Returns to Investments in Human Capital, within and across Countries

Preliminary and Incomplete

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1 Introduction

There are vast income differentials across countries, implying that there are strong incentives for individuals from poorer countries to move to richer countries. If these wage differentials are associated with productivity, the strict immigration restrictions that exist in most countries lead to large efficiency losses. But relatively little is known about how cross-country wage differences relate to differences in human capital endowments (as opposed to cross-country differences in the productivity of human capital). The International Income Distribution Data Set (I2D2), which has information on wages and characteristics of individual workers from many less developed countries, is a rich dataset that has the information needed to study these relationships. In particular, we can use the I2D2 data to calculate the wages that similar people earn in different countries. This relates to two important questions that are distinct but closely related. The first question is the extent to which adjustments for cross-country differences in human (and physical) capital endowments can account for differences in income levels (the so-called "levels accounting" question). The second question, which has received much less attention, is the extent to which the incentive to emigrate from poorer countries is related to differences in individual human capital endowments: if immigration restrictions are relaxed, what is the likely skill mix in the marginal migration flow?

Lagakos, Moll, Porzio, and Qian (2015) show that when life-cycle wage profiles are estimated for less-developed countries, the returns to experience are much lower than the returns estimated using data from developed countries. The data set used in this study includes 17 countries, but many of these are developed countries, and no African countries are included. The analysis covers only male, full-time private sector workers who earn wages (measured as labor earnings divided by the number of hours worked). The I2D2 dataset covers many large countries that are not included in the Lagakos, Moll, Porzio, and Qian (2015) study (e.g. Nigeria, Pakistan, Ethiopia, Uganda and Nepal). Our project aims to provide a broader empirical analysis of cross-country differences in the determinants of labor productivity, quantifying the returns to education and experience in different less-developed countries.

We use wage regressions to determine how demographic characteristics affect wages in each country. We can then use this information to calculate the wage gains of moving to a richer country for people with different characteristics, such as education, age, and home country. We can then test if the incentive to move is greater for more skilled workers. The second dimension we will analyze is differences in age profiles across countries. A dynamic migration model would predict that younger workers have the most to gain from migration, in that they have more years to earn the higher wages. However, changes in the age profiles

across countries could provide additional differences in migration patterns. For example, older workers in countries with low returns to experience will have a greater incentive to move than those in countries with high returns to experience.

2 Data description

The International Income Distribution Data Set (I2D2) created by the World Bank is a global harmonized survey database. To create the I2D2, individual surveys were collected from a wide range of countries from many years, and then combined into a single database with consistent variable definitions and classifications. The data are based on regional surveys, sometimes using publicly available data and sometimes using internal World Bank surveys. It includes countries across the world, covering a wide distribution of income levels from across the world. Table 1 shows how many countries in our data are from each region of the world, and Table 2 shows how many countries are in each income level.[1] The I2D2 provides a lot of information on each individual surveyed. For the purposes of this research, where we are interested in the determinants of wage outcomes, we have individual level information on demographics, education, labor force participation, and outcomes.

The I2D2 has data from a wide range of countries. In this paper, we are interested in studying the wage gains to migration for individuals at a specific point in time. Therefore we pick the data closest to the year 2007 for each country to compare wages at this time. We first calculate the average wage in each country, weighted by the sampling weights in the I2D2. Wages are reported in different units for each country, so we convert to monthly wages for each observation. Wages are also reported in local currency, so we convert to 2007 US dollars using PPP exchange rates. Tables 3 and 4 show the average wages for each country in our sample, splitting the countries by income levels. As expected, we see wide variation in average wages, showing the productivity differences across countries that generate strong incentives for migration.

To make sure these numbers seem reasonable, we next compare GDP per capita for each country to the average wages in the I2D2 data.[2] This is shown in Figure 1 for developing countries. In this figure, the blue countries are the low income countries, the gold countries are lower middle income countries, and the pink countries are upper middle income countries. Figure 2 shows the relationship between GDP per capita and I2D2 average wages in developed countries. Both of these plots show a strong correlation between GDP per capita and average monthly income in the I2D2 data.

3 Wage regressions

To understand the determinants of wages in each country, we run wage regressions separately for each country using the I2D2 data:

$$w_{ijt} = \beta_0^j + \beta_1^j a_{ijt} + \beta_2^j a_{ijt}^2 + \beta_3^j a_{ijt}^3 + \beta_4^j a_{ijt}^4 + \beta_5^j ed2_{ijt} + \beta_5^j ed3_{ijt} + \beta_7^j ed4_{ijt} + \beta_8^j u_{ijt} + \beta_9^j male_{ij} + \varepsilon_{ijt}$$

[1] These are divided according to World Bank classifications. Low income is a GNI per capita of less than \$1045 in 2014. Lower middle income is a GNI between \$1,045 and \$4125. Upper middle income is a GNI between \$4,125 and \$12,736. High income is a GNI greater than \$12,736.

[2] GDP per capita data taken from the World Development Indicators.

where a is age, $ed2$ is a dummy variable for having primary education, $ed3$ is a dummy variable for having secondary education, $ed4$ is a dummy variable for having post-secondary education, u is a dummy variable indicating whether or not a person is living in an urban area, and $male$ is a dummy variable for gender.[3] The regressions are weighted using the survey weights in the I2D2 data. In these regressions, wages are calculated in levels. We also run these regressions separately for each education group and gender combination to allow the returns to experience to vary for different genders and education levels. We use the results of this regressions to study the returns to education and experience in different countries.

3.1 Returns to education

We are interested in how the returns to education vary across countries. This tells us about the returns to skills at different productivity countries, as well as informs us about the people most likely to migrate in the case of open borders. For example, in a low income country with strong returns to education, we would see fewer highly skilled migrants than from a similar income country with lower returns to education.

We use the regression results from the previous section to calculate the average wage for a man with primary education ($ed2 = 1$) and a man with post-secondary education ($ed4 = 1$), assuming he is 30 years old and lives in an urban area. We take the ratio of the wage in the higher educated group relative to the wage in the lower educated group. We plot the wage ratio on the y-axis and the average wage for the low educated group on the x-axis to see if there is a relationship between income levels and the returns to education. This is shown in Figure 3 for developing countries and Figure 4 for developed countries. It is hard to see a clear trend in these graphs, but comparing developed to developing countries, we see stronger returns to education in developing countries (ratio of 1.91 versus 1.73). This fits the standard human capital literature that predicts stronger returns to skills in lower income countries where there are fewer people with higher levels of education. Comparing across developing countries, we see a wide variation in the returns to education. The bulk of the data has a wage ratio between 1 and 3. In some countries, people with secondary education have approximately the same wages as those with just a primary education. However, in a large mass of these countries, we also see that people with a secondary education earn 3 times as much as people with a primary education. This implies a different skill mix of immigrants from each of these countries.

3.2 Returns to experience

Next we look at the returns to experience in different countries. This again informs us about who has the greatest incentive to migrate to wealthy countries. In developing countries with strong returns to experience, we would be more likely to see younger immigrants, at least in the context of a static model. If returns to experience are low, then young and old workers earn similar wages at home, meaning that the incentive to migrate for young versus old workers only depends on the returns to experience in destination countries.

To study the returns to experience, we calculate the wages of a 20 and 35 year old in each country, holding all other factors constant. We plot the ratio of age 35 to age 20 wages on the y-axis, and the age 20 wages on the x-axis. This is shown in Figure 5 for developing countries and Figure 6 for developed countries. We do not see a trend between age 20 wages and the returns to experience in developing countries, although we do see wide dispersion in the returns to experience. Most countries have a wage ratio between 1 and around 1.6. This means that in many countries, people earn similar wages at age 20 and age 35. However, in many

[3] The urban variable is not available in all surveys.

countries, we see people earning up to 60% higher wages at age 35. This demonstrates a wide variety in the returns to experience across developing countries. In developed countries, it seems that countries with higher starting wages have stronger returns to experience. This fits with a model where wealthier countries have higher initial wages, but also have more skill intensive jobs that would reward work experience.

We next aim to quantify the shape of wage profile in each country. Looking at men who have a primary education, we show the initial (age 22) earnings, the age of maximum earnings, the maximum earnings, and a measure of the concavity of the wage function. To calculate this last measure, we first plot the expected earnings over the life cycle for a man with this constant set of characteristics. We then take the midpoint of the line between lowest and highest earnings, and calculate the vertical distance between this line and the age-earnings plot. These numbers are in Tables 5-8. Again, we see a wide dispersion across countries, indicating that the returns to experience vary substantially. Comparing the concavity measure across income groups, we see that this is much higher for developed than developing countries.

As another measure of returns to experience, we look at the age profiles in each country. We split this by gender and education, running the regressions separately for each education group and gender. These profiles are shown in Figures 7-9 for low income countries, Figures 10-14 for lower middle income countries, Figures 15-18 for upper middle income countries, and Figures 19-22 for high income countries. Looking across countries, we see stark differences in the returns to experience across countries. This also varies by gender and education within countries.

4 Wage gains from migration

The data show differences in the returns to experience and education across countries. This implies that, not only will immigration incentives vary across countries, the selection of immigrants within a country can also vary substantially. We use the results from these wage regressions to understand the wage gains from migration, focusing on people living in developing countries. We look at this for different education and age levels. In particular, we look at people with a primary and a secondary education, at ages 20 and 35. For each country and group, we calculate the expected wage in the home country. We use CPS data on immigrants to calculate an expected wage for each immigrant in the US. We report the ratio of US wages to home wages. This is in Table 9 for low income countries, Table 10 for lower middle income countries, and Table 11 for upper middle income countries. We see large wage gains from migration, and these vary substantially by country, education, age level. Summarizing all developing countries, we see that the wage premium increases with education at age 20, but is approximately constant by age 35. The wage premium, however, is higher at age 35 than at age 20.

5 Tables and figures

Table 1: Geographic distribution of I2D2 countries

Region	Number of countries
East Asia and the Pacific	9
Europe and Central Asia	31
Latin America and the Caribbean	20
Middle East and North African	7
North America	2
South Asia	6
Sub-Saharan Africa	27

Table 2: Income distribution of I2D2 countries

Income levels	Number of countries
Low income countries	19
Lower middle income countries	33
Upper middle income countries	25
High income countries	25

Low income is a GNI per capita of less than $1045 in 2014. Lower middle income is a GNI between $1,045 and $4125. Upper middle income is a GNI between $4,125 and $12,736. High income is a GNI greater than $12,736.

Table 3: Mean monthly wages, low income and lower middle income countries

Low income countries		Lower middle income countries	
Country	Mean income	Country	Mean income
Afghanistan	225.9922	Armenia	127.9416
Burkina Faso	102.5692	Bangladesh	164.1446
Burundi	239.2378	Bolivia	467.408
Chad	276.3171	Cameroon	149.801
Comoros	301.4598	Cote d'Ivoire	207.5501
Congo, Dem.. Rep.	56.62056	Egypt	480.6925
Ethiopia	202.6712	El Salvador	581.6434
Gambia	502.0413	Georgia	160.1619
Haiti	248.9949	Guyana	366.467
Madagascar	90.25161	Honduras	462.0955
Malawi	150.0082	India	236.8604
Mali	114.0643	Indonesia	226.5659
Mozambique	211.3785	Kenya	279.2249
Nepal	245.1216	Kyrgyz Republic	111.6449
Rwanda	51.80356	Lao PDR	458.6716
Sierra Leone	245.4643	Lesotho	637.2708
Tanzania	1045.69	Mauritania	263.7835
Togo	241.5274	Moldova	253.5121
Uganda	216.4397	Morocco	481.6738
		Nicaragua	402.5176
		Nigeria	465.111
		Pakistan	651.1282
		Papua New Guinea	607.0106
		Philippines	302.5523
		Senegal	281.5808
		Solomon Islands	222.5372
		Sri Lanka	295.822
		Swaziland	661.8338
		Tajikistan	58.50196
		Timor-Leste	222.9179
		Ukraine	326.4458
		West Bank and Gaza	924.0061
		Yemen	438.6499

Mean wages calculated using weighted averages from the I2D2 data.

Table 4: Mean income, upper middle income and developed countries

Upper middle income countries		High income countries	
Country	Mean income	Country	Mean income
Belize	711.2695	Austria	1707.871
Botswana	218.8988	Bahamas	1449.029
Brazil	675.2908	Belgium	1814.764
Bulgaria	230.6358	Canada	2423.17
China	170.1722	Croatia	933.2534
Colombia	493.3741	Estonia	756.5764
Costa Rica	717.2664	Finland	2398.136
Dominican Republic	515.3939	France	1675.651
Ecuador	554.073	Germany	2767.75
Gabon	638.0576	Great Britain	4063.187
Jamaica	801.3754	Greece	1496.901
Jordan	1166.624	Ireland	2177.596
Macedonia	558.9457	Italy	1768.456
Mauritius	591.8023	Latvia	588.2216
Mexico	555.6151	Luxembourg	2963.079
Mongolia	542.4739	Malta	2168.14
Montenegro	743.2758	Netherlands	2800.277
Panama	674.3134	Portugal	1141.813
Paraguay	518.1747	Russia	650.295
Peru	388.3154	Slovak Republic	757.2509
Romania	119.9745	Slovenia	1285.039
Serbia	724.5763	Spain	1602.334
Thailand	588.7296	Trinidad & Tobago	947.9903
Tunisia	85.75849	United States	3162.429
Turkey	831.6036	Uruguay	642.6733

Mean wages calculated using weighted averages from the I2D2 data.

