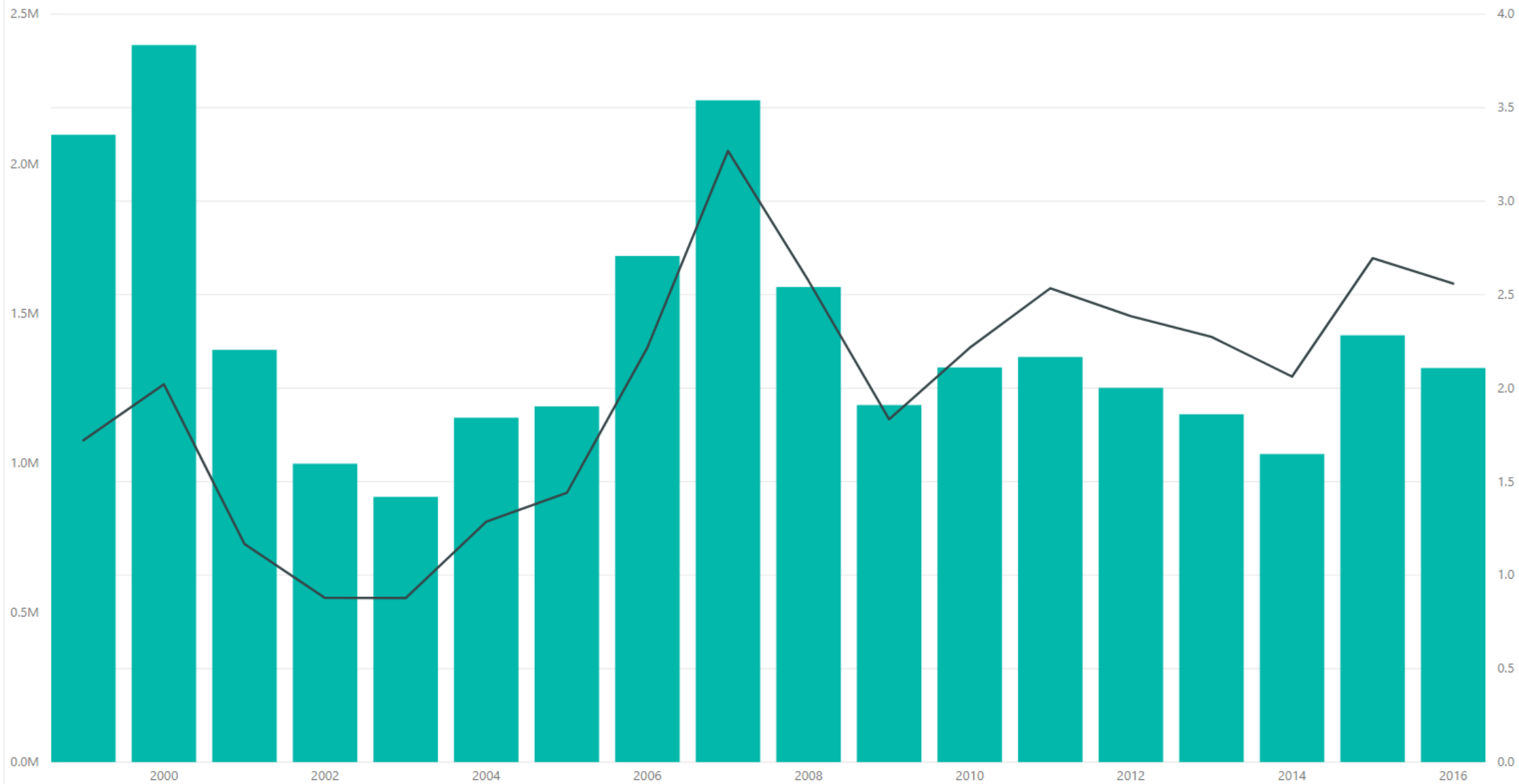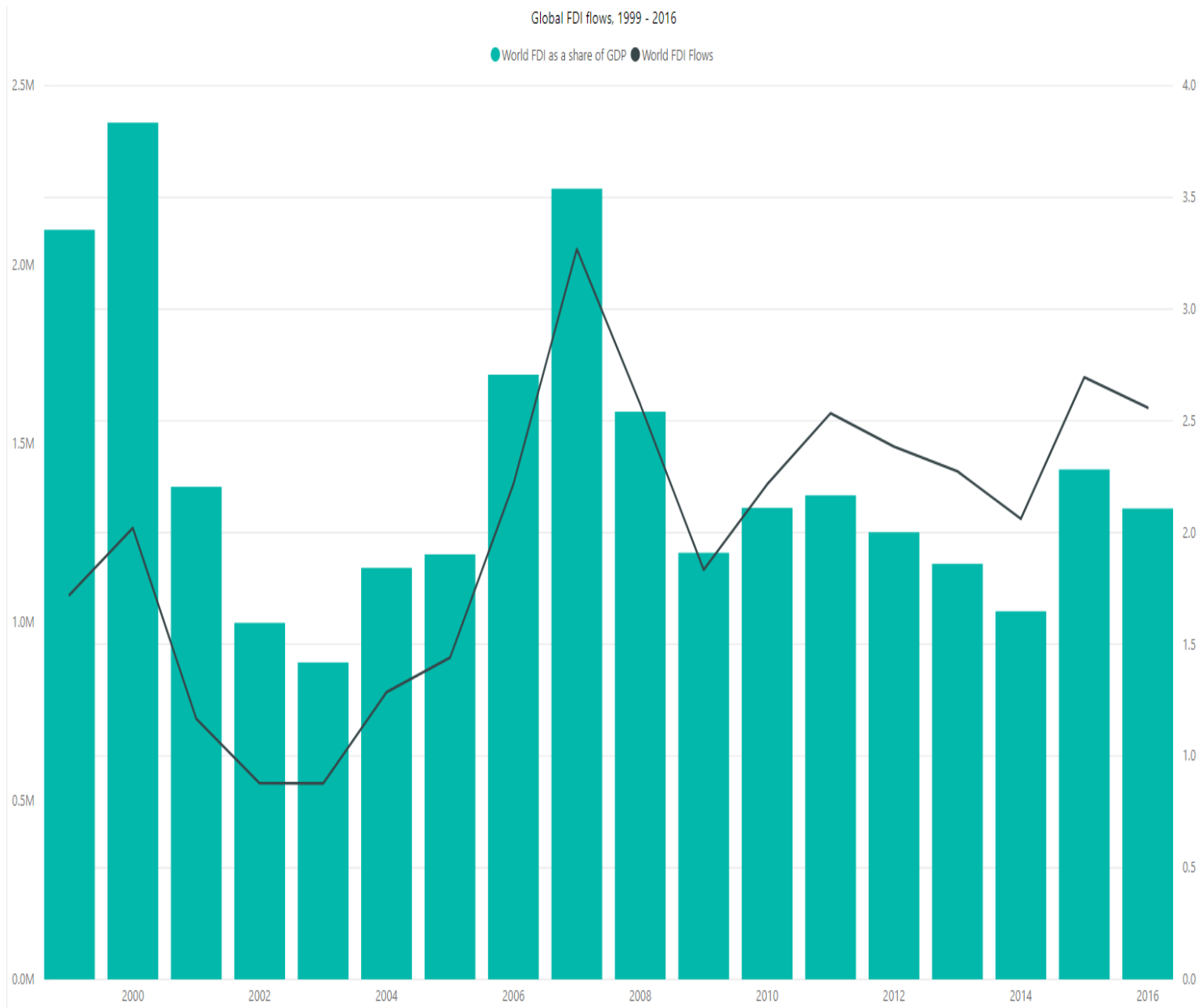# FDI Determinants

Dr. Alfredo A. Romero

Associate Professor of Economics

North Carolina A&T State University

Global FDI flows, 1999 - 2016

● World FDI as a share of GDP ● World FDI Flows

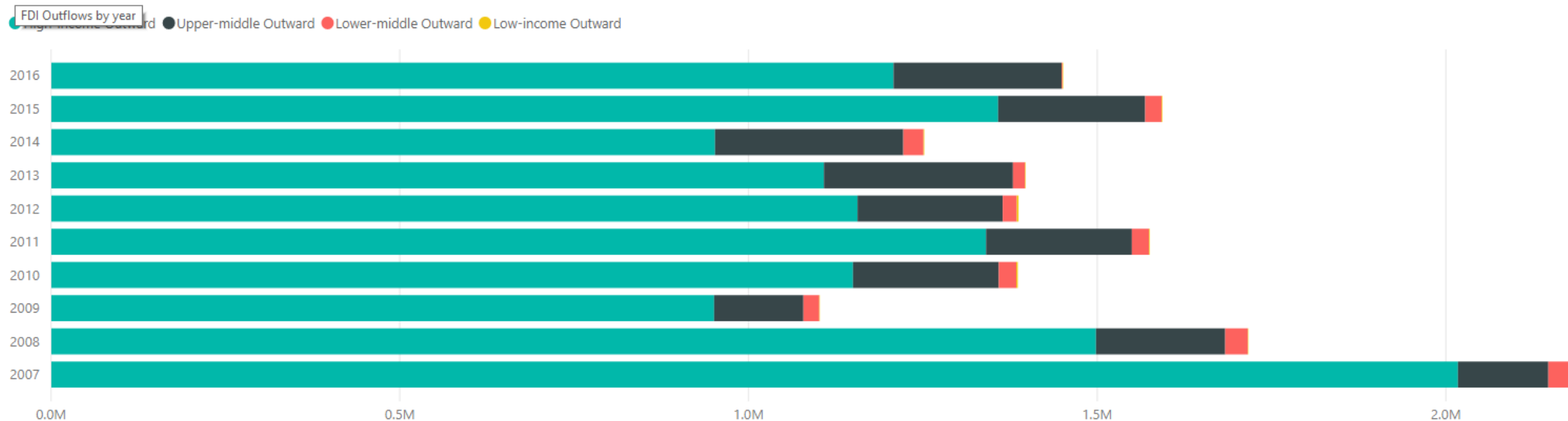Global FDI flows, 1999 - 2016

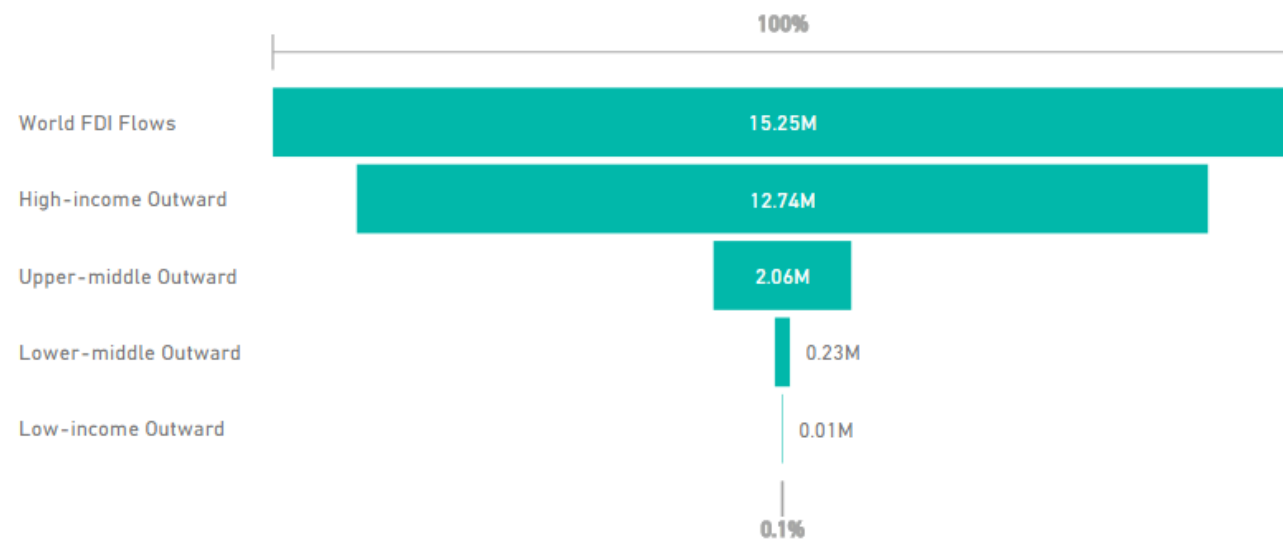● World FDI as a share of GDP ● World FDI Flows

- Over the last 30 years, FDI has grown faster than world trade.

