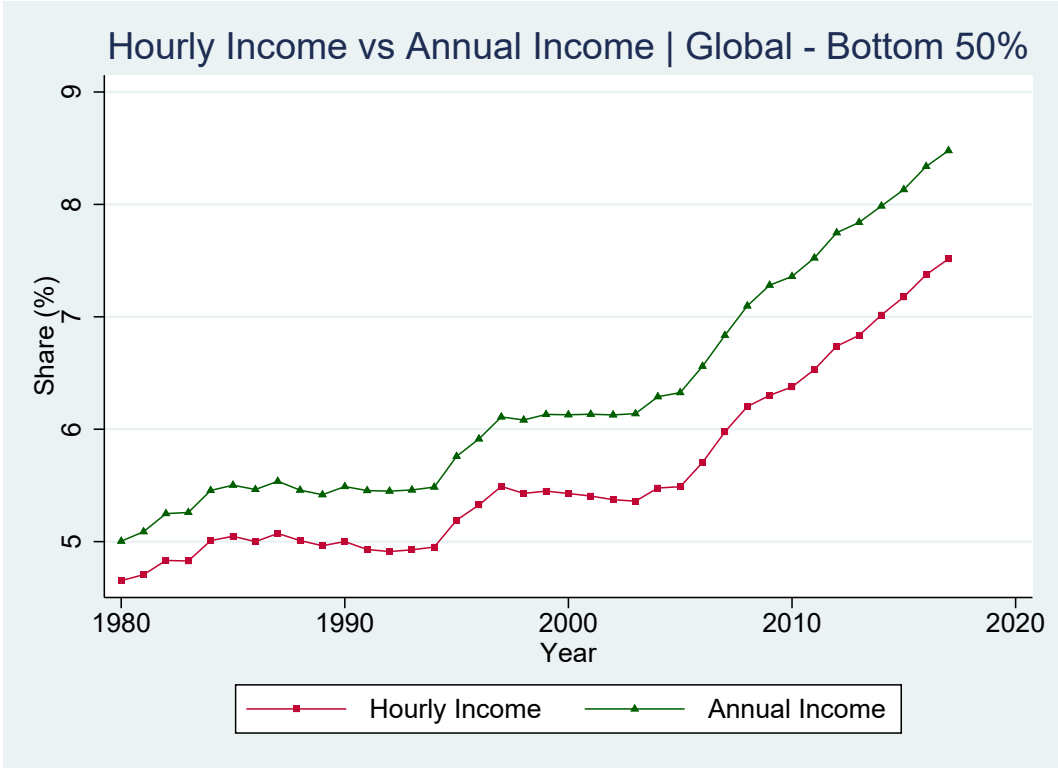

Figure 34: Global Middle 40%

Figure 35: Global Bottom 50%

Section 6

Conclusion

Globally, we can see that workers in most regions see a decrease in work hours. Asia is the only exception to that case. Despite a rise in the hourly national income across the globe, for all regions, there is substantial variation in the distribution of the hourly national income across the regions. Within region, North America, specifically, the United States has the most projected unequal distribution of hourly income; it is the only region in the world with a higher share of top 10% in comparison to the middle 40%. Global inequality of hourly income is possibly much higher than the inequality of annual income due to longer average working hours in poorer countries

For future studies there can be several avenues to pursue. Firstly, it would be pivotal to incorporate trends for African countries and bridge the data gaps. It would be interesting to look into similar trends with the incorporation of the domestic labor. This perhaps would exacerbate the disparity between regions - in particular between developing and developed countries. Lastly, it would be interesting to to take a deeper look into the trends for the hourly national income with respect to well-fare, education, technology among other dimensions.

References

F. Alvaredo, L. Assouad, T. Piketty, "Measuring Inequality in the Middle East: the World's Most Unequal Region?", Review of Income and Wealth, 2019

F. Alvaredo, L. Chancel, T. Piketty, E. Saez, G. Zucman, World Inequality Report 2018, WIL, 2018

F. Alvaredo, D. Cogneau, T. Piketty, "Inequality under Colonial Rule: Evidence from French Algeria, Cameroon, Tunisia, Vietnam and comparisons with British colonies 1920-1960", Journal of Development Economics, 2021

T. Blanchet, L. Chancel et al, Distributional National Accounts Guidelines: Methods and Concepts used in the World Inequality Database, WIL, 2020

T. Blanchet, L. Chancel, A. Gethin, "How Unequal Is Europe? Evidence from Distributional National Accounts, 1980-2017", WIL, 2019

F. Bourguignon, C. Morrisson, "Inequality among World Citizens: 1820-1992", American Economic Review, 2002

L. Chancel, D. Cogneau, A. Gethin, A. Myczkowski, "How Large Are African Inequalities? Towards Distributional National Accounts in Africa", WIL, 2019

L. Chancel, T. Piketty, "Indian Income Inequality, 1922-2015: from British Raj to Billionaire Raj?", Review of Income and Wealth, 2019

M. De Rosa, I. Flores, M. Morgan, "Inequality in Latin America Revisited: Insights from Distributional National Accounts", WIL, 2020

Feenstra, Robert C., Robert Inklaar and Marcel P. Timmer (2015), "The Next Generation of the Penn World Table" American Economic Review, 105(10), 3150-3182, available for download at www.ggdc.net/pwt

M. Morgan, T. Neef, "What's New About Income Inequality in Europe?", WIL, 2019

R. Moshrif, "What's New About Income Inequality in the Middle-East?", WIL, 2020

F. Novokmet, T. Piketty, G. Zucman, "From Soviets to Oligarchs: Inequality and Property in Russia, 1905-2016", Journal of Economic Inequality, 2018

T. Piketty, L. Yang, G. Zucman, "Capital Accumulation, Private Property and Rising Inequality in China, 1978-2015", American Economic Review, 2019

T. Piketty, Capital et idéologie, Seuil, 2019 (Capital and ideology, HUP, 2020)

T. Piketty, Le capital au 21e siècle, Seuil, 2013 (Capital in the 21st century, HUP, 2014).

A.S. Robilliard, "What's New About Income Inequality in Africa?", WIL, 2020

UN General Assembly, Transforming our world : the 2030 Agenda for Sustainable Development, 21 October 2015, A/RES/70/1, available at: https://www.refworld.org/docid/57b6e3e44.html [accessed 3 September 2021]

World Inequality Database. https://wid.world/data/