Table 5: Age profile, low income countries

Country	Age 22 earnings	Age of max earnings	Max earnings	Concavity
Afghanistan	250.4391	31	257.3898	-.7367249
Burundi	342.2585	44	412.2353	6.196228
Burkina Faso	166.0005	45	203.6682	8.016724
Chad	261.3369	46	350.2859	8.78009
Comoros	429.5374	45	482.8959	1.464722
Congo, Dem. Rep.	72.70313	43	79.52927	1.80703
Ethiopia	197.3909	49	318.8835	20.32095
Gambia	424.7651	55	592.031	41.6405
Haiti	265.1348	42	364.8868	14.29266
Madagascar	43.88116	55	85.43677	5.8256
Malawi	209.001	55	251.1006	9.059967
Mali	266.5327	45	314.1222	6.600006
Mozambiquw	235.8478	55	326.7574	17.13065
Nepal	286.5178	52	383.0356	10.19461
Rwanda	68.68398	55	102.1395	7.10907
Sierra Leone	211.0101	54	274.3539	-2.363174
Tanzania	809.4163	31	952.1625	46.10925
Togo	260.9692	55	354.8029	-4.213837
Uganda	261.945	48	378.5781	16.28394

Results based on a regression of monthly wages using I2D2 data. For men with a primary education, we calculated age 22 earnings, the age of maximum earnings, the maximum earnings, and a concavity measure. To calculate the concavity measure, we first found the midpoint of the line between minimum and maximum earnings. The measure of concavity is the vertical distance from this point to the age-earnings plot.

Table 6: Age profile, lower middle income countries

Country	Age 22 earnings	Age of max earnings	Max earnings	Concavity
Armenia	167.5715	33	180.3491	5.060043
Bangladesh	222.1999	53	273.425	7.53331
Bolivia	393.174	51	527.5457	30.43979
Cameroon	223.8991	43	291.5858	19.2554
Cote d'Ivoire	308.8658	51	428.2715	12.86176
Egypt	458.6433	55	674.2324	-39.98932
El Salvador	523.8503	47	719.405	35.98212
Georgia	184.6427	35	222.3877	12.33281
Guyana	384.5364	32	417.9394	9.600006
Honduras	532.8625	48	709.4459	49.2674
India	298.9925	53	437.0175	7.451111
Indonesia	292.8637	39	323.4095	7.443848
Kenya	369.6801	48	519.7272	21.68784
Kyrgyz Republic	143.4972	46	157.8722	2.437225
Lao PDR	596.5192	24	601.1191	-2.756897
Lesotho	621.376	51	708.5279	1.353882
Mauritania	300.028	51	399.6582	20.20734
Moldova	320.2812	22	320.2812	-5.471954
Morocco	496.7854	50	763.4373	36.01044
Nicaragua	358.2938	48	460.5456	19.17542
Nigeria	401.0181	53	662.8668	25.52563
Pakistan	524.9171	53	700.4275	-8.228027
Papua New Guinea	981.3265	41	1086.113	27.55499
Philippines	285.0528	55	368.9618	20.88272
Senegal	387.8194	53	513.0059	23.07129
Solomon Islands	227.9614	51	330.5506	14.02115
Sri Lanka	288.0853	47	381.5895	20.20786
Swaziland	429.9459	51	786.8049	85.31476
Tajikistan	90.23772	29	93.91851	1.007912
Timor-Leste	177.0369	55	248.3562	3.766815
Ukraine	322.2061	39	350.2754	9.557831
West Bank and Gaza	776.5794	55	1036.188	81.64374
Yemen	311.2798	55	486.9833	42.98163

Results based on a regression of monthly wages using I2D2 data. For men with a primary education, we calculated age 22 earnings, the age of maximum earnings, the maximum earnings, and a concavity measure. To calculate the concavity measure, we first found the midpoint of the line between minimum and maximum earnings. The measure of concavity is the vertical distance from this point to the age-earnings plot.

Table 7: Age profile, upper middle income countries

Country	Age 22 earnings	Age of max earnings	Max earnings	Concavity
Belize	743.8815	45	1002.411	55.41376
Botswana	86.39073	51	264.8633	20.81047
Brazil	574.343	55	942.2819	113.8828
Bulgaria	225.7899	42	263.762	8.261429
China	254.4118	43	301.5221	7.209808
Colombia	373.9903	52	549.5623	48.58029
Costa Rica	599.2236	55	766.4728	55.86517
Dominican Republic	454.6957	54	639.136	45.72217
Ecuador	474.656	55	649.702	47.87732
Gabon	490.701	51	919.4908	23.99078
Jamaica	720.3168	55	954.9383	-18.77704
Jordan	959.0699	55	1545.043	15.91736
Macedonia	472.5867	55	539.6088	-2.303467
Mauritius	464.8272	55	828.9666	28.85809
Mexico	452.7021	49	652.3237	46.33447
Mongolia	464.2274	46	563.1785	33.81958
Montenegro	715.2286	47	797.538	7.068909
Panama	572.5323	54	821.5261	10.48193
Paraguay	429.9227	45	625.6071	46.71942
Peru	342.7836	48	450.6967	26.44443
Romania	106.0918	42	135.065	8.619736
Serbia	598.8956	55	752.0685	48.81812
Thailand	551.8201	51	982.1195	50.48663
Tunisia	60.89835	52	96.29412	3.849884
Turkey	696.0215	44	1032.259	72.20148

Results based on a regression of monthly wages using I2D2 data. For men with a primary education, we calculated age 22 earnings, the age of maximum earnings, the maximum earnings, and a concavity measure. To calculate the concavity measure, we first found the midpoint of the line between minimum and maximum earnings. The measure of concavity is the vertical distance from this point to the age-earnings plot.

Table 8: Age profile, high income countries

Country	Age 22 earnings	Age of max earnings	Max earnings	Concavity
Austria	1448.54	55	2108.252	130.0166
Bahamas	1243.818	51	1685.391	144.366
Belgium	1295.108	54	2055.814	260.5232
Canada	1671.848	48	3200.042	461.48
Croatia	829.9847	43	1060.682	58.00073
Estonia	727.9637	32	958.7971	66.17438
Finland	1603.749	54	2879.643	382.6938
France	1099.672	55	2116.44	207.1295
Germany	1716.654	53	3277.303	527.0327
Great Britain	3363.636	40	4780.158	486.377
Greece	984.9113	52	1852.114	210.6937
Ireland	1694.762	55	2643.615	363.1301
Italy	1241.647	55	2110.739	205.1558
Latvia	595.2577	32	750.9131	45.94354
Luxembourg	2017.591	55	4019.092	257.9824
Malta	1711.63	54	2341.128	251.9243
Netherlands	1853.238	53	3374.24	535.9922
Portugal	888.1832	53	1575.81	160.5602
Russia	777.235	32	844.2264	14.23962
Slovak Republic	643.4805	39	853.2566	72.63794
Slovenia	844.4456	47	1329.136	125.0919
Spain	1183.777	55	1895.62	164.8625
Trinidad & Tobago	765.8745	49	1415.78	172.7726
United States	1706.079	49	3656.526	619.7878
Uruguay	435.9277	53	765.2617	79.14484

Results based on a regression of monthly wages using I2D2 data. For men with a primary education, we calculated age 22 earnings, the age of maximum earnings, the maximum earnings, and a concavity measure. To calculate the concavity measure, we first found the midpoint of the line between minimum and maximum earnings. The measure of concavity is the vertical distance from this point to the age-earnings plot.

Table 9: Ratio, wages to home wages, low income countries

	Primary education		Secondary education	
Country	Age 20	Age 35	Age20	Age 35
Afganistan	8.959101	26.94355	17.04673	36.04506
Burkina Faso	24.94499	56.97451	26.16955	47.3152
Burundi	11.14598	28.37164	12.19729	23.5541
Chad	10.96846	27.16359	15.93894	28.89545
Comoros	6.252685	17.97642	9.767197	19.98537
Congo, Dem. Rep.	32.40182	91.74215	59.1151	117.6579
Ethiopia	26.16712	41.47879	22.37503	33.53042
Gambia	6.921493	15.49609	10.54113	17.31617
Haiti	12.15536	26.32229	16.13119	26.66561
Madagascar	38.93009	84.23273	107.3134	139.6218
Malawi	16.73732	42.11359	20.84666	39.23941
Mali	14.50948	37.00585	15.90007	30.73948
Mozambique	19.20081	38.59029	18.99125	31.92544
Nepal	11.38748	27.59514	15.13915	27.38866
Rwanda	69.30173	132.7162	62.94549	104.6817
Sierra Leone	14.13419	37.41876	20.57378	39.46634
Tanzania	2.448126	6.239383	5.879135	9.907596
Togo	9.50291	33.34116	15.04634	36.75977
Uganda	15.89441	31.91442	16.5565	27.46785

Wages in the US are calculated using wage regressions from the CPS data on immigrants. Home wages calculated using wage regressions from I2D2 data.

Table 10: Ratio, US to home wages, lower middle income countries

	Primary education		Secondary education	
Country	Age 20	Age 35	Age 20	Age 35
Armenia	13.19585	37.54656	25.85237	51.36581
Bangladesh	16.1734	39.97551	19.71101	36.73306
Bolivia	9.341312	20.34474	11.24571	19.1137
Cameroon	16.15362	33.42682	20.12872	32.61292
Cote d'Ivoire	10.45514	24.74674	13.93996	24.73555
Egypt	5.828919	15.14657	9.771767	18.05887
El Salvador	6.333813	13.92041	8.326962	13.9629
Georgia	19.24993	41.47765	25.14961	41.56788
Guyana	7.319557	19.78973	11.45476	22.17827
Honduras	7.94814	15.79602	8.40182	13.78861
India	12.332	27.81515	14.57569	25.53054
Indonesia	9.887548	26.88016	14.67834	28.73343
Kenya	12.63356	24.99636	11.73709	19.82065
Kyrgyz Republic	18.14444	51.70676	29.73335	60.12948
Lao PDR	4.427359	14.58968	7.205228	16.67187
Lesotho	5.372646	17.00443	6.564393	14.59298
Mauritania	10.44316	24.20624	14.69203	25.34354
Moldova	7.693028	28.0228	13.08741	33.41473
Morocco	7.068102	14.38855	8.83863	14.12389
Nicaragua	8.148381	20.02007	12.0096	21.56857
Nigeria	9.481256	18.29063	11.11935	17.35596
Pakistan	4.144922	11.4779	8.163659	15.73387
Papua New Guinea	2.856402	8.661384	4.094534	8.804137
Philippines	12.34293	28.13329	15.59968	27.16137
Senegal	7.851342	18.86692	11.28738	19.98388
Solomon Islands	11.84341	26.43457	20.12857	32.02237
Sri Lanka	13.10669	28.01746	15.35592	25.89985
Swaziland	15.76125	17.32704	10.64624	13.75997
Tajikistan	28.85595	83.9404	48.13839	99.12157
Timor-Leste	19.0714	38.78573	27.98455	42.64722
Ukraine	8.903369	24.34306	13.47348	26.44931
West Bank and Gaza	3.18254	7.840742	5.570847	9.695575
Yemen	11.03864	21.19426	14.58579	21.86929

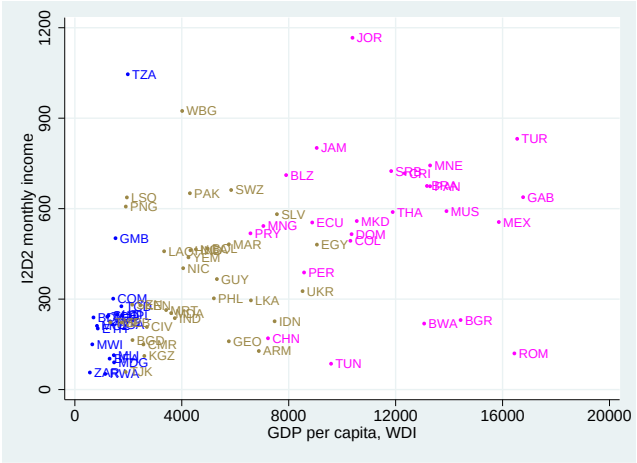
Wages in the US are calculated using wage regressions from the CPS data on immigrants. Home wages calculated using wage regressions from I2D2 data.