- World FDI flows tend to track world economic growth.

- World FDI flows volatility seems sensitive to economic and financial crises.
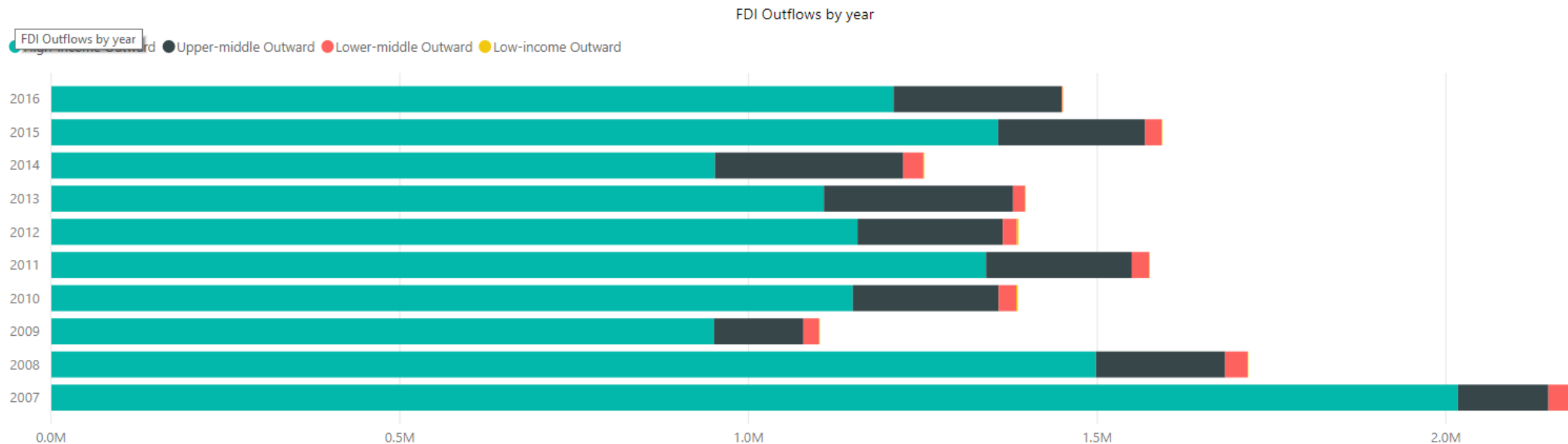
FDI Outflows by year

● High-income Outward ● Upper-middle Outward ● Lower-middle Outward ● Low-income Outward

YEAR	High-income Outward	Upper-middle Outward	Lower-middle Outward	Low-income Outward
2007	92.68	5.95	1.34	0.03
2008	87.23	10.79	1.88	0.04
2009	86.26	11.62	2.06	0.06
2010	82.95	15.08	1.81	0.15
2011	85.06	13.27	1.55	0.07
2012	83.28	15.00	1.45	0.18
2013	79.18	19.36	1.24	0.07
2014	75.97	21.54	2.31	0.08
2015	85.17	13.23	1.48	0.07
2016	83.17	16.58	0.09	0.06

Last Decade FDI Outflows

100%

World FDI Flows — 15.25M

High-income Outward — 12.74M

Upper-middle Outward — 2.06M

Lower-middle Outward — 0.23M

Low-income Outward — 0.01M

0.1%

FDI Outflows by year

- The lion's share of FDI outflows belongs to developed nations, accounting for at least 80% of the flows in any given year over the last decade.

- The share of UM income nations has steadily increase over the same period.
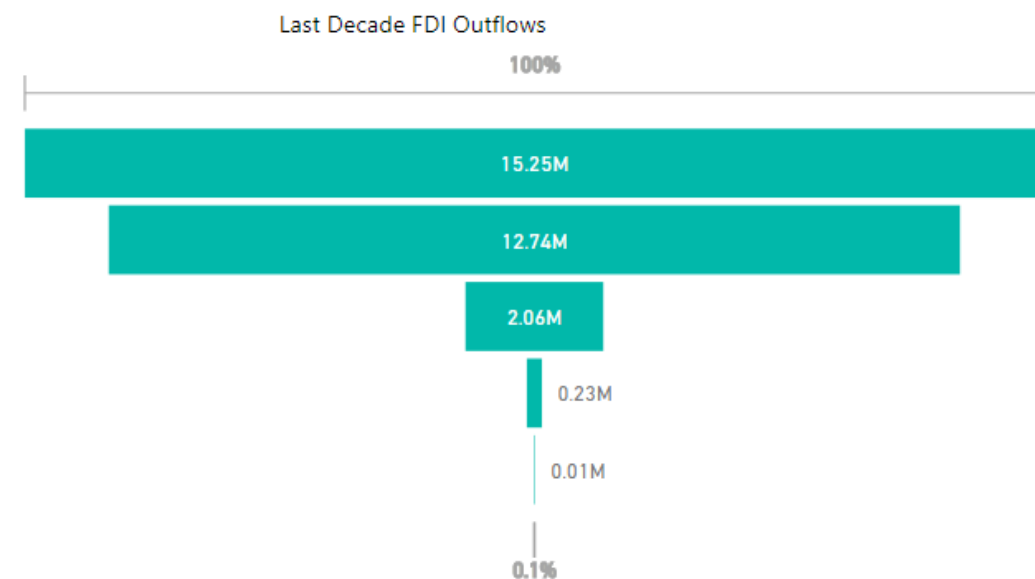
Composition of FDI Outflows (millions US$)

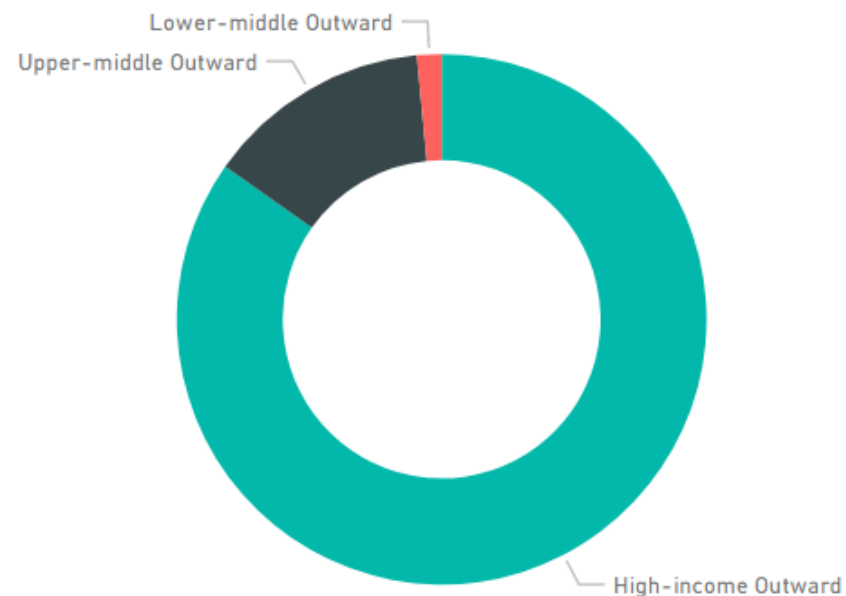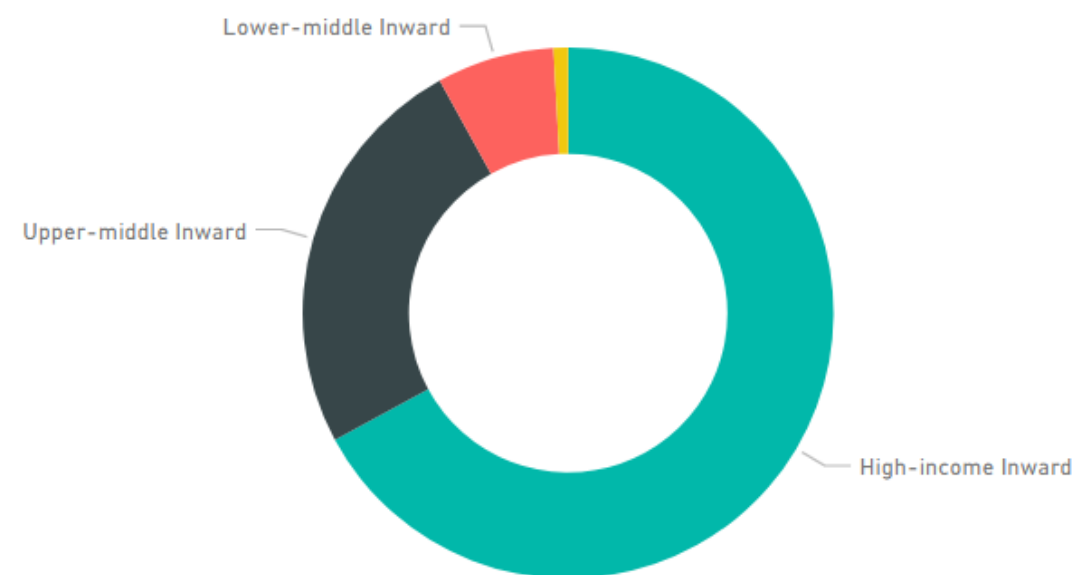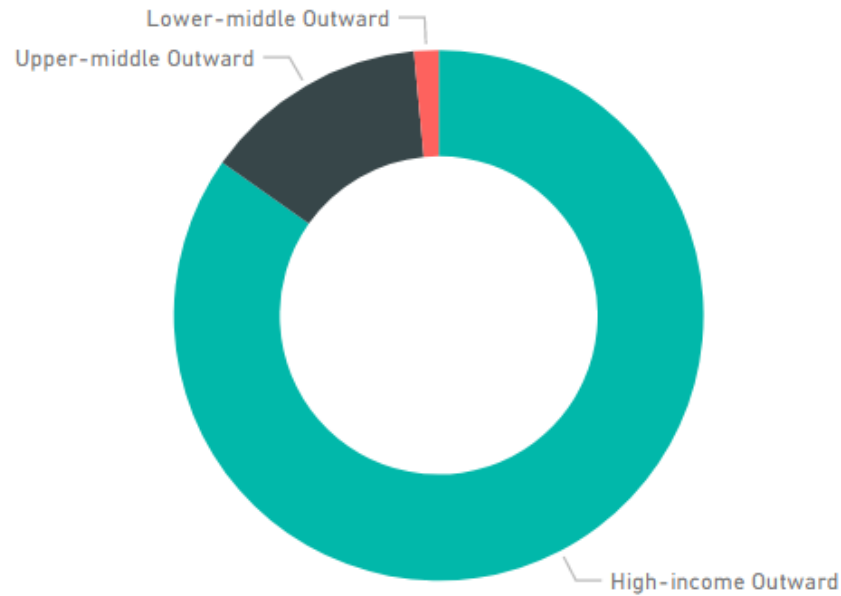| YEAR	High-income Outward	Upper-middle Outward	Lower-middle Outward	Low-income Outward
2007	2,017,208.13	129,594.66	29,224.39	559.96
2008	1,498,192.28	185,275.07	32,284.00	719.05
2009	950,648.31	128,082.07	22,695.07	665.84
2010	1,149,760.84	209,042.93	25,135.45	2,122.00
2011	1,340,577.78	209,090.56	24,390.33	1,150.47
2012	1,156,343.05	208,210.86	20,133.98	2,440.17
2013	1,108,163.70	270,961.98	17,386.61	910.28
2014	951,999.43	269,916.80	28,954.11	1,005.91
2015	1,357,886.46	210,867.78	23,653.18	1,072.09
2016	1,207,948.19	240,870.15	1,312.72	918.24

