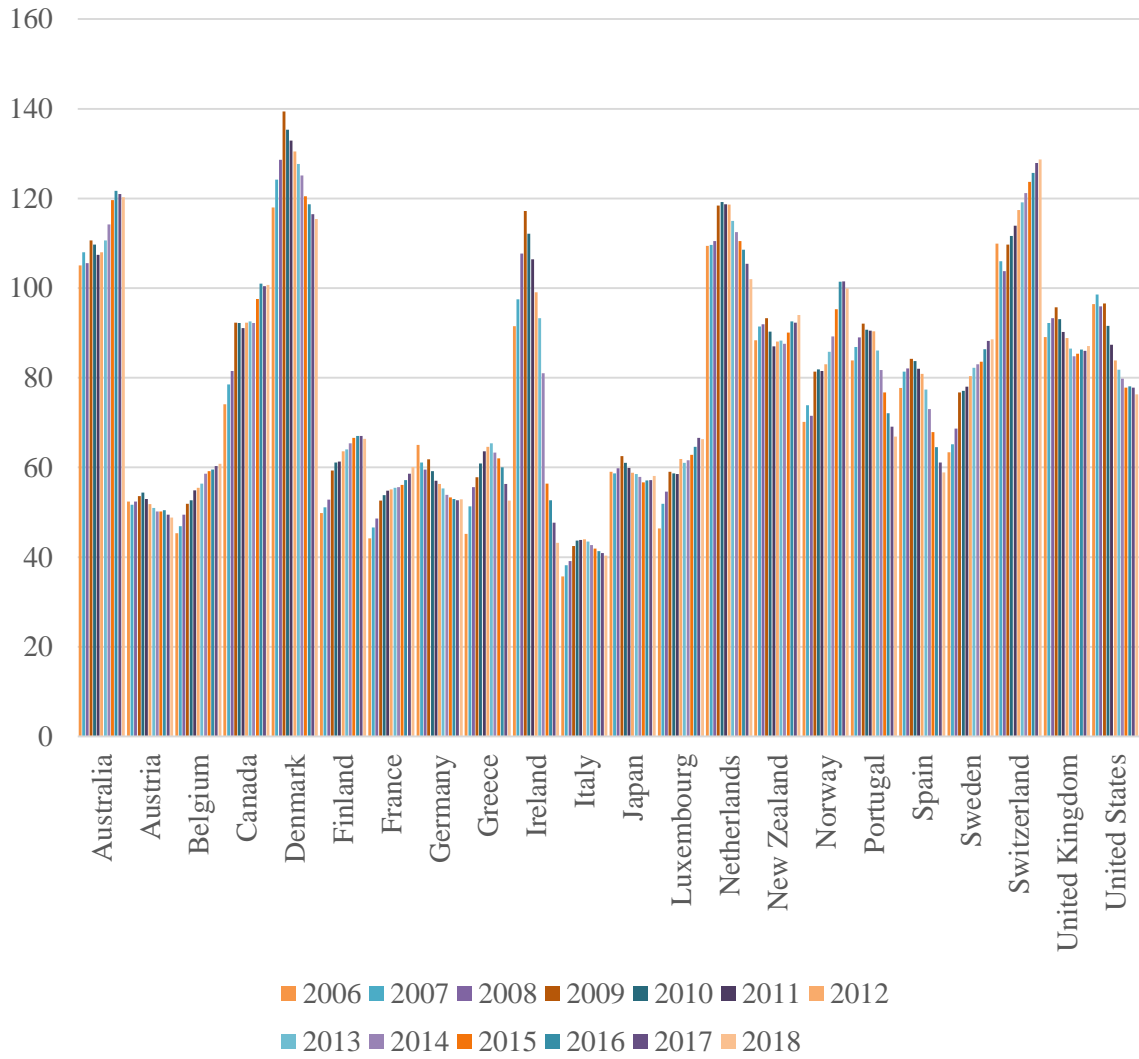
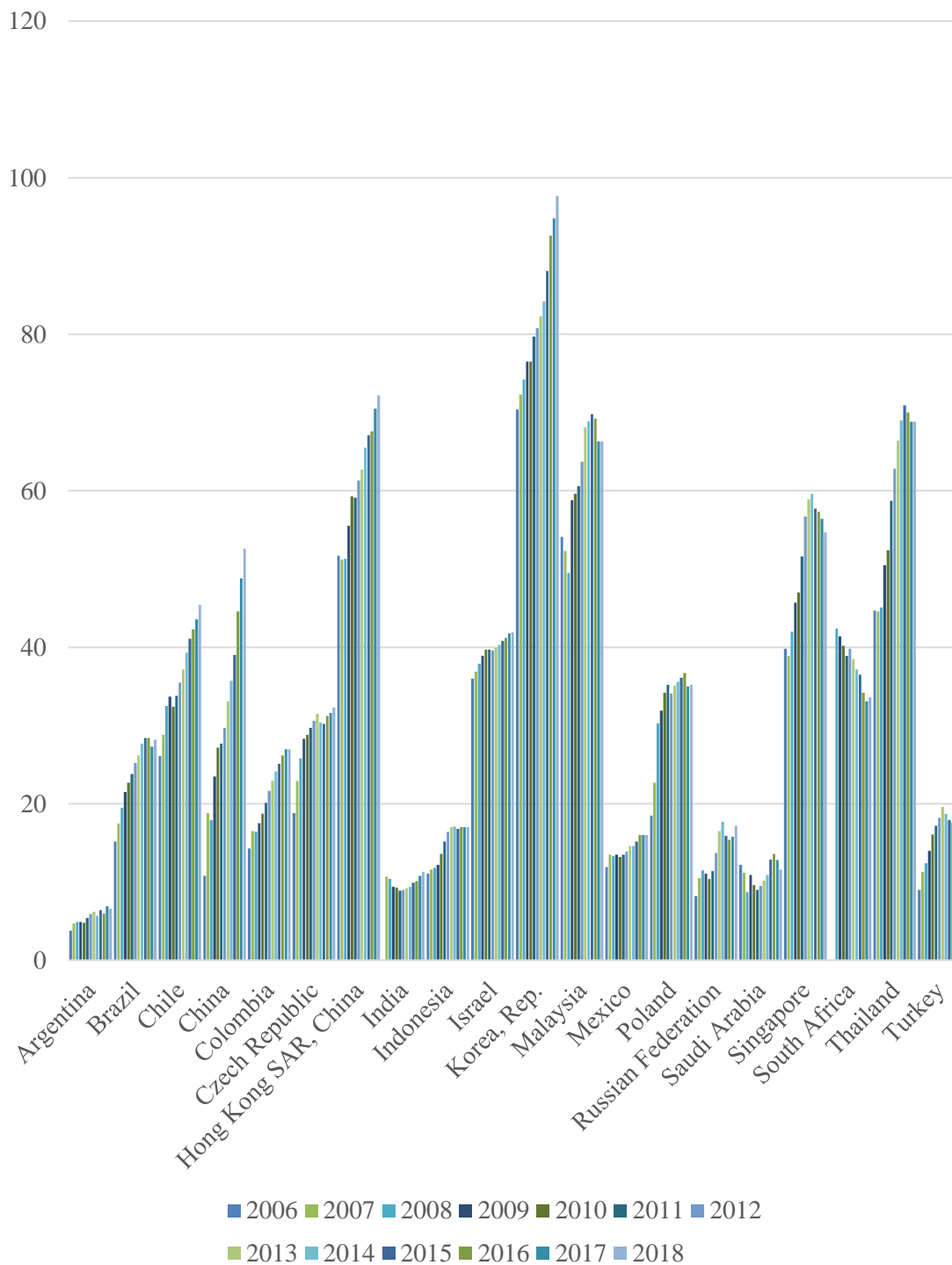