Table 11: Ratio, US to home wages, upper middle income countries

	Primary education		Secondary education	
Country	Age 20	Age 35	Age 20	Age 35
Belize	4.493484	9.763465	5.865101	9.76173
Botswana	-536.3115	70.00542	56.45816	50.02272
Brazil	8.705776	12.84483	8.002956	11.14664
Bulgaria	12.45532	32.33226	19.10822	35.77099
China	10.15971	27.13314	16.63253	31.65755
Colombia	10.96341	20.00071	12.17832	18.52589
Costa Rica	5.543715	12.55436	7.452193	12.73716
Dominican Republic	6.959762	15.37691	9.714124	16.1237
Ecuador	6.932038	15.6381	9.198437	15.7185
Gabon	8.733419	15.58114	8.528736	13.27511
Jamaica	3.940688	9.958812	6.315627	11.4569
Jordan	2.853283	6.547978	4.64536	7.676097
Macedonia	6.008358	17.04041	9.133245	18.50334
Mauritius	11.30471	16.46132	10.43403	14.37802
Mexico	8.388587	16.4316	9.842142	15.53991
Mongolia	8.566415	18.77152	9.71439	16.80689
Montenegro	3.692775	10.98551	5.775229	12.18173
Panama	6.486832	14.85436	7.653975	13.56126
Paraguay	8.739489	16.17992	10.47925	15.73864
Peru	9.263467	21.02948	12.84466	21.84433
Romania	36.2596	74.91194	42.42594	69.78391
Serbia	5.515681	12.90218	7.391367	12.9784
Thailand	11.01021	15.51065	7.977206	11.71949
Tunisia	77.43623	136.1825	74.68679	115.5407
Turkey	4.824134	9.170883	6.443715	9.548391

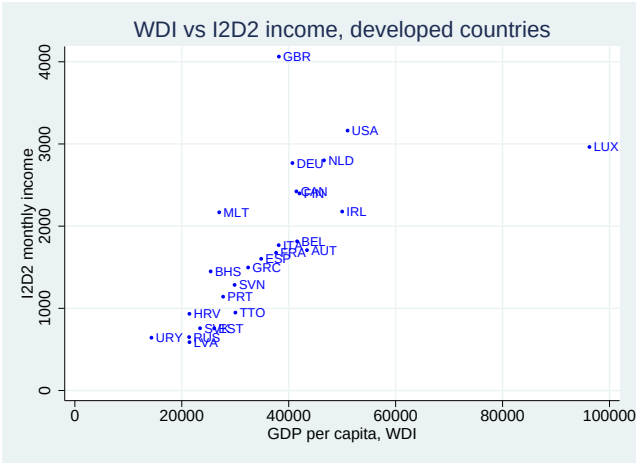
Wages in the US are calculated using wage regressions from the CPS data on immigrants. Home wages calculated using wage regressions from I2D2 data.

Figure 1: Average wages (I2D2) and GDP per capita in developing countries



GDP per capita taken from the World Development indicators. Average wages is the average monthly income in each country in the I2D2 data. Blue countries are classified as low income, gold countries are classified as lower middle income, and pink countries are classified as upper middle income.

Figure 2: Average wages (I2D2) and GDP per capita in developed countries

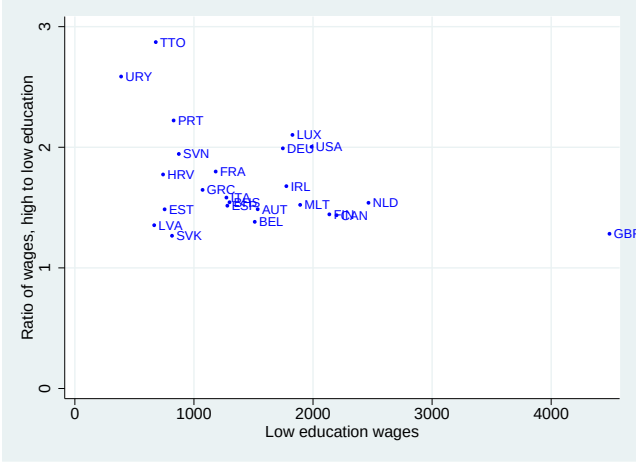


GDP per capita taken from the World Development indicators. Average wages is the average monthly income in each country in the I2D2 data.

Figure 3: Returns to education, developing countries

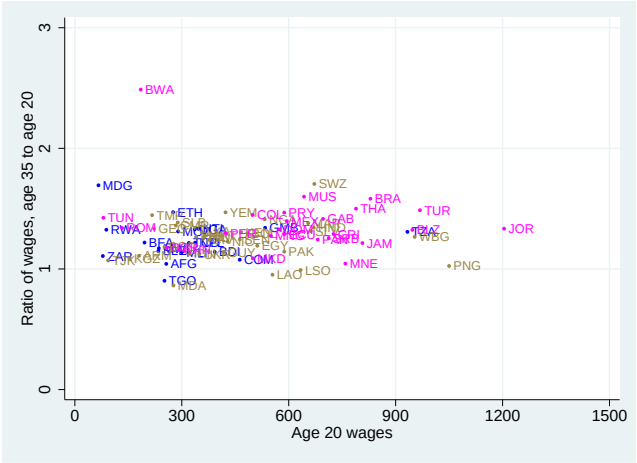
X-axis is average monthly wages in each country for a 30 year old male with a primary education. Y-axis is the ratio of wages for this person with a secondary education relative to a primary education. Blue countries are low-income, gold countries are lower middle income, and pink countries are upper middle income countries.

Figure 4: Returns to education, developed countries



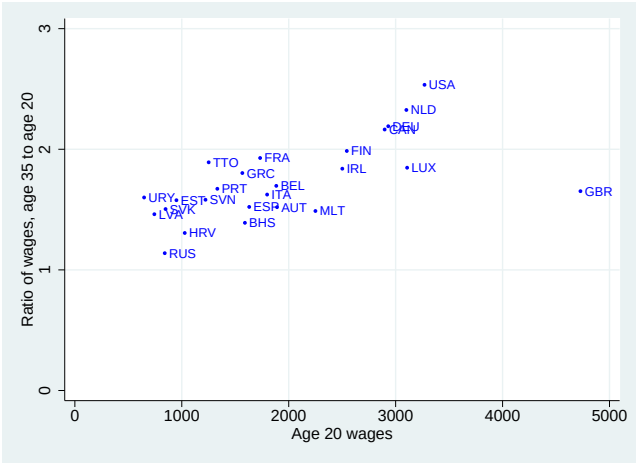
X-axis is average monthly wages in each country for a 30 year old male with a primary education. Y-axis is the ratio of wages for this person with a secondary education relative to a primary education.

Figure 5: Returns to experience, developing countries



X-axis is average monthly wages in each country for a 20 year old male with a primary education. Y-axis is the ratio of wages for this person with at age 35 relative to age 20 wages. Blue countries are low-income, gold countries are lower middle income, and pink countries are upper middle income countries.

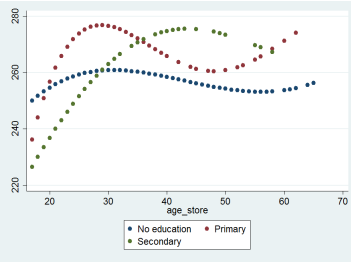
Figure 6: Returns to experience, developed countries



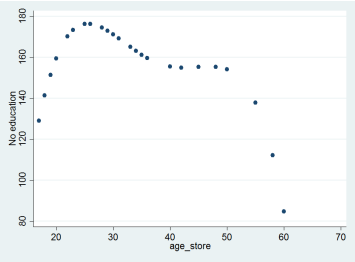
X-axis is average monthly wages in each country for a 20 year old male with a primary education. Y-axis is the ratio of wages for this person with at age 35 relative to age 20 wages.

Figure 7: Wage profile in low income countries(1)

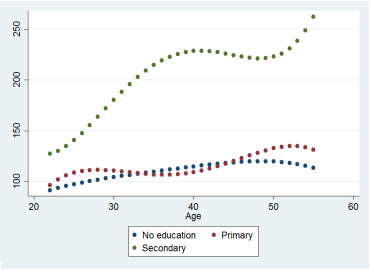
(a) Afghanistan, men



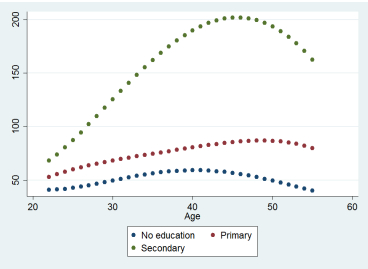
(b) Afghanistan, women



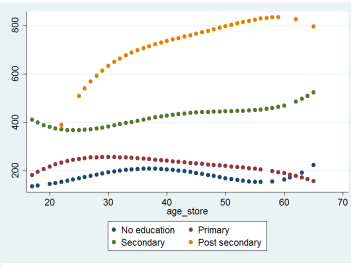
(c) Burkina Faso, men



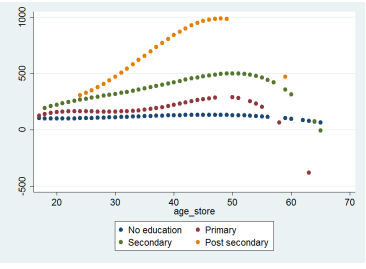
(d) Burkina Faso, women



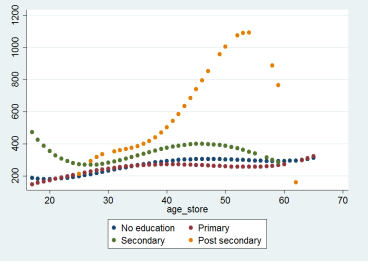
(e) Burundi, men



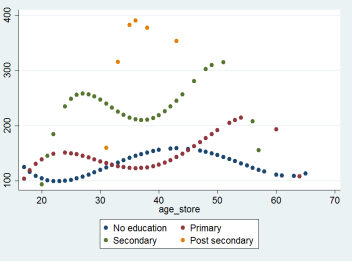
(f) Burundi, women



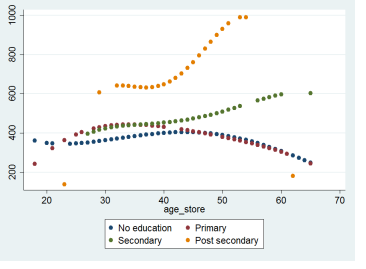
(g) Chad, men



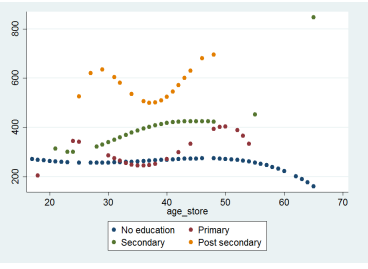
(h) Chad, women



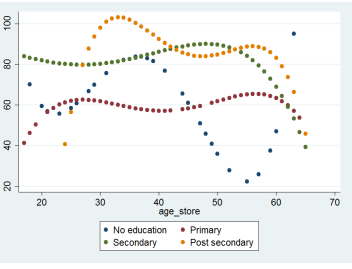
(i) Comoros, men



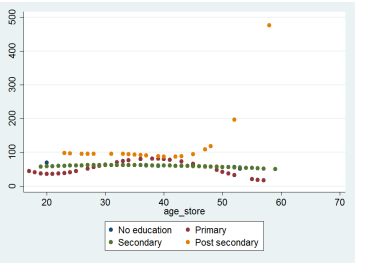
(j) Comoros, women



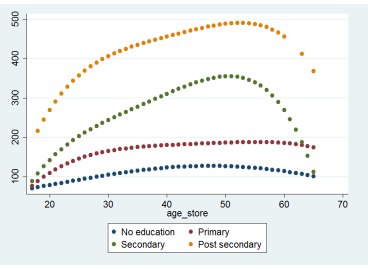
(k) Congo, Dem Rep, men



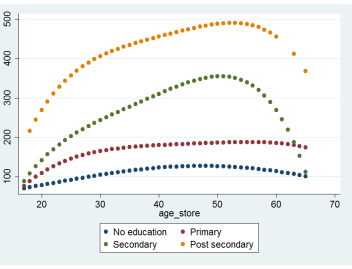
(l) Congo, Dem. Rep., women



(m) Ethiopia, men



(n) Ethiopia, women



(o) Gambia, men

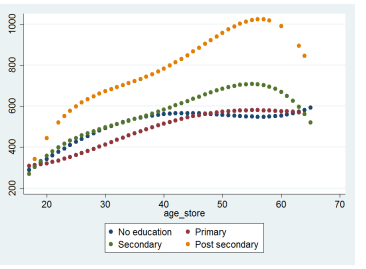
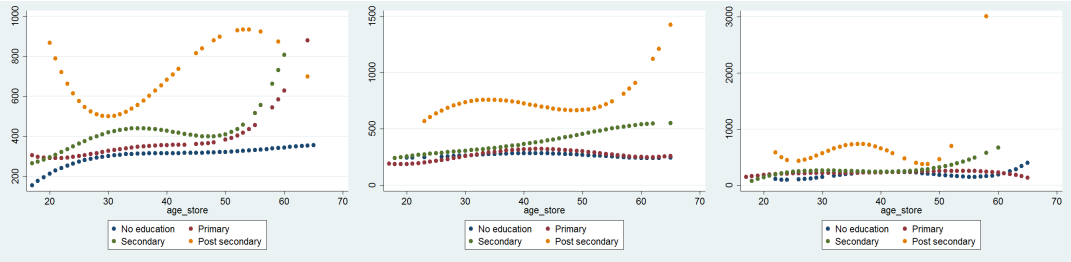


Figure 8: Wage profile in low income countries (2)