Composition of FDI Inflows (millions US$)

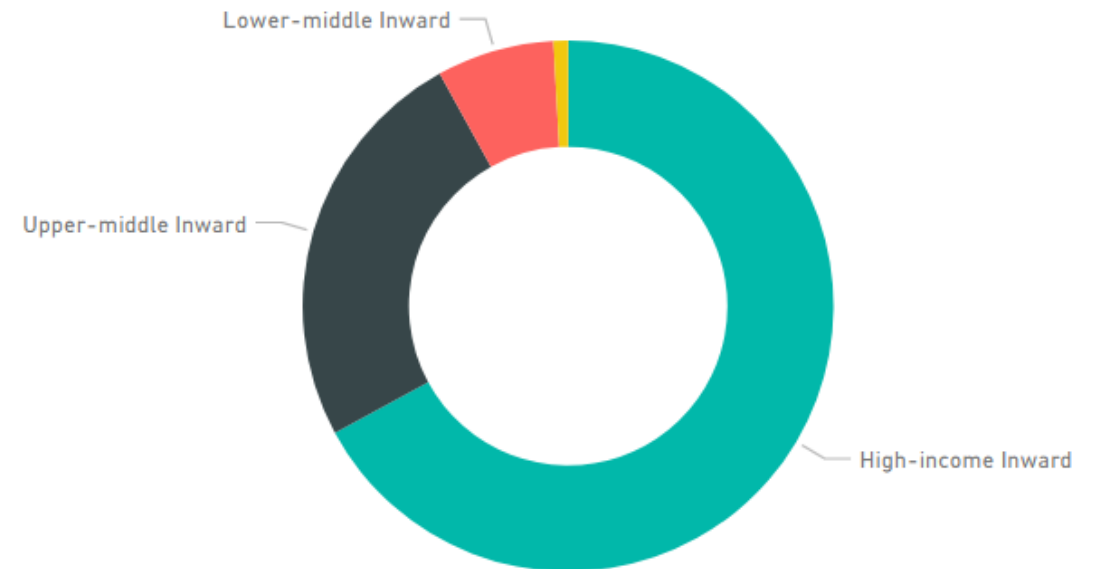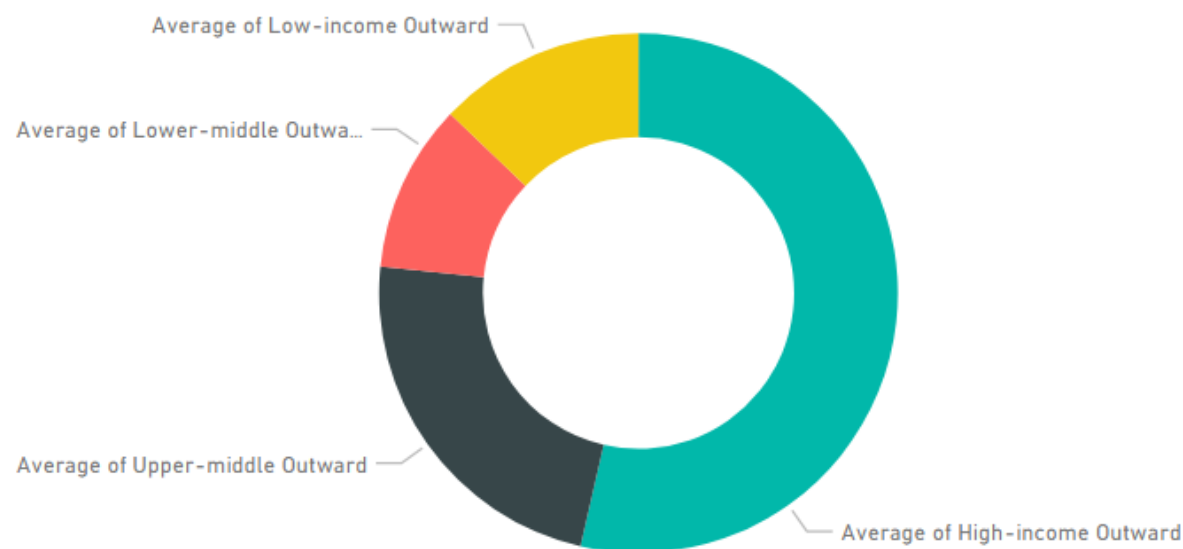| YEAR	High-income Inward	Upper-middle Inward	Lower-middle Inward	Low-income Inward
2007	1,450,109.81	352,352.66	99,438.44	6,889.16
2008	932,093.59	428,342.18	129,477.70	8,914.95
2009	803,967.66	280,529.50	96,678.53	8,520.47
2010	881,088.76	387,578.46	103,136.52	11,618.74
2011	1,025,689.10	434,419.97	114,441.86	16,046.61
2012	1,054,131.57	408,479.65	109,840.07	19,851.32
2013	887,425.08	429,537.04	106,967.04	18,952.68
2014	814,236.40	377,726.33	115,406.25	16,287.49
2015	1,264,015.99	371,635.91	122,470.01	15,487.25
2016	1,250,559.60	373,855.89	106,744.62	14,999.57

Composition of FDI Outflows (millions US$)

- The same can be said about the share of FDI inflows. The flow is consistent from developed nations to developed nations, or north-north FDI flows.

- This might be the results of developed nations being geographically clustered.

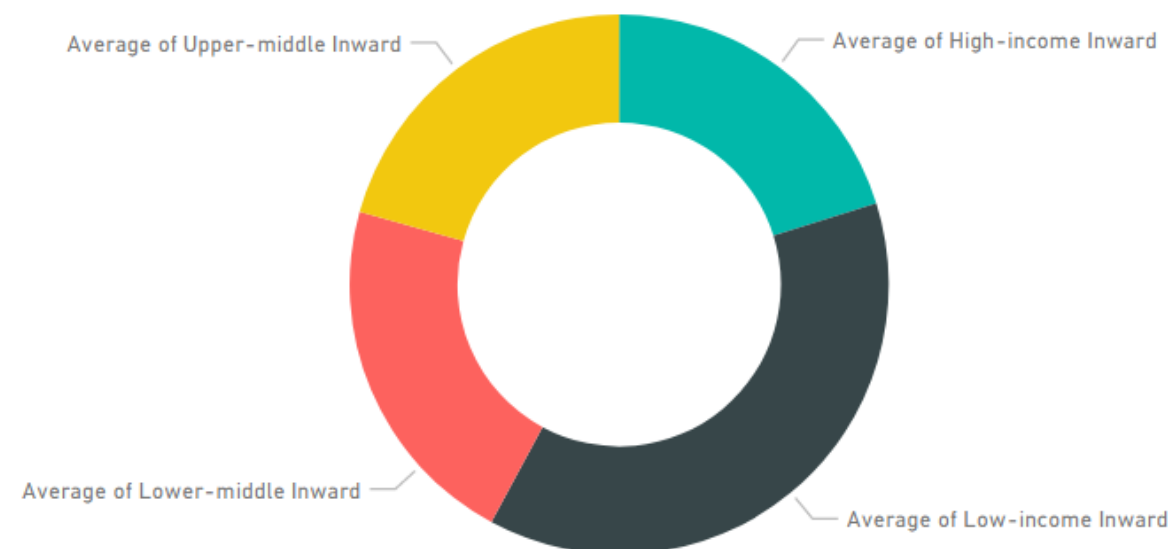| YEAR	High-income Inward	Upper-middle Inward	Lower-middle Inward	Low-income Inward
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Composition of FDI Inflows (millions US$)

Composition of FDI Outflows (% of GDP)

YEAR	High-income Outward	Upper-middle Outward	Lower-middle Outward	Low-income Outward
2007	4.64	1.19	0.97	
2008	3.26	1.38	0.93	0.60
2009	2.20	0.99	0.65	
2010	2.54	1.34	0.59	
2011	2.74	1.12	0.50	0.66
2012	2.37	1.04	0.40	1.31
2013	2.25	1.26	0.33	0.47
2014	1.89	1.23	0.52	0.45
2015	2.87	1.03	0.43	0.53
2016	2.50	1.14	0.02	0.57

YEAR	High-income Inward	Upper-middle Inward	Lower-middle Inward	Low-income Inward
2007	3.33	3.20	3.07	3.26
2008	2.02	3.18	3.48	3.59
2009	1.85	2.16	2.61	3.35
2010	1.94	2.47	2.28	4.27
2011	2.08	2.32	2.21	5.16
2012	2.16	2.03	2.07	5.63
2013	1.80	2.00	1.93	4.96
2014	1.62	1.72	1.99	3.94
2015	2.68	1.80	2.12	3.89
2016	2.59	1.75	1.77	3.28

Composition of FDI Inflows (% of GDP)

Composition of FDI Outflows (% of GDP)
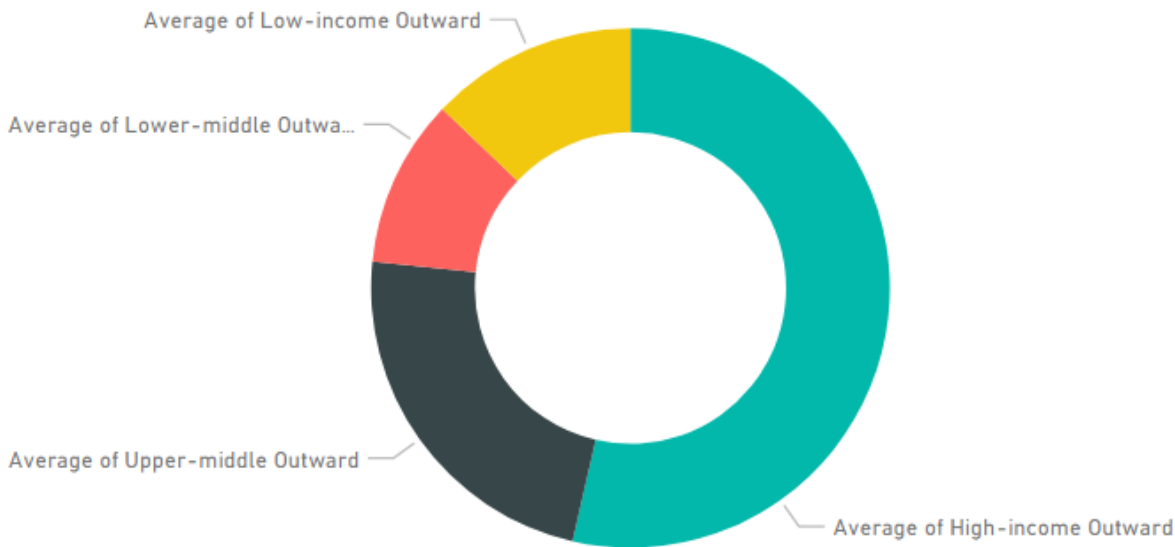
- Scaling by the size of the economy is a different story, where we can see a north-north and north-south combination of flows.

YEAR	High-income Inward	Upper-middle Inward	Lower-middle Inward	Low-income Inward
2007	3.33	3.20	3.07	3.26
2008	2.02	3.18	3.48	3.59
2009	1.85	2.16	2.61	3.35
2010	1.94	2.47	2.28	4.27
2011	2.08	2.32	2.21	5.16
2012	2.16	2.03	2.07	5.63
2013	1.80	2.00	1.93	4.96
2014	1.62	1.72	1.99	3.94
2015	2.68	1.80	2.12	3.89
2016	2.59	1.75	1.77	3.28

Composition of FDI Inflows (% of GDP)

FDI Inflows ($US)

Europe
- Netherlands
- United Kingdom
- Ireland
- Belgium
- Germany
- Spain
- Luxembourg
- Hungary
- Italy
- Poland
- France
- Sweden
- Norway
- Portu...
- Czec...
- Malta
- Finl...
- Cy...
- Ukraine
- Bul...
- Az...
- Cro...
- Bel...
- Austria
- Gre...
- Romania
- De...
- Switzerland

North America
- United States
- Canada
- British Virgin Islands
- Mexico
- Cayman Isl...
- Pan...

Asia
- China
- Hong Kong SAR, China
- Singapore
- India
- Saudi Arabia
- Russian Federation
- Indonesia
- Turkey
- Japan
- Kazakh...
- Mala...
- Kore...
- Viet...
- Israel
- Ph...
- Thailand
- Mac...
- Pakis...
- Iraq
- United Ara...
- Qatar

South America
- Brazil
- Chile
- Colombia
- Argent...
- Peru

Africa
- Nige...
- Egyp...
- Sout...

Oceania
- Australia

FDI Inflows (% of GDP)

Europe
- Netherlands
- Malta
- Cyprus
- Ireland
- Moldova
- Luxembourg
- Montenegro
- Hungary
- Belgium
- Georgia
- Albania
- Bulgaria
- Azerbaijan
- Estonia
- Kosovo
- Serbia
- Iceland
- Portugal
- Unit...
- Lat...
- Bos...
- Bel...
- Macedoni...
- Poland
- Switzerland
- Ukraine
- Fi...
- Lit...
- Romania
- Croatia
- Norw...
- Spain
- Slove...
- Armenia
- Czech Rep...
- Slovak R...
- Germ...

Asia
- Hong Kong SAR, China
- Singapore
- Mongolia
- Turkmenist...
- Cambodia
- Maldives
- Lebanon
- Macao S...
- Kyrgyz ...
- Kazakh...
- Jordan
- Vietnam
- Sau...
- Israel
- Mal...
- Tim...
- Syr...
- Lao PDR
- China
- Unit...
- Tha...
- Qa...
- In...
- Bahrain
- Russia...
- Bhut...
- Turkey
- Tajikistan
- Brunei ...
- Uzb...
- West ...
- Philip...
- Myanmar
- Oman
- Indo...
- Iraq

North America
- St. Kitts and Ne...
- St. Vincent an...
- Grenada
- Antigua...
- Panama
- St. Lucia
- Barbados
- Belize
- Nicaragua
- Costa Ri...
- Hondur...
- Bahamas, The
- Domini...
- Canada
- Dominica
- Mexico
- El Salv...
- Haiti
- Jamaica
- Guate...

Africa
- Liberia
- Mozambique
- Congo, Rep.
- Seychelles
- Niger
- São Tomé and Principe
- Madagascar
- Djibouti
- Ghana
- Mauritania
- Cabo Verde
- Sierra Leone
- Congo, ...
- Namibia
- Zambia
- Guinea
- Equa...
- Som...
- Malawi
- Libya
- Rw...
- Tu...
- Mali
- Eri...
- Le...
- Togo
- Tanzania
- Morocco
- Gambia, The
- Botswana
- Senegal
- Guine...
- Sudan
- Burkin...
- Gabon
- Mauritius
- Chad
- Camer...
- Uganda
- Egypt, A...
- Central ...
- South ...
- Al...

Oceania
- Solomon Islan...
- Palau
- Austr...
- To...
- Vanuatu
- Fiji
- Marshall Isla...
- M...

South America
- Chile
- Urugu...
- Peru
- Col...
- Brazil
- Arg...
- Ar...
- Guyana
- Bolivia
- Par...

FDI Inflow ($US)

Continent
- ☐ Africa
- ☐ Asia
- ☐ Europe
- ☒ North America
- ☐ Oceania
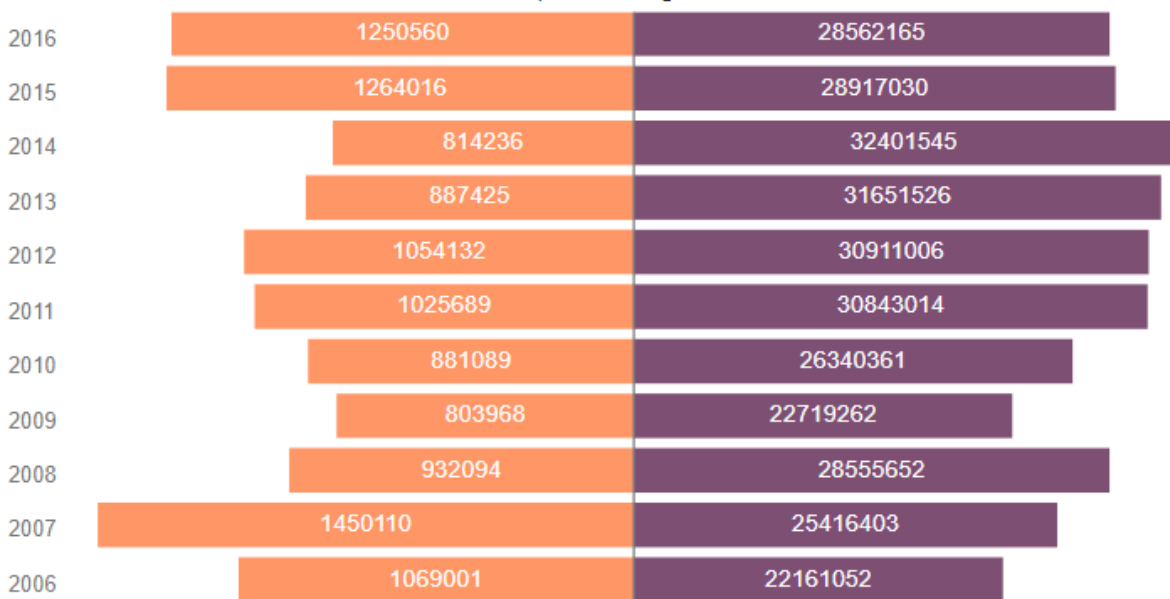- ☐ South America

Region
- ☐ Latin America & Caribbean
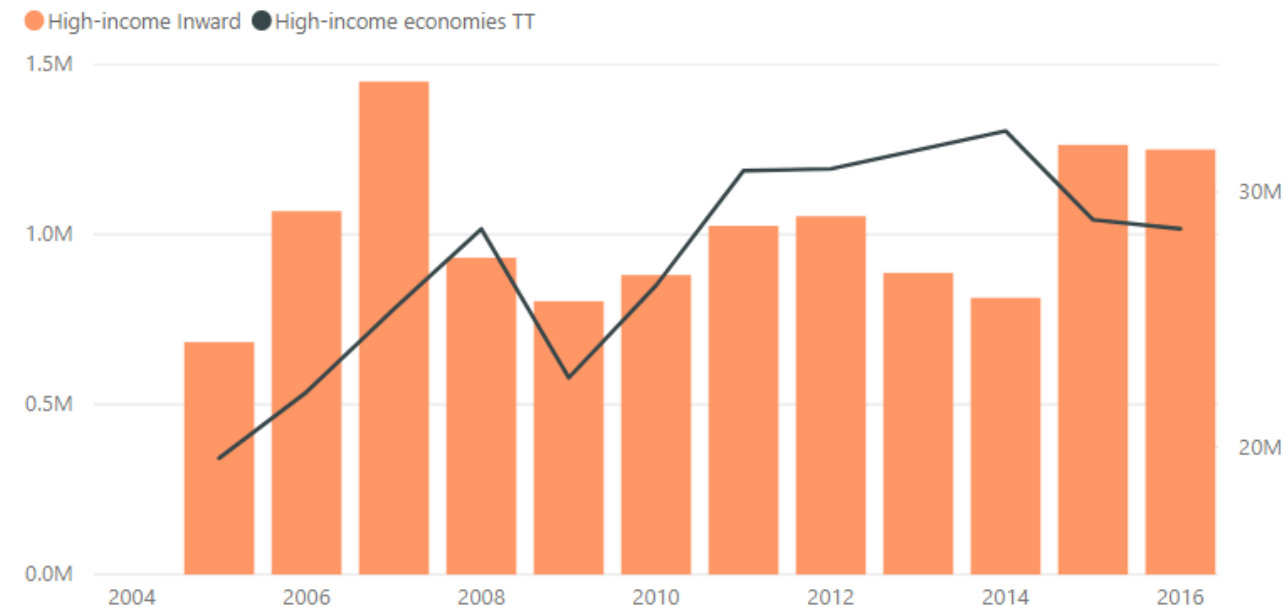
High income	Low income	Lower middle income	Upper middle income