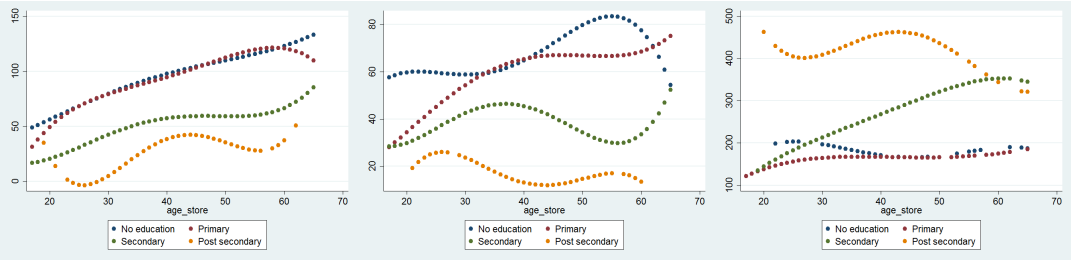
(a) Gambia, women



(b) Haiti, men

(c) Haiti, women

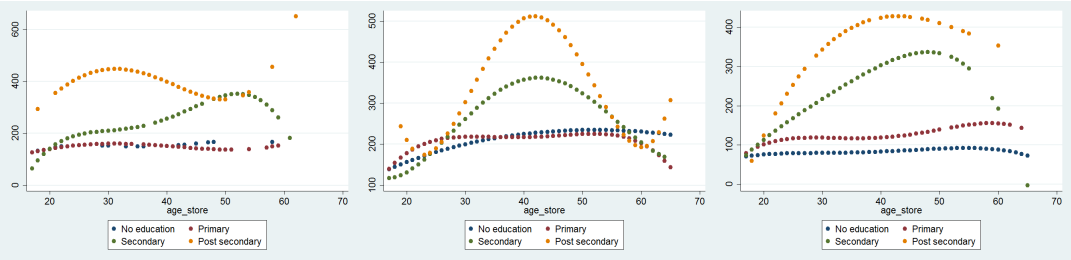
(d) Madagascar, men



(e) Madagascar, women

(f) Malawi, men

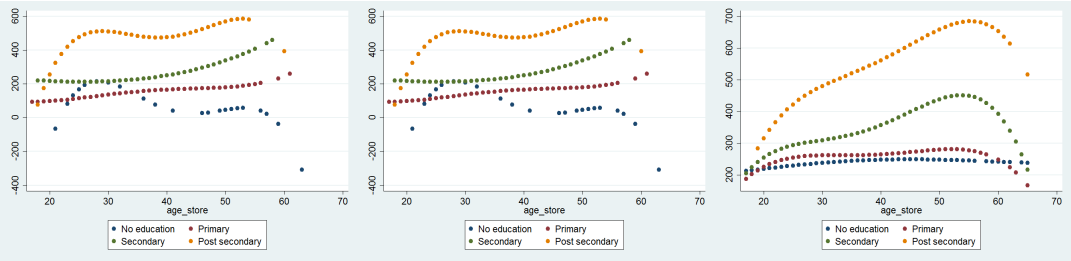
(g) Malawi, women



(h) Mali, men

(i) Mali, women

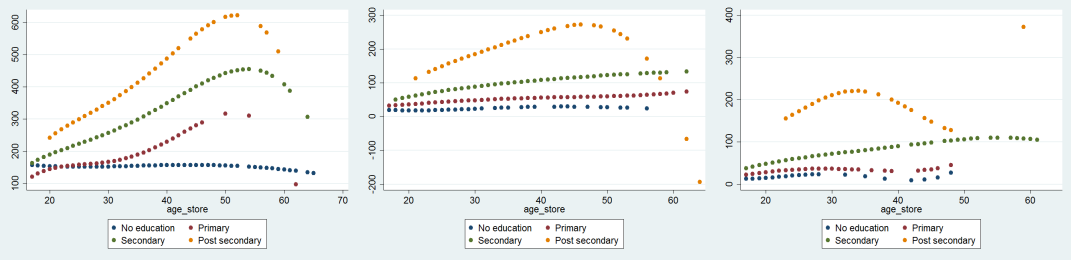
(j) Mozambique, men



(k) Mozambique, women

(l) Nepal, men

(m) Nepal, women

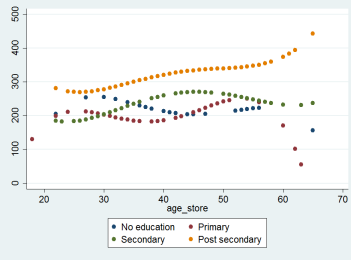


(n) Rwanda, men

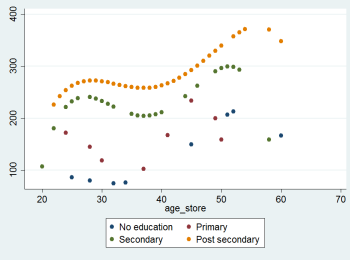
(o) Rwanda, women

Figure 9: Wage profile in low income countries (3)

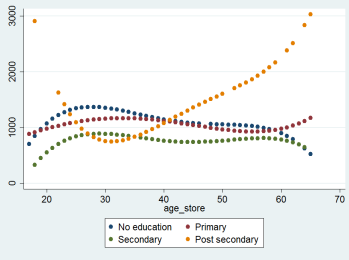
(a) Sierra Leone, men



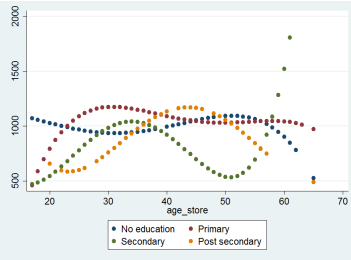
(b) Sierra Leone, women



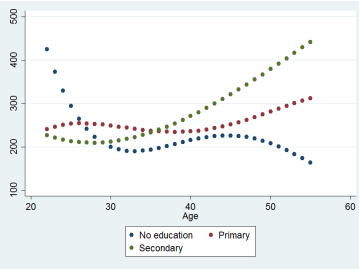
(c) Tanzania, men



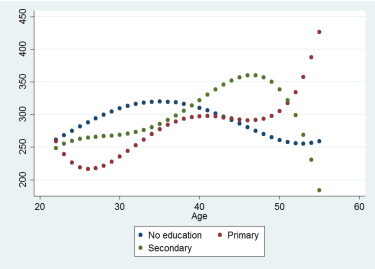
(d) Tanzania, women



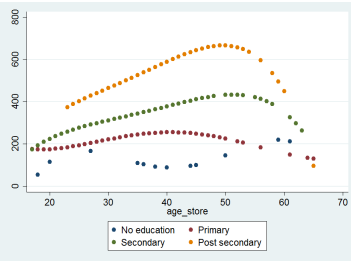
(e) Togo, men



(f) Togo, women



(g) Uganda, men



(h) Uganda, women

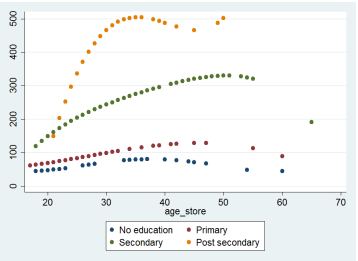
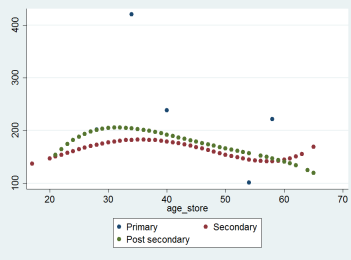
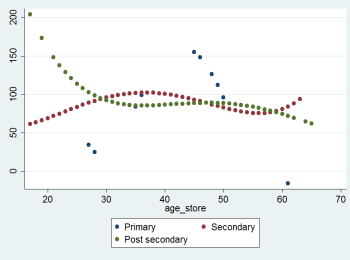


Figure 10: Wage profile in lower-middle income countries (1)

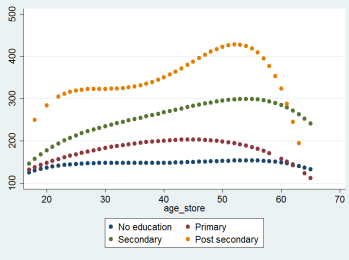
(a) Armenia, men



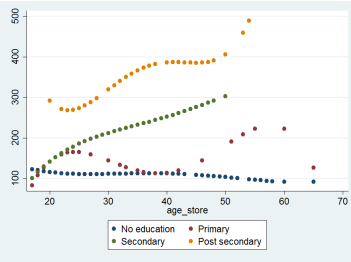
(b) Armenia, women



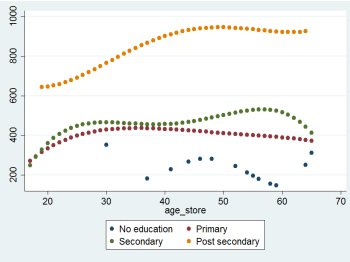
(c) Bangladesh, men



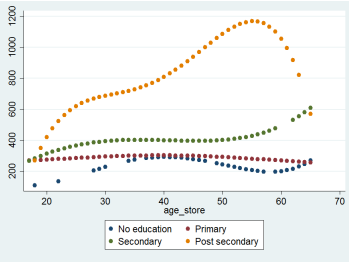
(d) Bangladesh, women



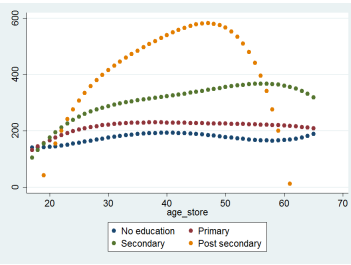
(e) Bolivia, men



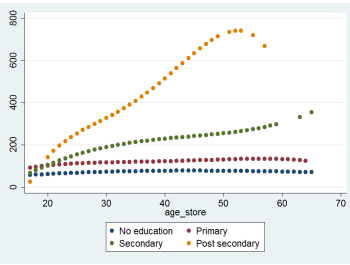
(f) Bolivia, women



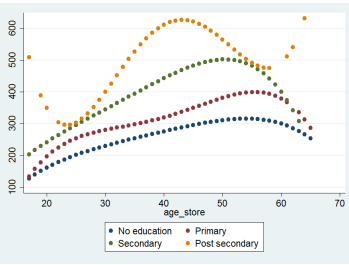
(g) Cameroon, men



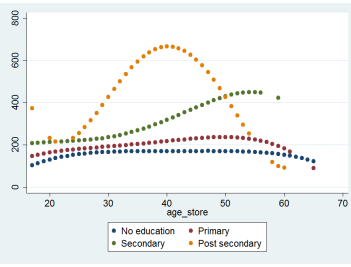
(h) Cameroon, women



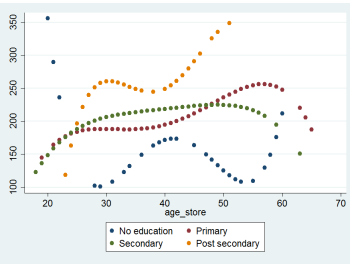
(i) Cote d'Ivoire, men



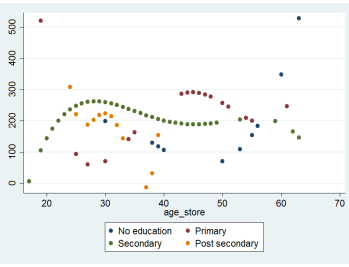
(j) Cote d'Ivoire, women



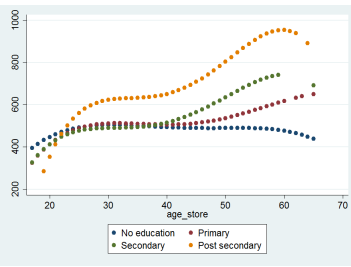
(k) East Timor, men



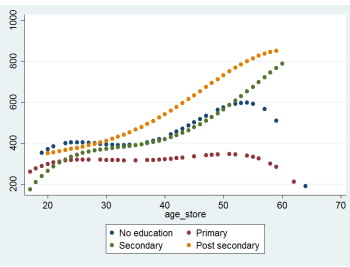
(l) East Timor, women



(m) Egypt, men



(n) Egypt, women



(o) El Salvador, men

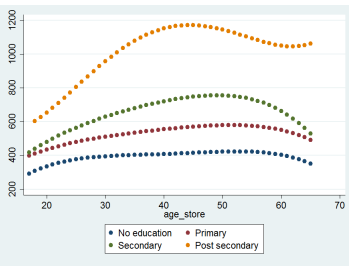
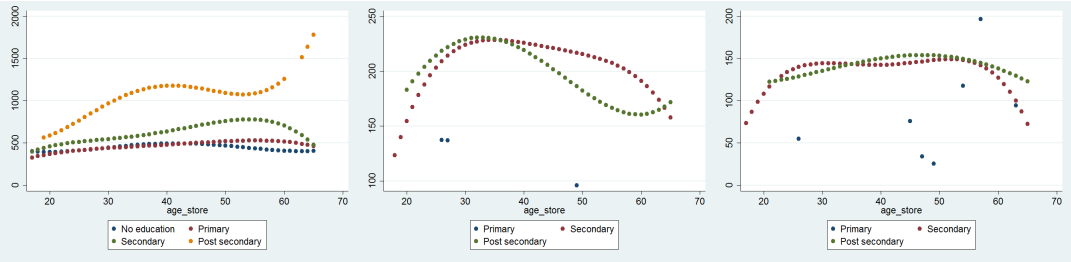