Country	FDI, net inflows (Mean % of GDP)
St. Vincent and the Grenadines	15.38
Grenada	10.03
Panama	9.37
St. Lucia	8.64
Belize	7.63
Nicaragua	6.93
Costa Rica	6.24
Honduras	6.08
Dominica	5.65
Jamaica	4.60
Dominican Republic	4.01
Mexico	2.64
El Salvador	2.22
Guatemala	2.13
Total	**6.54**

FDI Inflows vs Openness (High Income Countries)
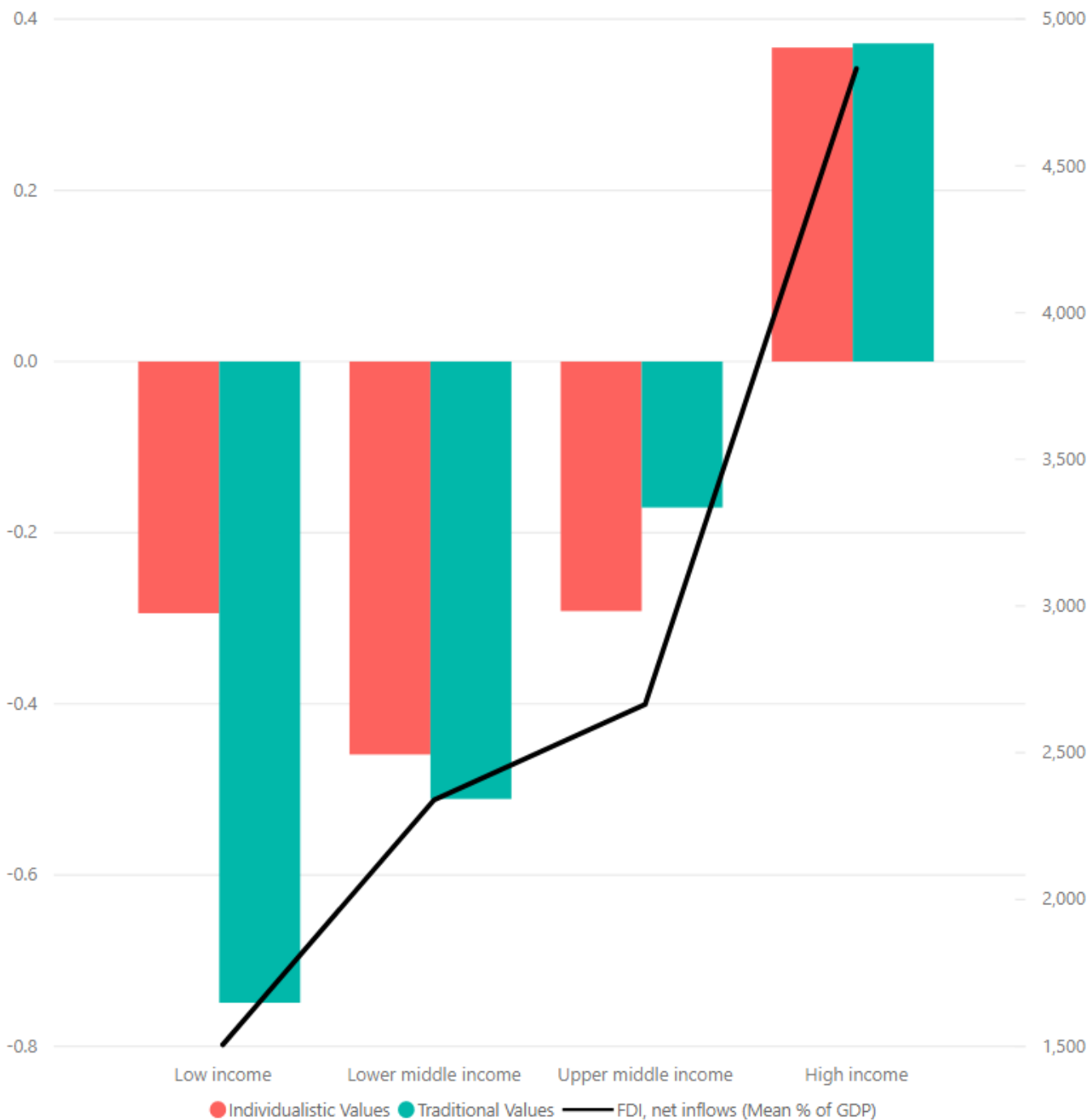
Year	High-income Inward	High-income economies TT
2016	1250560	28562165
2015	1264016	28917030
2014	814236	32401545
2013	887425	31651526
2012	1054132	30911006
2011	1025689	30843014
2010	881089	26340361
2009	803968	22719262
2008	932094	28555652
2007	1450110	25416403
2006	1069001	22161052

FDI Inflows vs Openness (High Income Countries)

High-income Inward ● High-income economies TT

FDI Inflows vs Openness (Low Income Countries)

Low-income Inward ● Low-income economies TT

FDI Inflows vs Openness (Low Income Countries)

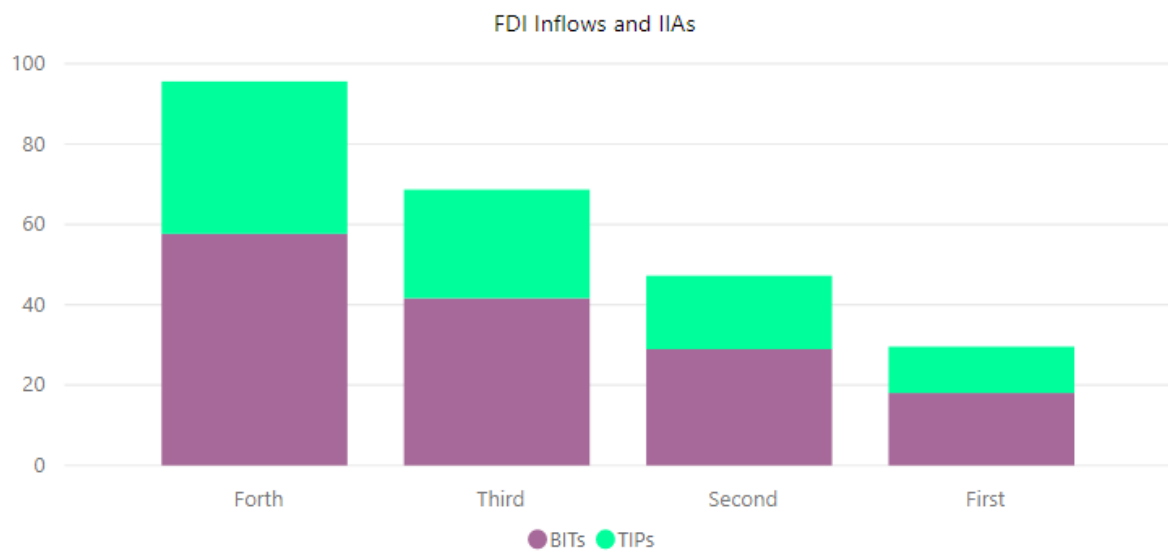| Year	Low-income Inward	Low-income economies TT
2016	15000	224479
2015	15487	228951
2014	16287	255565
2013	18953	241177
2012	19851	224474
2011	16047	207277
2010	11619	166355
2009	8520	136114
2008	8915	149804
2007	6889	117926
2006	3296	95432

FDI vs Values

World Values Survey

FDI Inflows

● GDP per capita (2010 US$) ● GDP (2010 US$)

FDI Inflows per Quartile

● Educational attainment (Secondary School %) ● Government expenditure on education (% of GDP)

Broad money (% of GDP)

FDI and Institutions

Economic Freedom
Financial Freedom
Business Freedom
Investment Freedom
Government Integrity