Figure 11: Wage profile in lower-middle income countries (2)

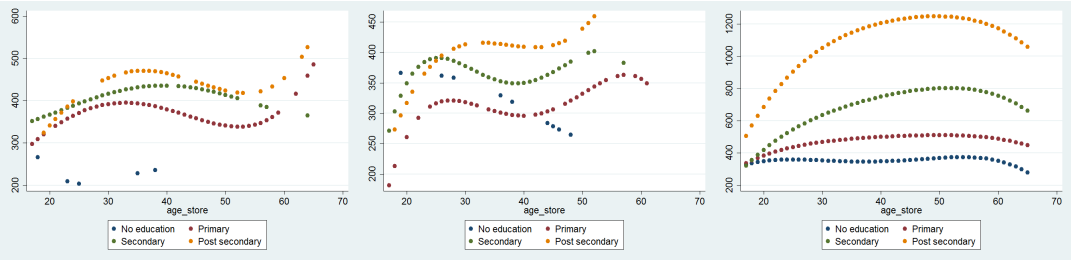
(a) El Salvador, women



(b) Georgia, men

(c) Georgia, women

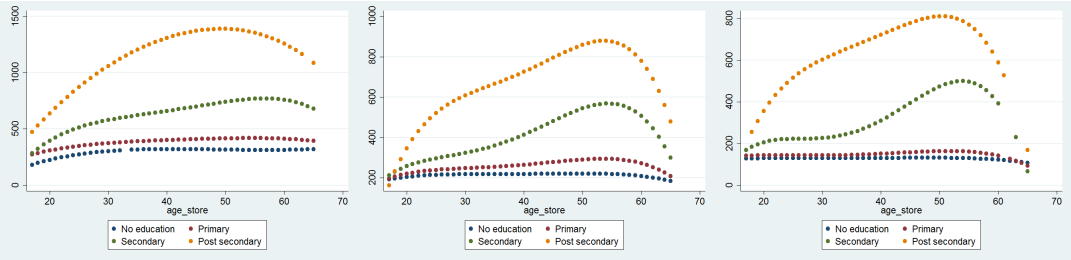
(d) Guyana, men



(e) Guyana, women

(f) Honduras, men

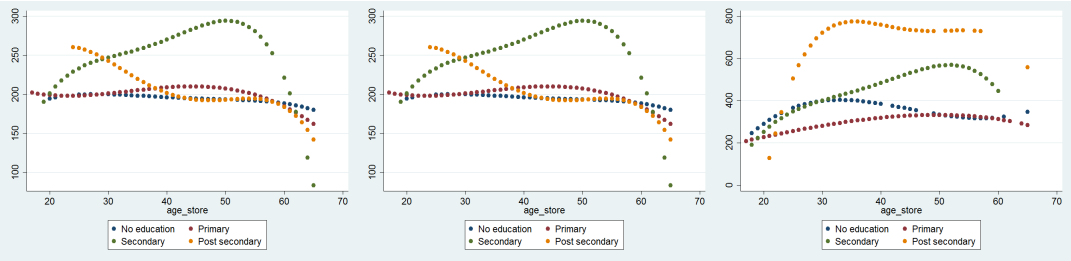
(g) Honduras, women



(h) India, men

(i) India, women

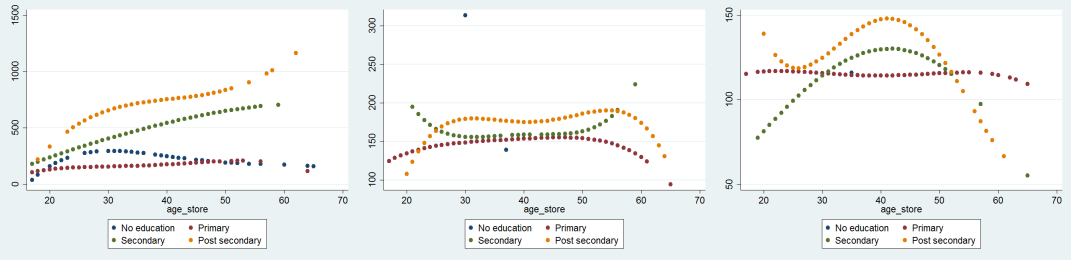
(j) Indonesia, men



(k) Indonesia, women

(l) Kenya, men

(m) Kenya, women

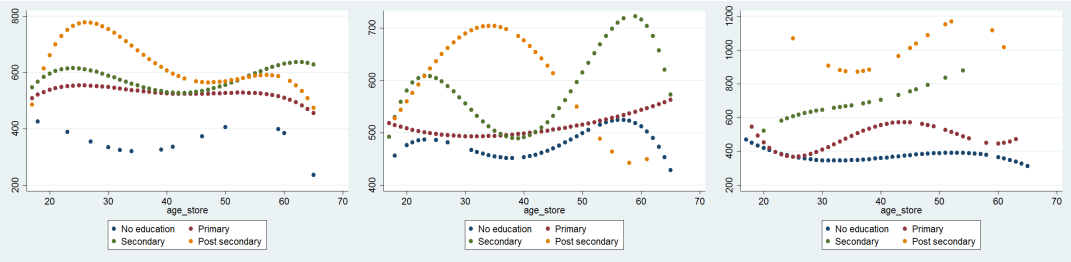


(n) Kyrgyz Republic, men

(o) Kyrgyz Republic, women

Figure 12: Wage profile in lower-middle income countries (3)

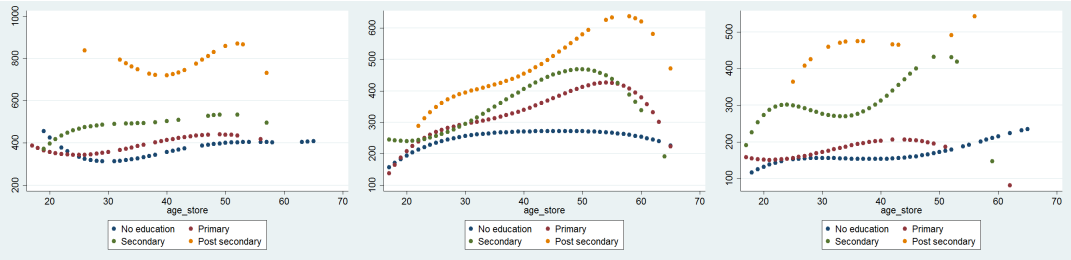
(a) Lao PDR, men



(b) Lao PDR, women

(c) Lesotho, men

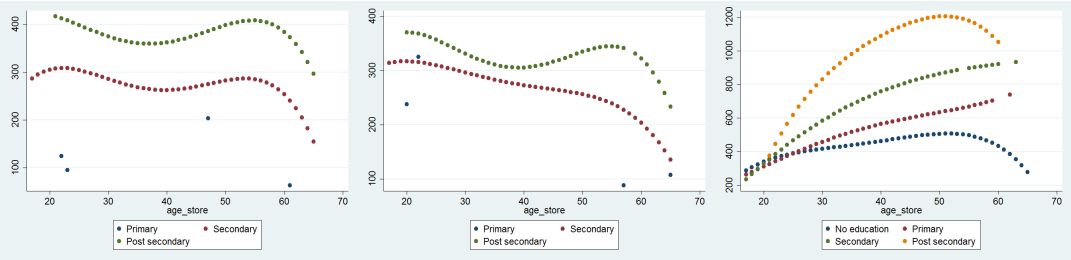
(d) Lesotho, women



(e) Mauritania, men

(f) Mauritania, women

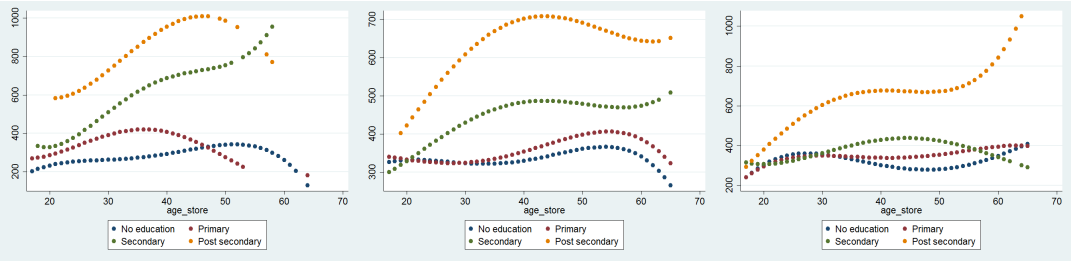
(g) Moldova, men



(h) Moldova, women

(i) Morocco, men

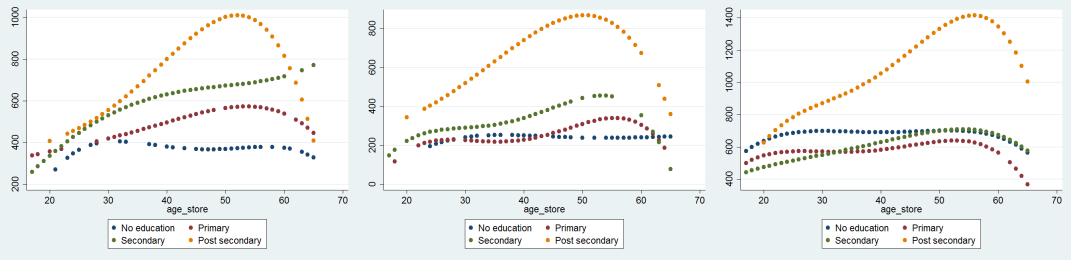
(j) Morocco, women



(k) Nicaragua, men

(l) Nicaragua, women

(m) Nigeria, men

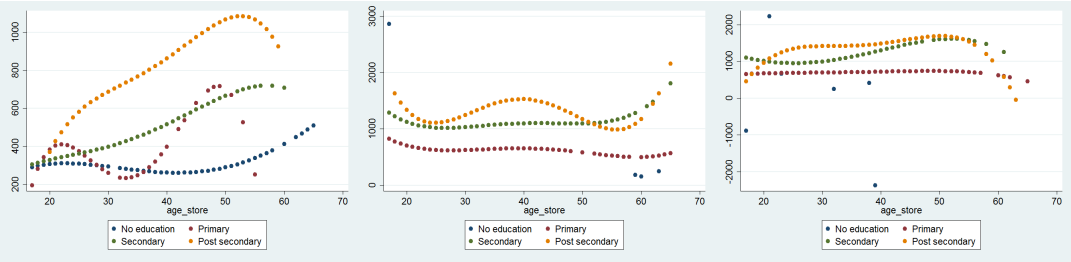


(n) Nigeria, women

(o) Pakistan, men

Figure 13: Wage profile in lower-middle income countries (4)