Forth | Third | Second | First
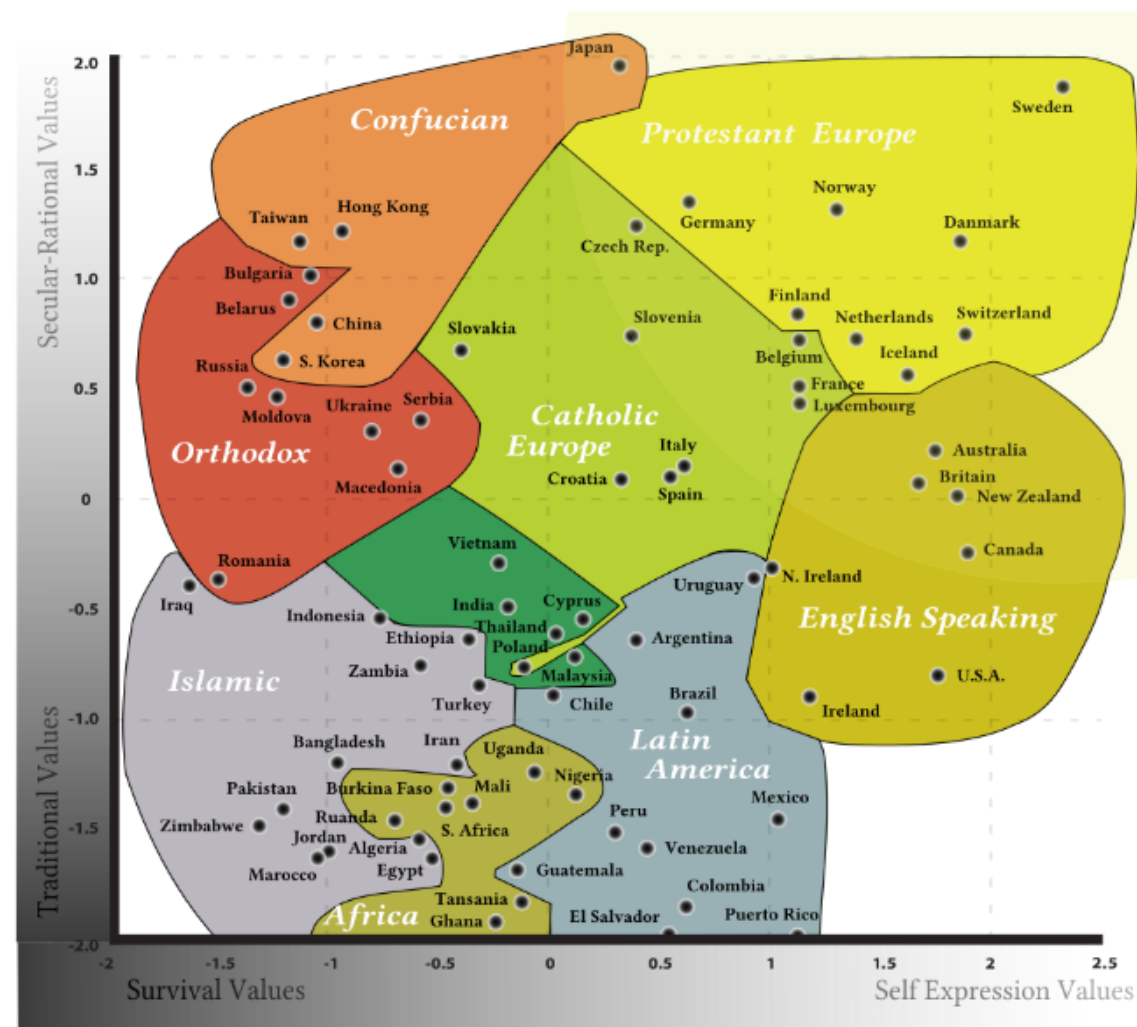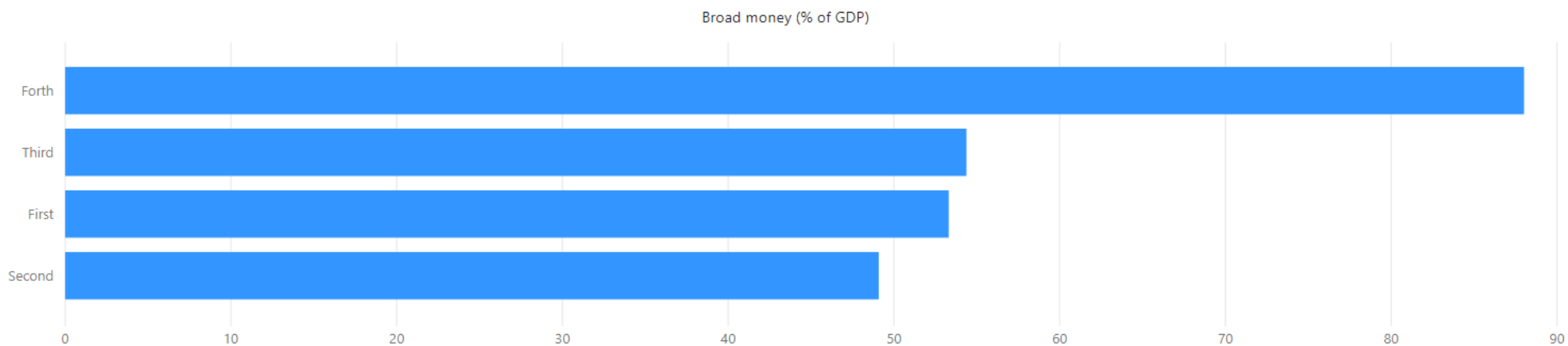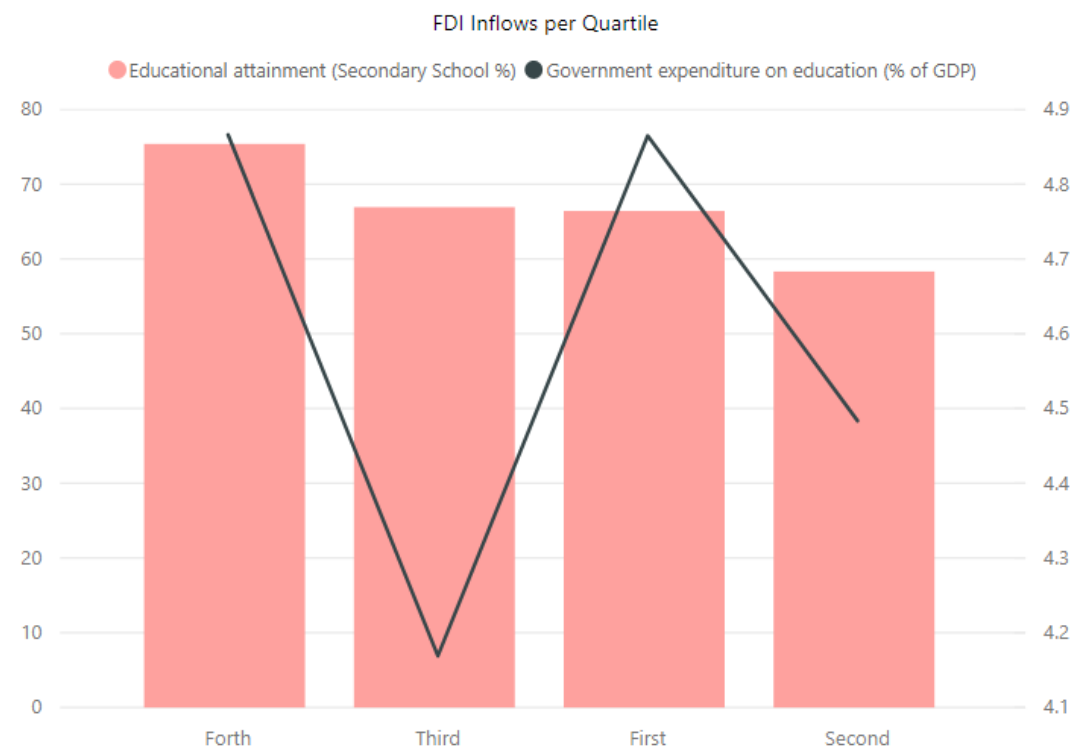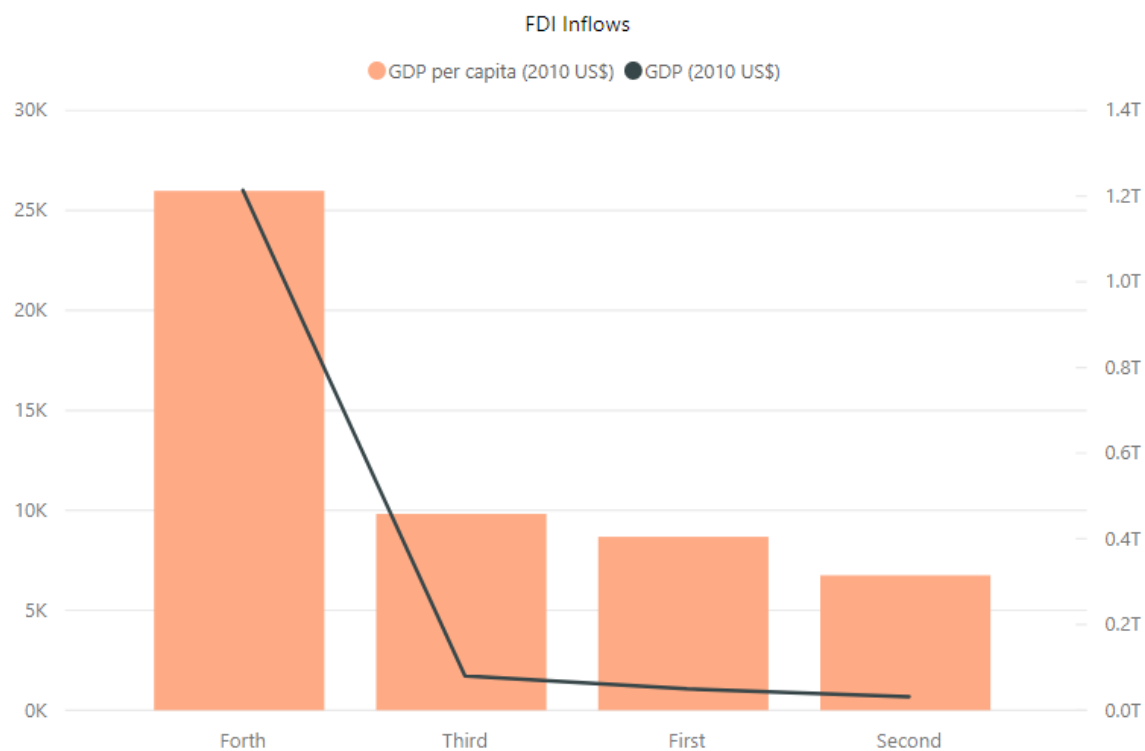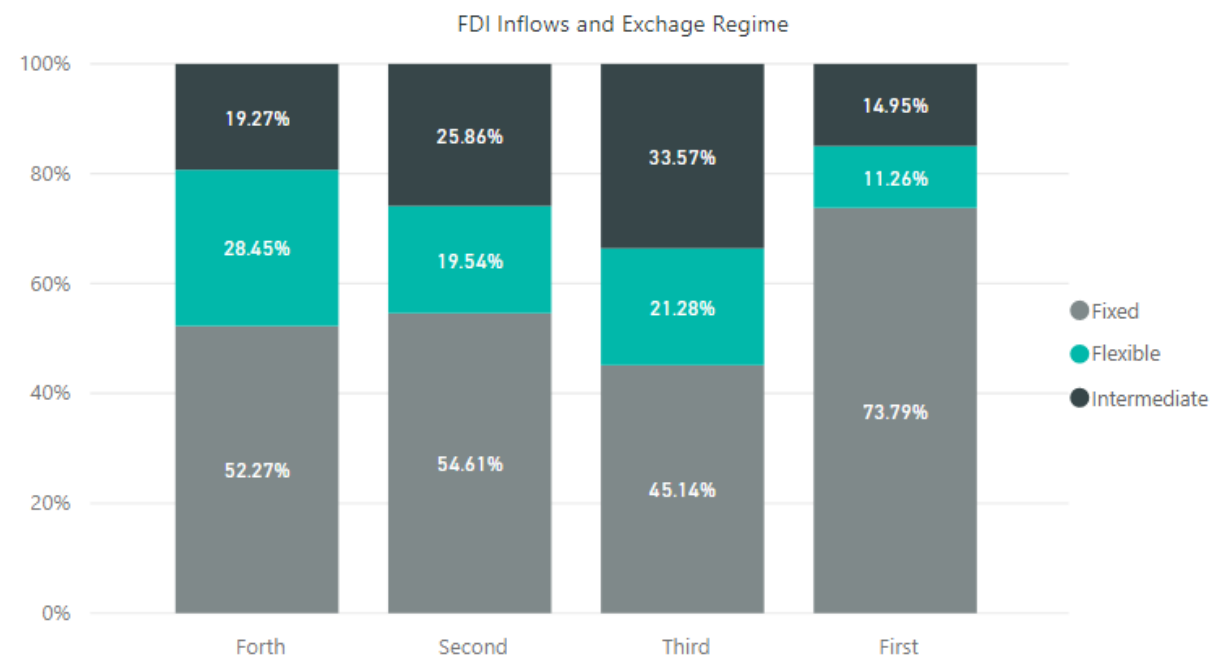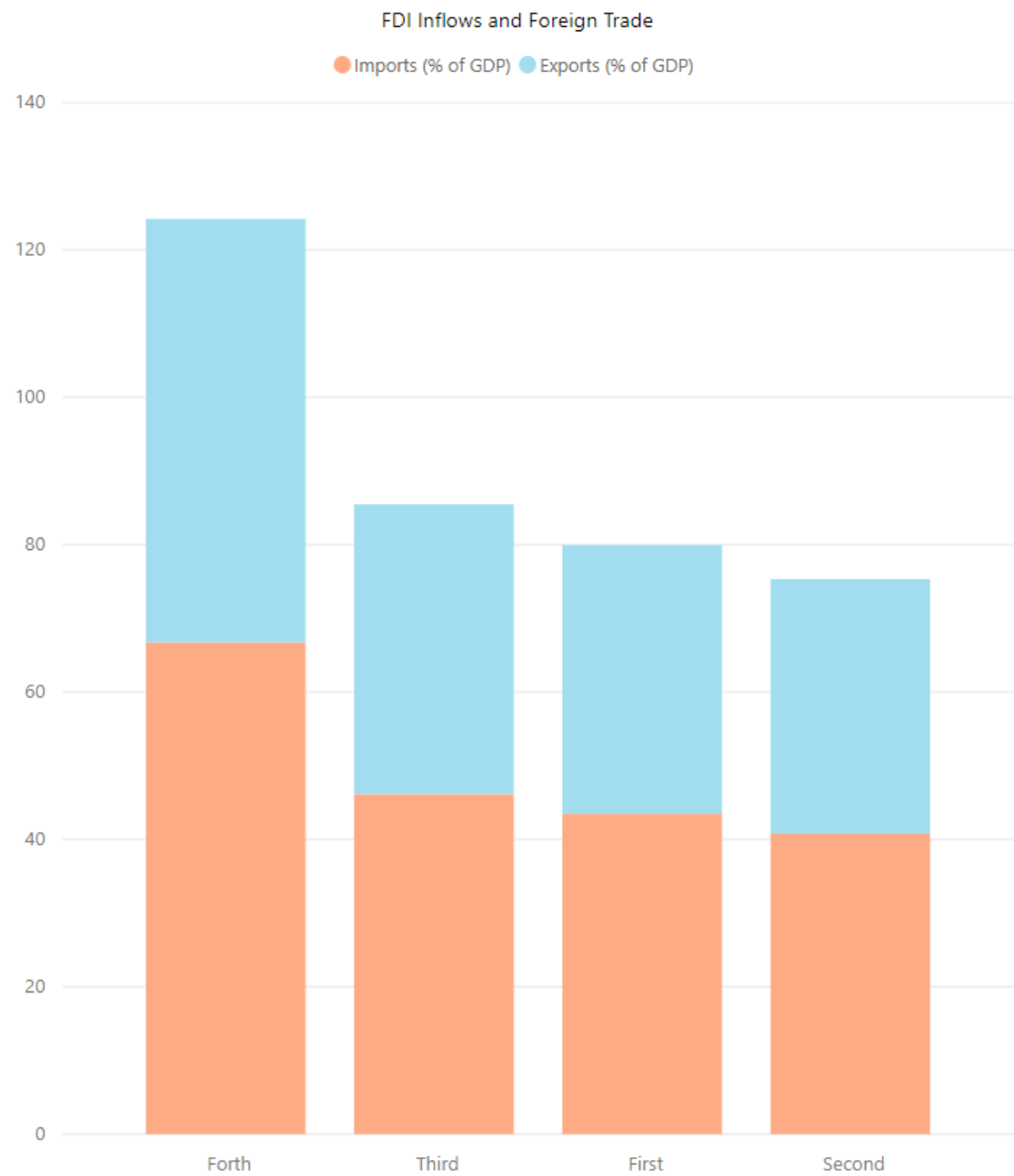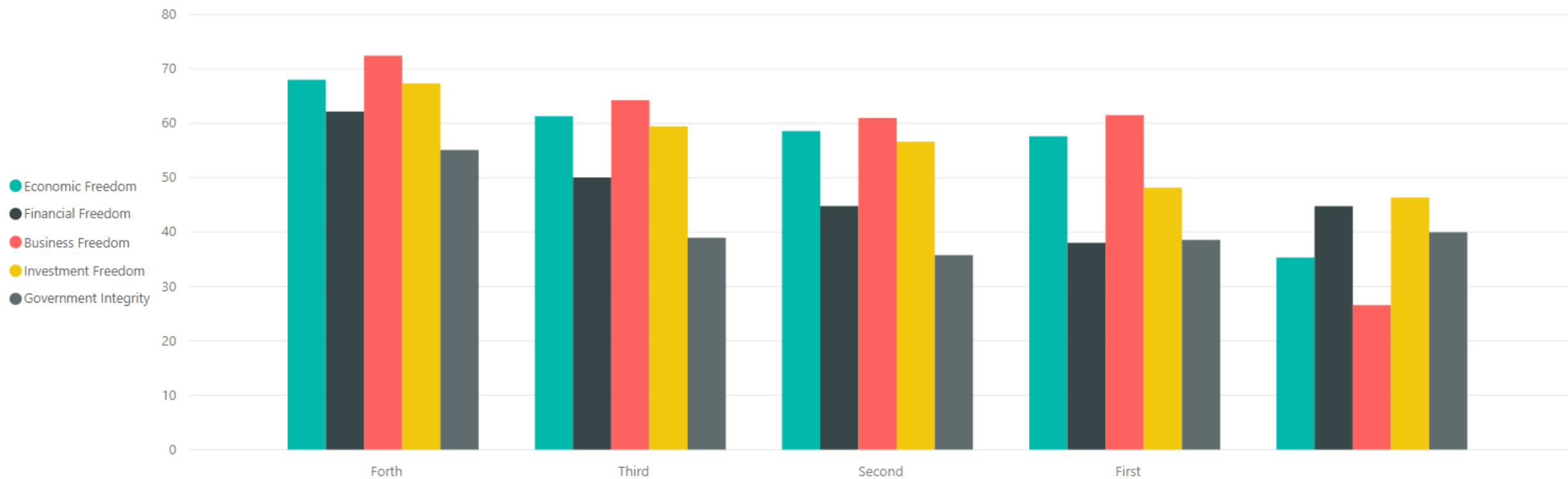
FDI and Economic Indicators