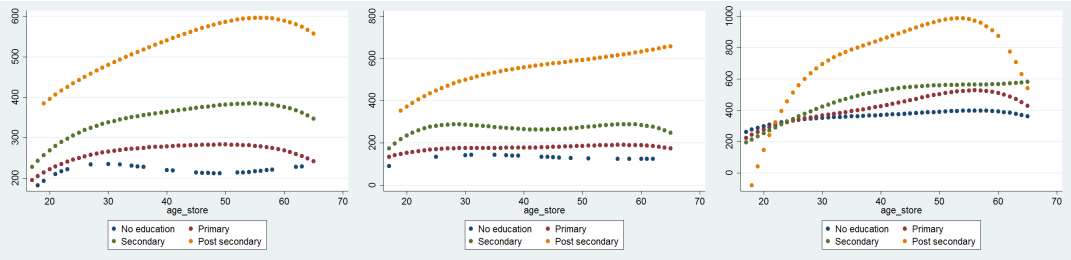
(a) Pakistan, women



(b) Papua New Guinea, men

(c) Papua New Guinea, women

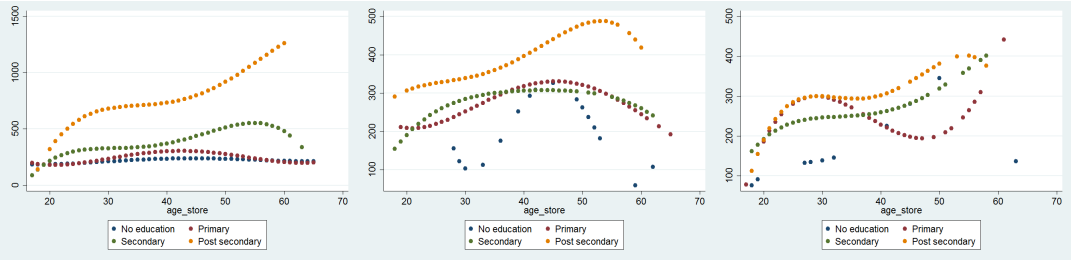
(d) Philippines, men



(e) Philippines, women

(f) Senegal, men

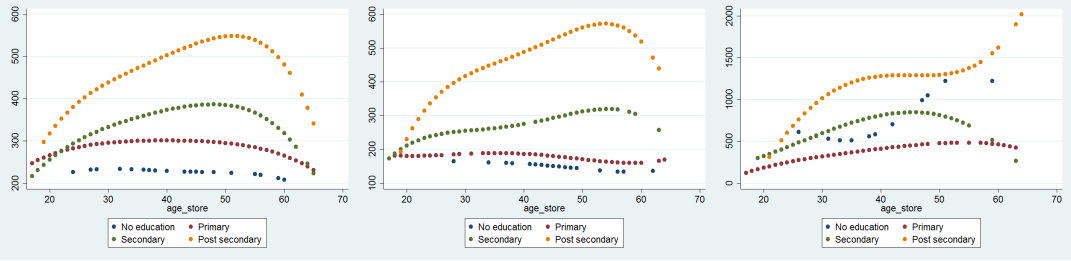
(g) Senegal, women



(h) Solomon Islands, men

(i) Solomon Islands, women

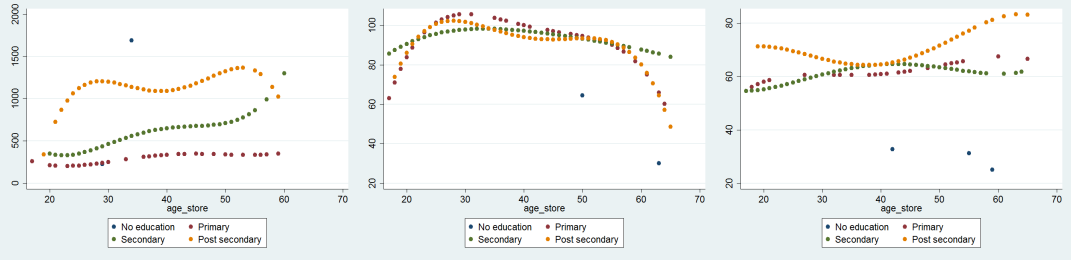
(j) Sri Lanka, men



(k) Sri Lanka, women

(l) Swaziland, men

(m) Swaziland, women

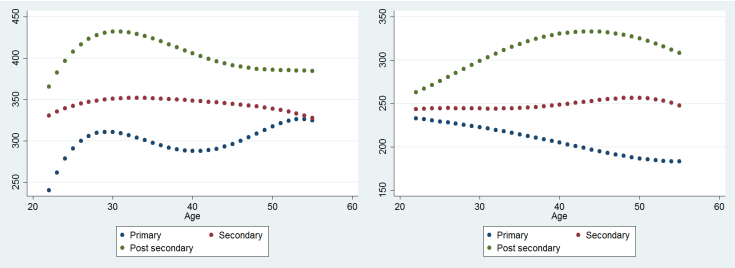


(n) Tajikistan, men

(o) Tajikistan, women

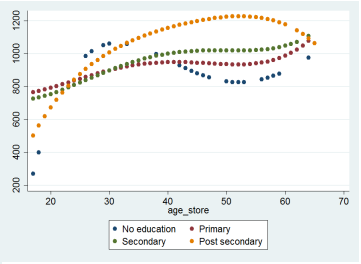
Figure 14: Wage profile in lower-middle income countries(5)

(a) Ukraine, men

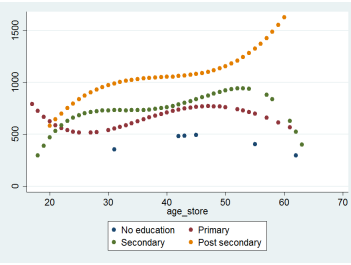


(b) Ukraine, women

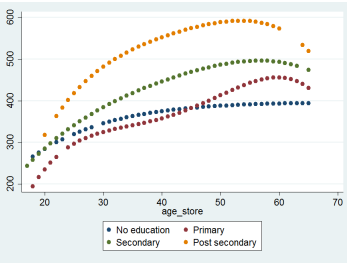
(c) West Bank and Gaza, men



(d) West Bank and Gaza, women



(e) Yemen, men



(f) Yemen, women

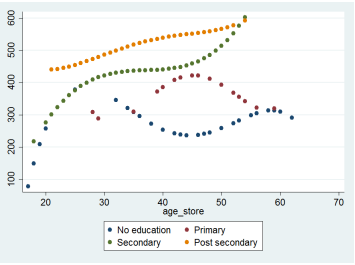
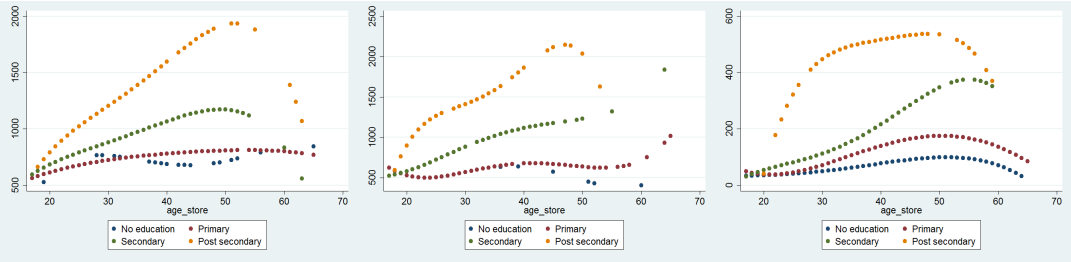


Figure 15: Wage profile in upper middle income countries (1)

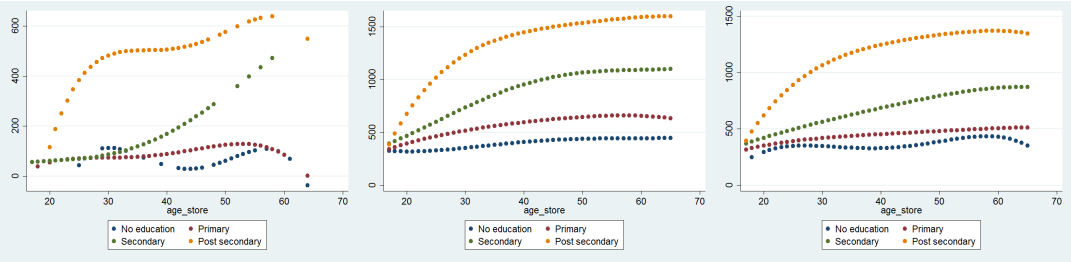
(a) Belize, men



(b) Belize, women

(c) Botswana, men

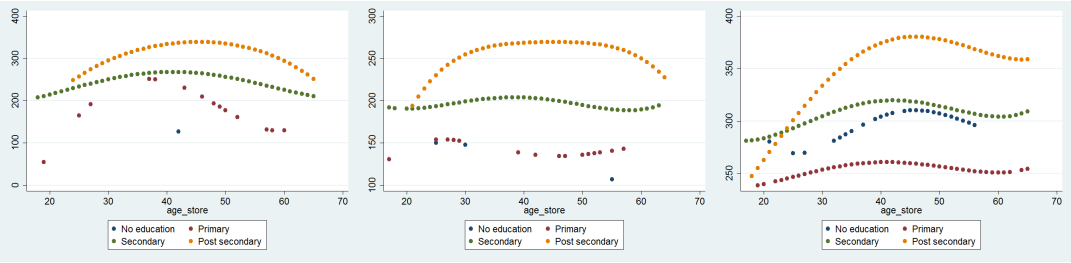
(d) Botswana, women



(e) Brazil, men

(f) Brazil, women

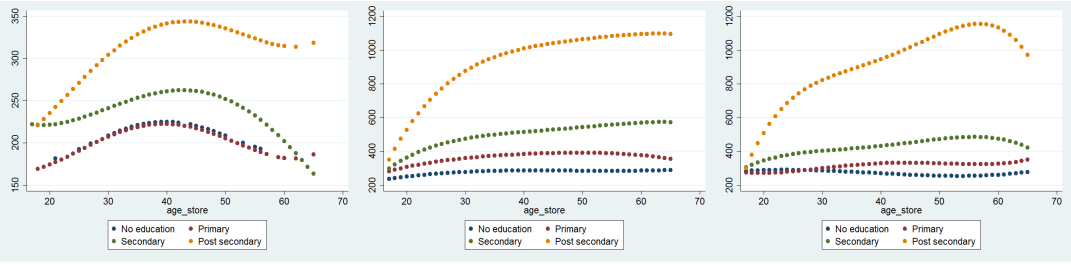
(g) Bulgaria, men



(h) Bulgaria, women

(i) China, men

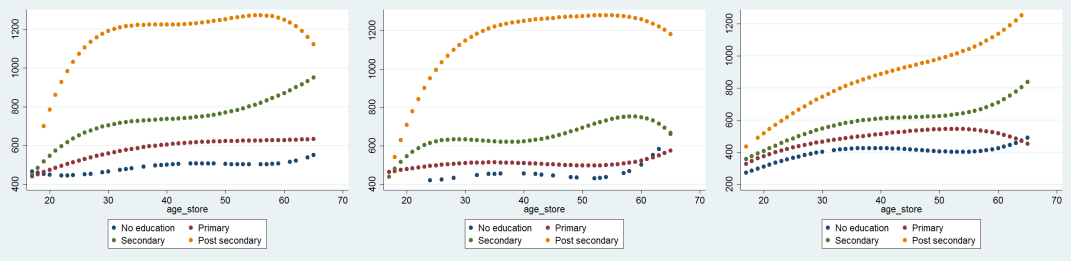
(j) China, women



(k) Colombia, men

(l) Colombia, women

(m) Costa Rica, men

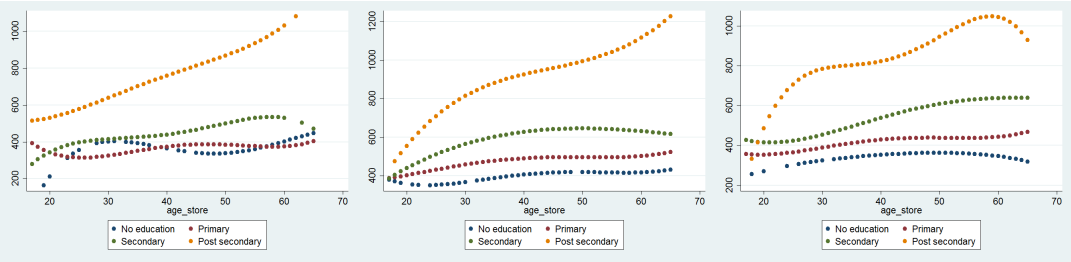


(n) Costa Rica, women

(o) Dominican Republic, men

Figure 16: Wage profile in upper middle income countries (2)