Tariff Rate
Unemployment Rate
Tax Burden

Second | First | Third | Forth
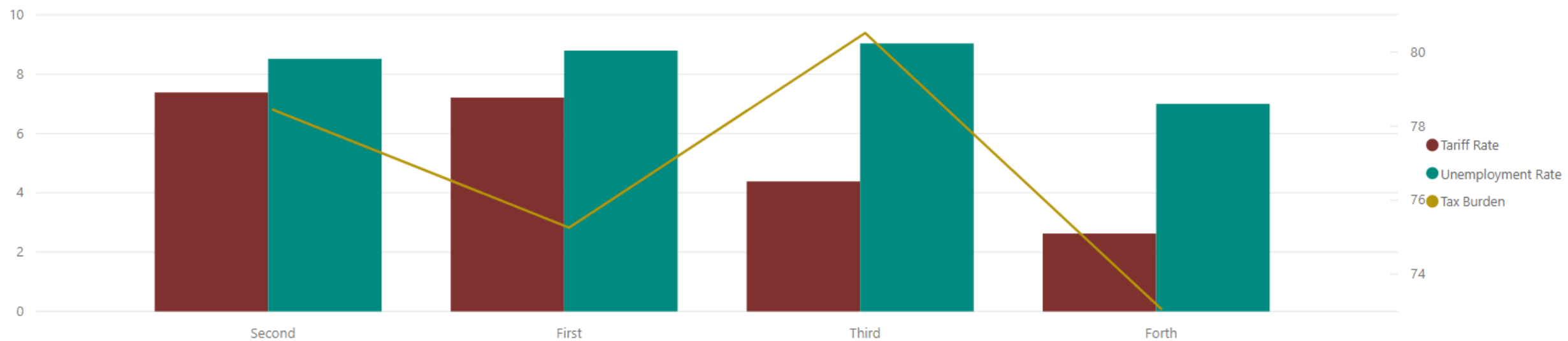
FDI Inflows Determinants

$$fdi\_inflows = \ln\left(FDI + \sqrt{(FDI^2 + 1)}\right)$$

- Financial Integration
- GDP
- GDP Growth
- Tariffs
- Economic Freedom
- Openness
- Cultural Values
- Government Efficiency

Source	SS	df	MS			
Model	185.613567	9	20.6237297			
Residual	168.241237	52	3.23540841			
Total	353.854804	61	5.80089843			

Number of obs = 62
F(9, 52) = 6.37
Prob > F = 0.0000
R-squared = 0.5245
Adj R-squared = 0.4423
Root MSE = 1.7987

fdi_inflows	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
money	.0152254	.0052667	2.89	0.006	.0046569	.0257938
gdpbillionsppp	.0003208	.0000746	4.30	0.000	.0001711	.0004705
yeargdpgrowthrate	-.2472444	.1451728	-1.70	0.095	-.538555	.0440662
tariffrate	-.1352327	.0848213	-1.59	0.117	-.305439	.0349736
score	.0701388	.0364569	1.92	0.060	-.0030172	.1432949
tradition	-2.134924	.5445176	-3.92	0.000	-3.227579	-1.04227
individual	-.625033	.5377193	-1.16	0.250	-1.704046	.4539796
openness	-.0017791	.0053965	-0.33	0.743	-.012608	.0090498
publicdebtofgdp	-.0012596	.0077036	-0.16	0.871	-.0167181	.0141989
_cons	3.541099	2.455583	1.44	0.155	-1.386389	8.468587

A second look at the World Values Survey
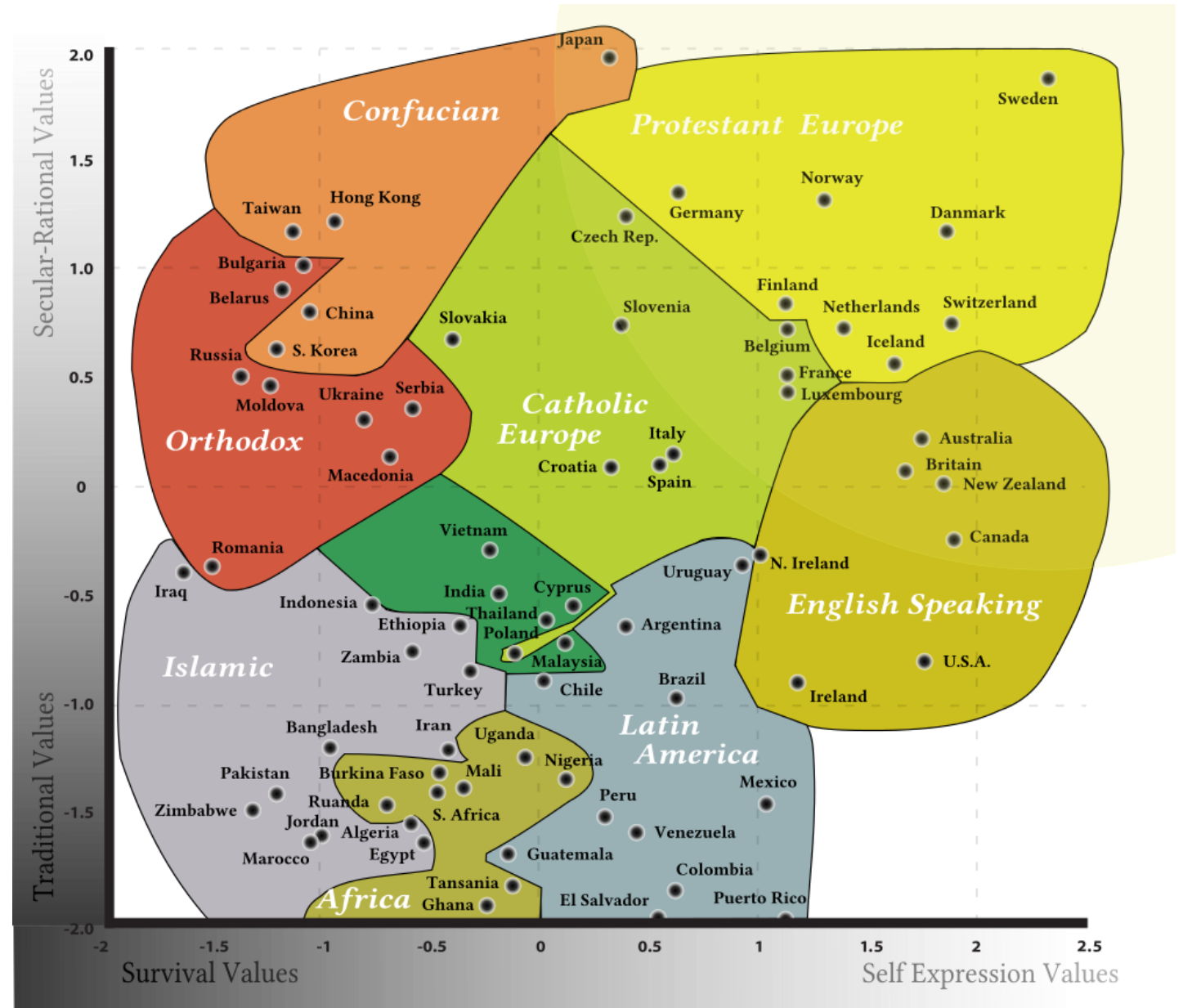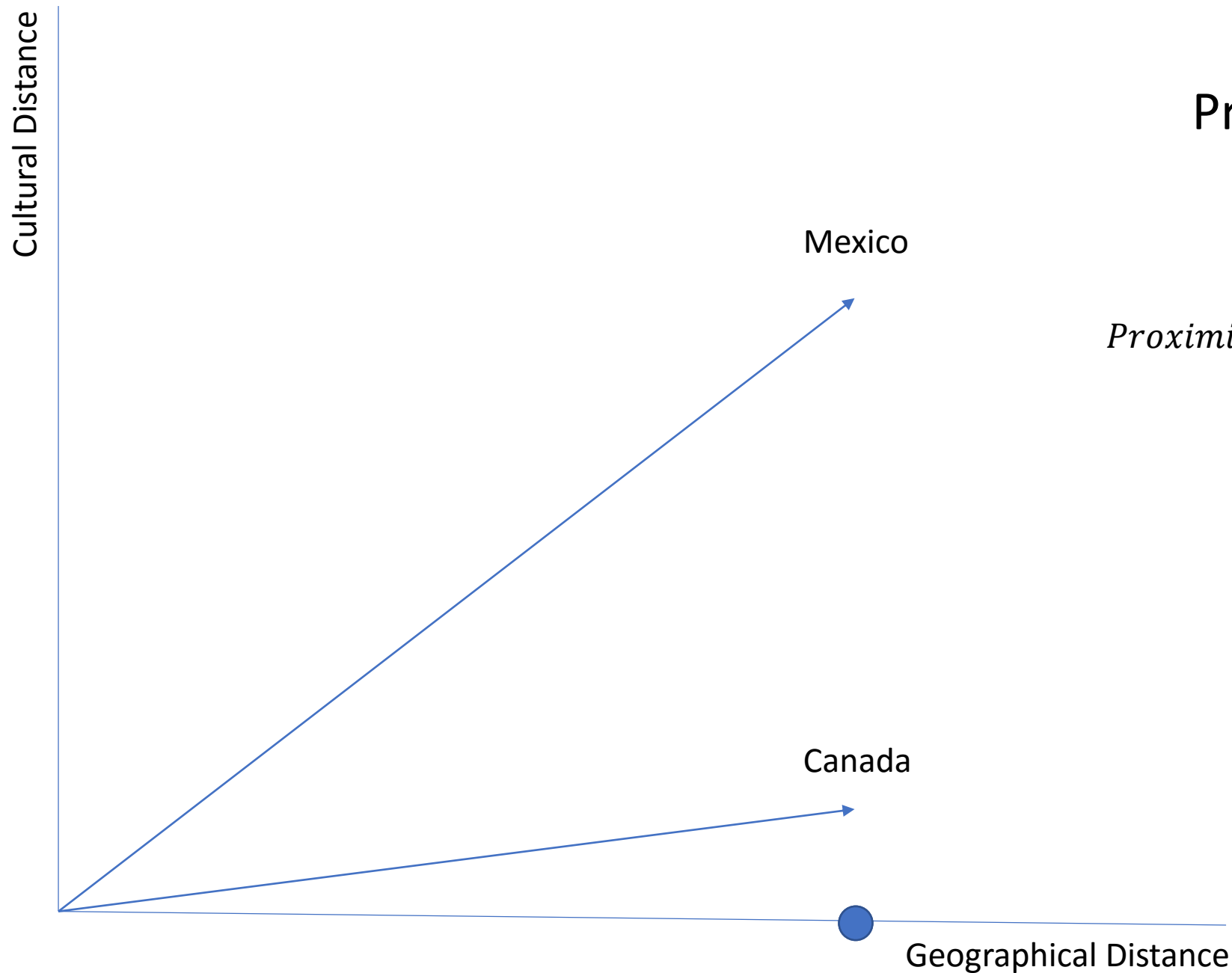
Proximity Coefficient

$$Proximity = \sqrt{Geographical^2 + Cultural^2}$$

- Geographical Distance Standardized to 4

- Cultural Distance Standardized to 4

Cultural Distance

Mexico

Canada

Geographical Distance

Gravity Model

$$FDI_{A,B} \propto \frac{(GDP_A)^\alpha \, (GDP_B)^\beta}{(Dist_{AB})^\zeta}$$

$$\ln FDI = \alpha + \beta \, \frac{\ln(GDP_A) \big/ \ln(GDP_B)}{Proximity_{AB}} + \varepsilon$$

Source	SS	df	MS
Model	30.6529534	1	30.6529534
Residual	103.113001	98	1.05217348
Total	133.765954	99	1.35117126

Number of obs =	100
F(1, 98) =	29.13
Prob > F =	0.0000
R-squared =	0.2292
Adj R-squared =	0.2213
Root MSE =	1.0258

FDI	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP	.3036363	.056255	5.40	0.000	.1920001	.4152725
_cons	.1342232	.1025963	1.31	0.194	-.0693757	.3378222
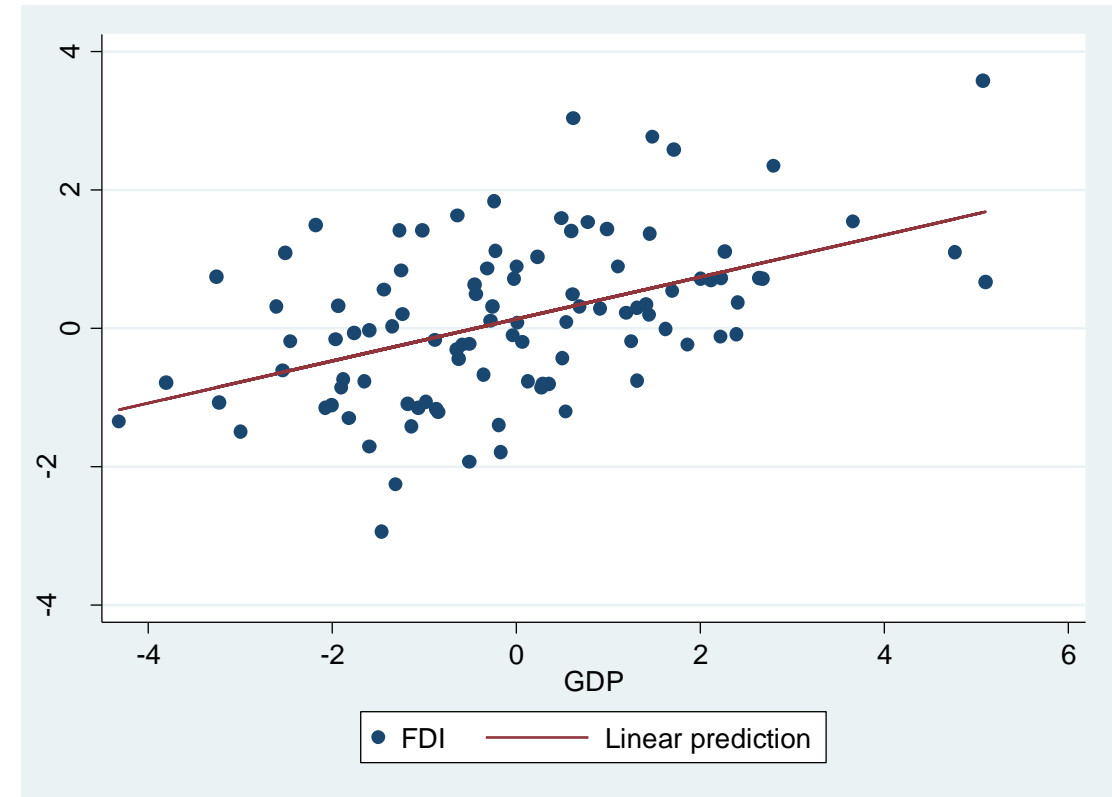
Policy Implications?

- If the size of the economies adjusted by the coefficient of proximity roughly accounts for a fifth of the variation observed within FDI inflows, then the good news is that 80% of what makes FDI tick may be influenced directly or indirectly by growth-enhancing economic policies.

- It could also be the case that the magnitude of international trade and its effect on FDI creates a path towards cultural converge, if maybe domain specific.

- The cultural steady-state may then produce spillovers to adjacent economies that would reap the benefits of the enhanced familiarity between trading nations.