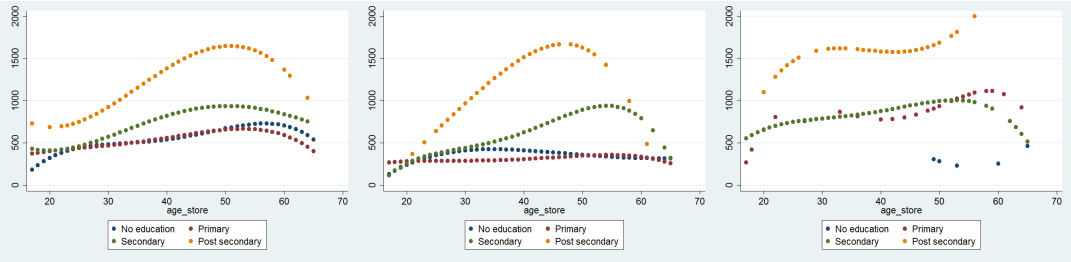
(a) Dominican Republic, women



(b) Ecuador, men

(c) Ecuador, women

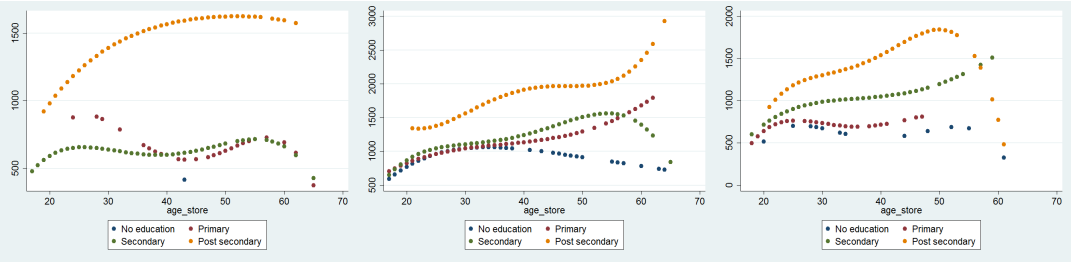
(d) Gabon, men



(e) Gabon, women

(f) Jamaica, men

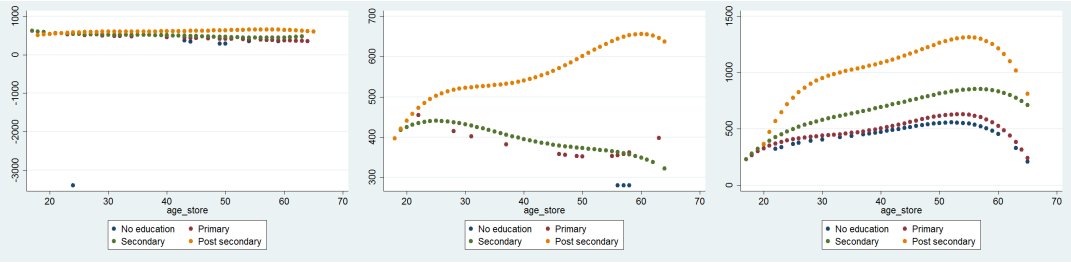
(g) Jamaica, women



(h) Jordan, men

(i) Jordan, women

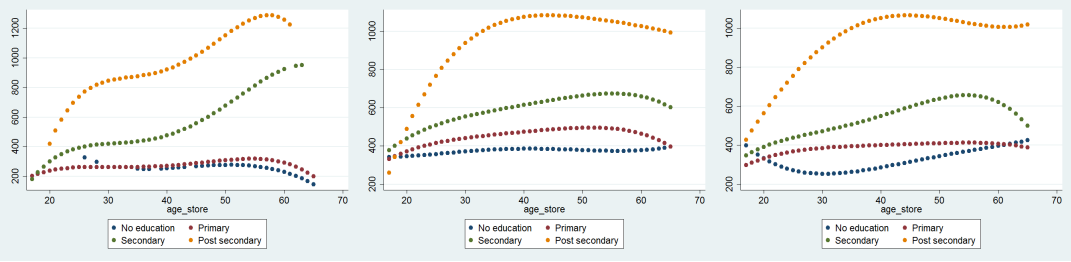
(j) Macedonia, men



(k) Macedonia, women

(l) Mauritius, men

(m) Mauritius, women

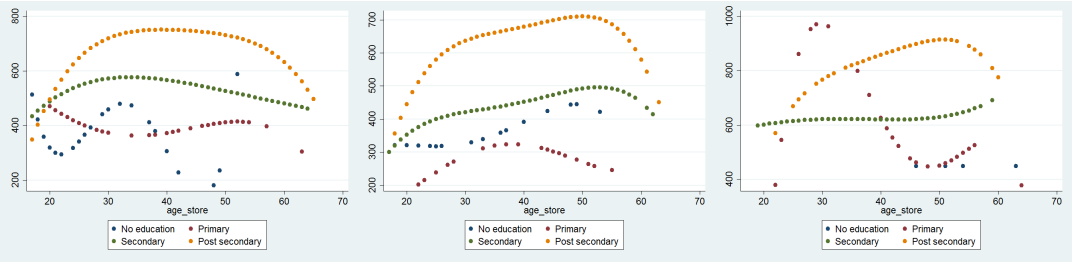


(n) Mexico, men

(o) Mexico, women

Figure 17: Wage profile in upper middle income countries (3)

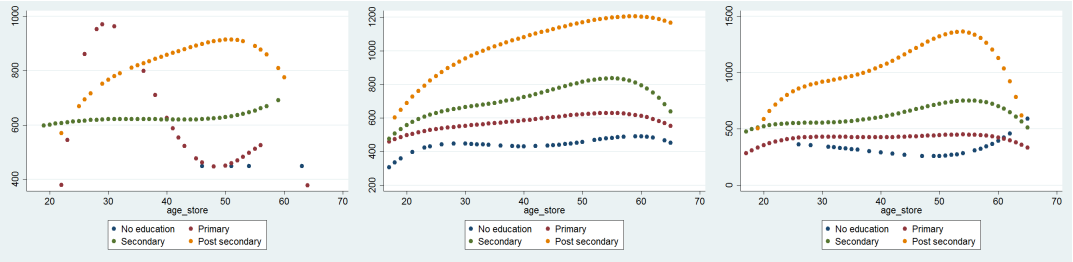
(a) Mongolia, men



(b) Mongolia, women

(c) Montenegro, men

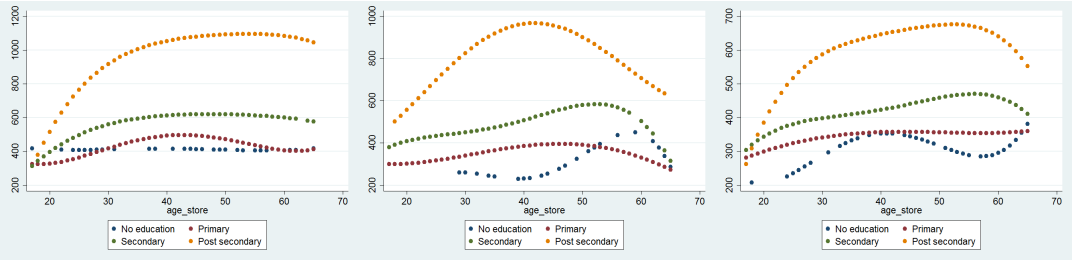
(d) Montenegro, women



(e) Panama, men

(f) Panama, women

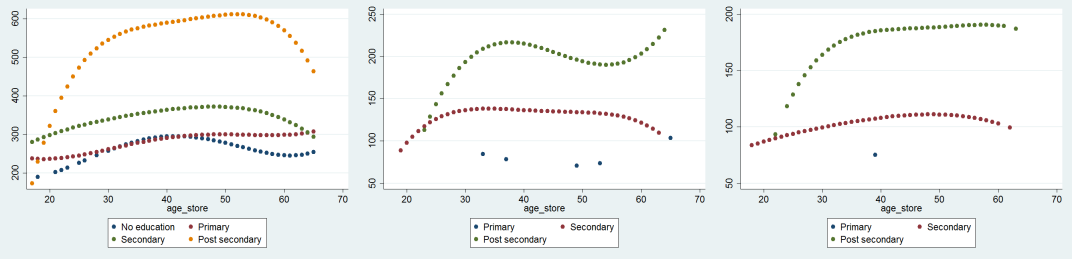
(g) Paraguay, men



(h) Paraguay, women

(i) Peru, men

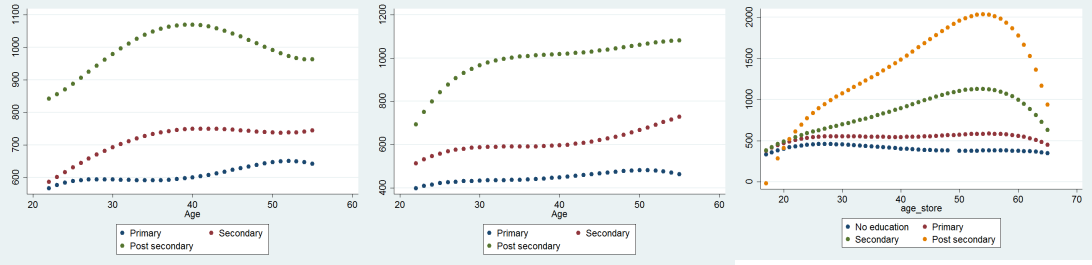
(j) Peru, women



(k) Romania, men

(l) Romania, women

(m) Serbia, men

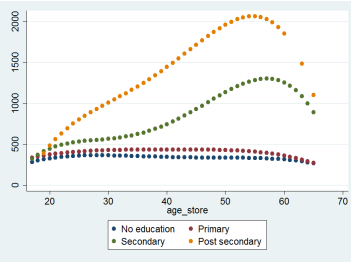


(n) Serbia, women

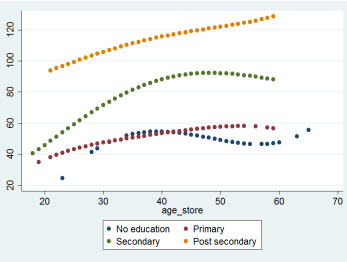
(o) Thailand, men

Figure 18: Wage profile in upper middle income countries (4)

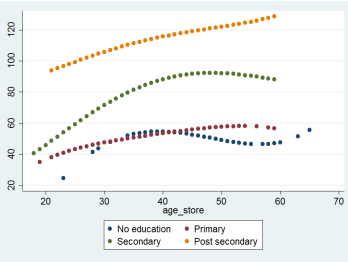
(a) Thailand, women



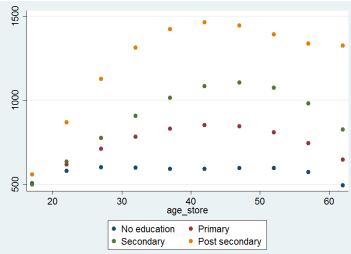
(b) Tunisia, men



(c) Tunisia, women



(d) Turkey, men



(e) Turkey, women

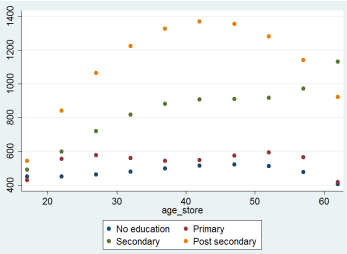
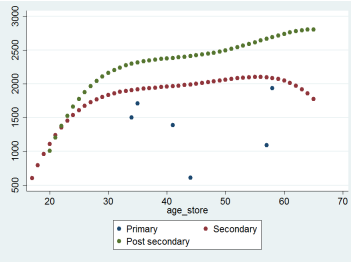
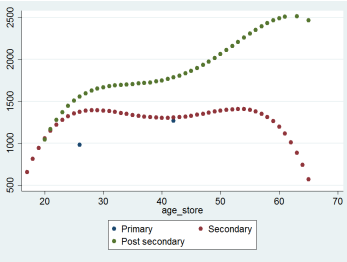


Figure 19: Wage profile in high income countries (1)

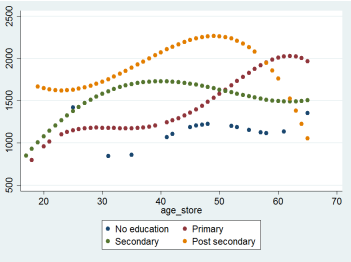
(a) Austria, men



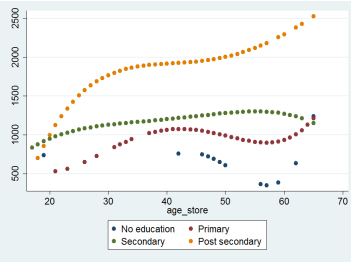
(b) Austria, women



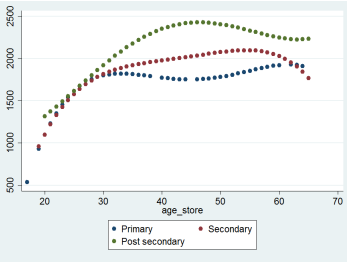
(c) Bahamas, men



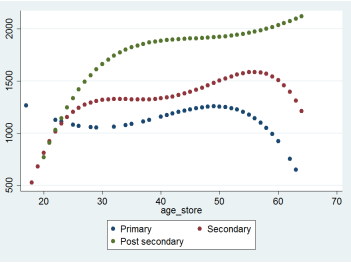
(d) Bahamas, women



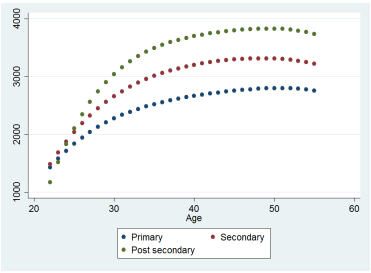
(e) Belgium, men



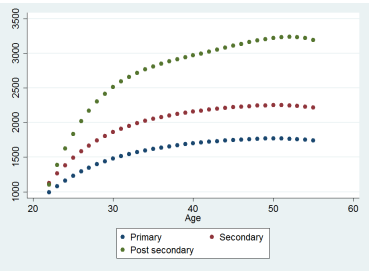
(f) Belgium, women



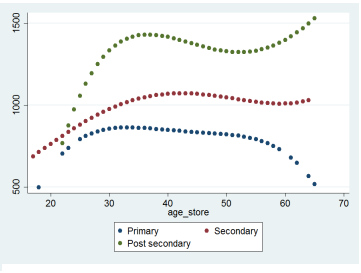
(g) Canada, men



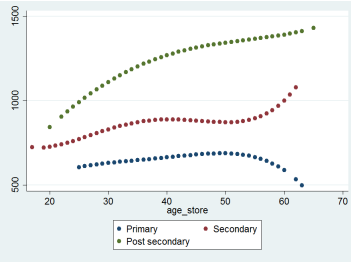
(h) Canada, women



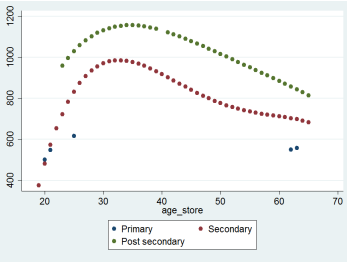
(i) Croatia, men



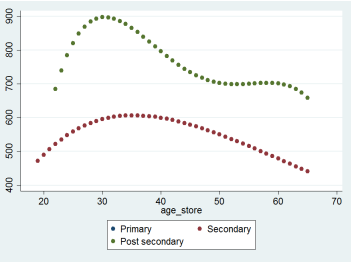
(j) Croatia, women



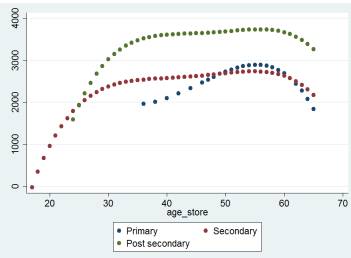
(k) Estonia, men



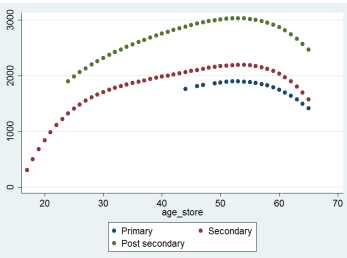
(l) Estonia, women



(m) Finland, men



(n) Finland, women



(o) France, men

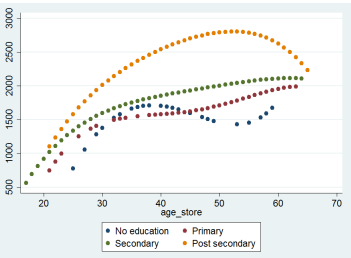
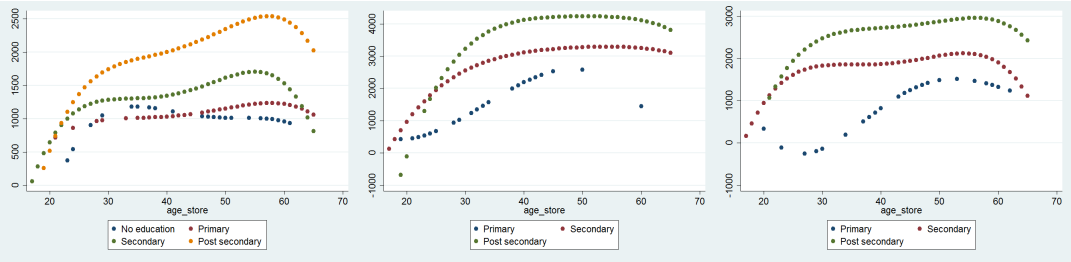


Figure 20: Wage profile in high income countries(2)

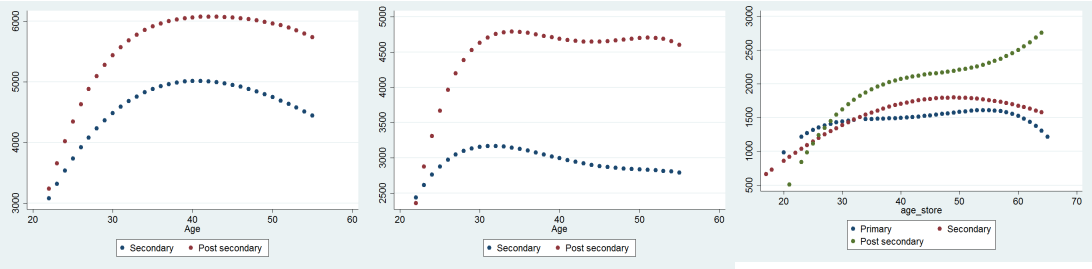
(a) France, women



(b) Germany, men

(c) Germany, women

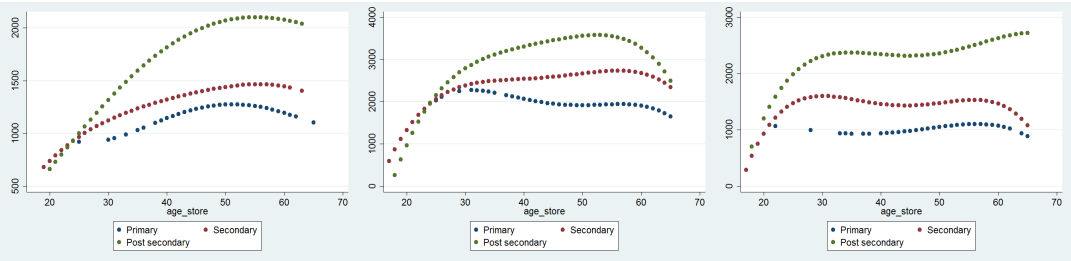
(d) Great Britain, men



(e) Great Britain, women

(f) Greece, men

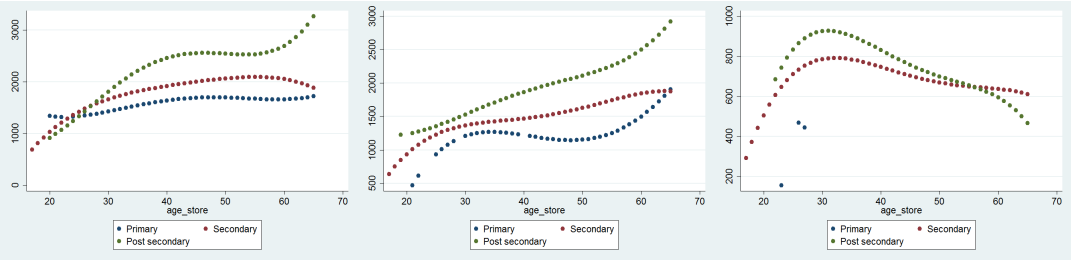
(g) Greece, women



(h) Ireland, men

(i) Ireland, women

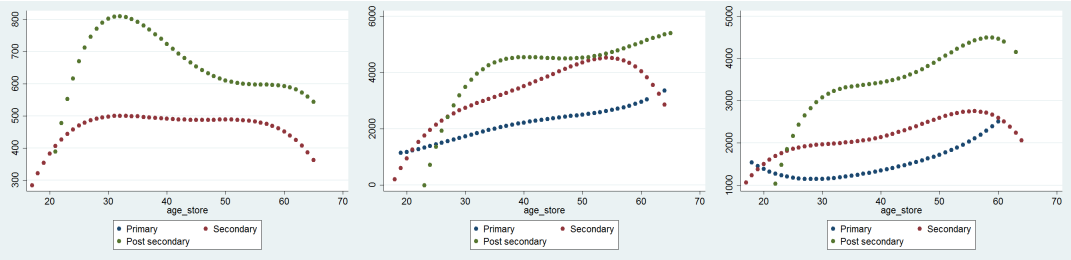
(j) Italy, men



(k) Italy, women

(l) Latvia, men

(m) Latvia, women

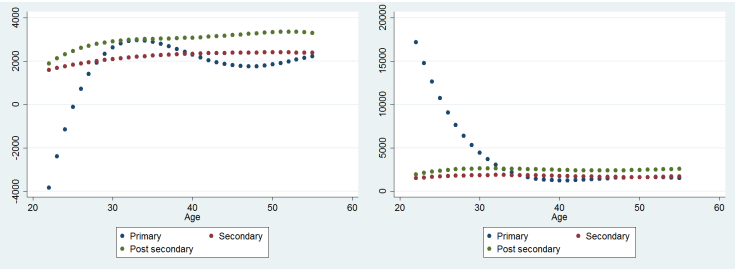


(n) Luxembourg, men

(o) Luxembourg, women

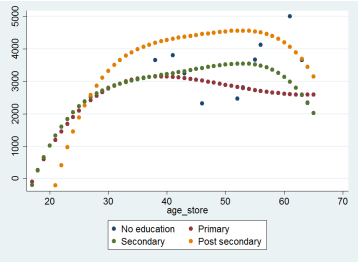
Figure 21: Wage profile in high income countries(3)

(a) Malta, men

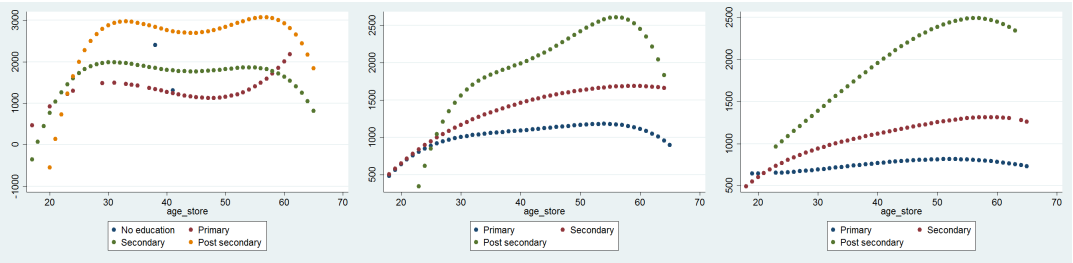


(b) Malta, women

(c) Netherlands, men



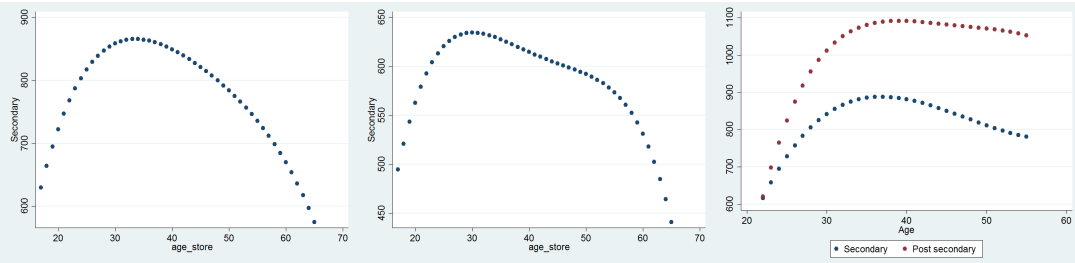
(d) Netherlands, women



(e) Portugal, men

(f) Portugal, women

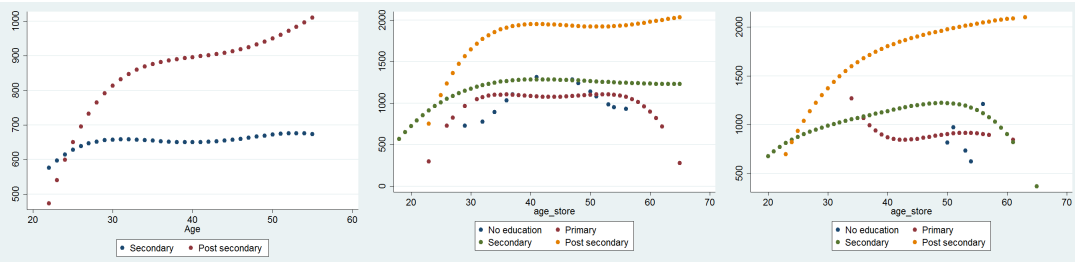
(g) Russia, men



(h) Russia, women

(i) Slovak Republic, men

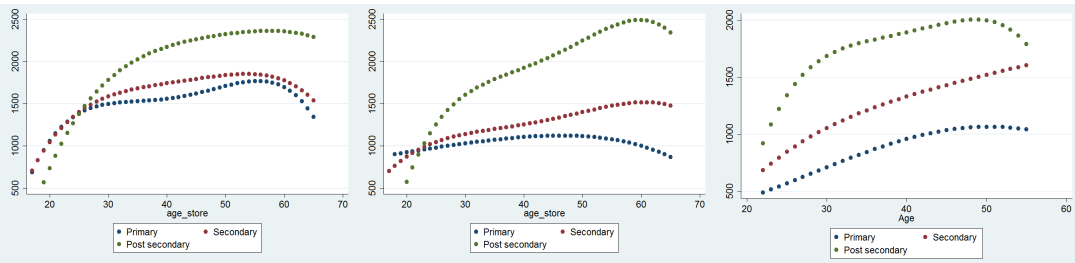
(j) Slovak Republic, women



(k) Slovenia, men

(l) Slovenia, women

(m) Spain, men

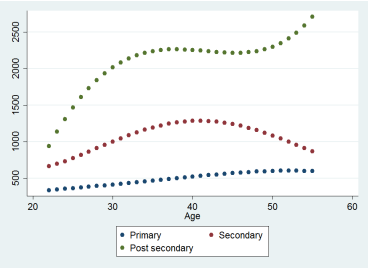


(n) Spain, women

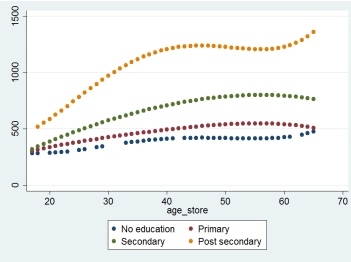
(o) Trinidad and Tobago, men

Figure 22: Wage profile in high income countries(4)

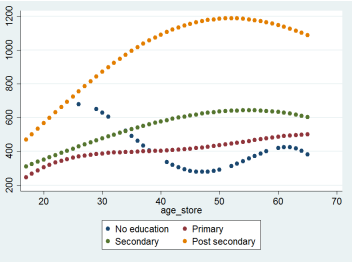
(a) Trinidad and Tobago, women



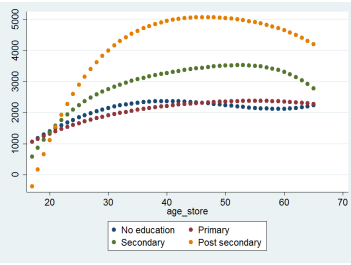
(b) Uruguay, men



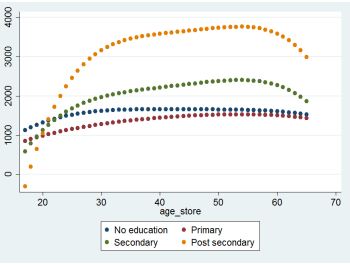
(c) Uruguay, women



(d) USA, men



(e) USA, women



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