APPENDIX

7.1 Household debt trend in Advanced Economies



7.2 Household debt trend in Emerging Economies



7.3 Panel Unit Root

Variable	Level		First Difference	
	Constant	Model with trend	Constant	Model with trend
GDPPCG	-21.64***	-23.75***	-34.6881***	-34.6843***
GCF	-6.4521***	-9.9118***	-28.2246***	-28.4221***
POPG	-3.2135***	-6.9426***	-22.6590***	-22.6144***
HC	-1.3489*	-0.9021	-20.1094***	-23.0063***
TO	2.8969	-7.5185***	-28.1399***	-28.2940***
INF	-10.7067***	-14.4135***	-32.1146***	-32.2212***
HD	4.7809	2.6546	-11.0252***	-12.1205***
INS	-4.6382***	-5.8806***	-19.4401***	-19.5996***
GDPPC	15.5877	2.2974	-20.5974***	-22.4611***
UN	-0.9763	-2.0481**	-12.7455***	-13.2956***
WPOP	8.2782	9.1570	0.3469	-2.0269**
LIR	0.2021	-7.2090***	-18.9822***	-19.2687***
CON	12.8019	2.4126	-13.4853***	-15.2094***
HPI	10.4918	3.6708	-8.3283***	-10.5309***
FD	0.0395	-3.1343***	-22.5699***	-23.1975***

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7.4 Static panel analysis RO1 & RO2

Dependent variables = GDPPCG						
Independent variables	Household debt			Household debt and institutional quality		
	POLS	RE	FE	POLS	RE	FE
GCF	0.210*** (0.015)	0.204*** (0.018)	0.203*** (0.021)	0.239*** (0.016)	0.250*** (0.019)	0.309*** (0.027)
POPG	-0.484*** (0.108)	-0.796*** (0.142)	-1.032*** (0.184)	-0.669*** (0.114)	-1.009*** (0.147)	-1.590*** (0.205)
LIFE	-0.143*** (0.024)	-0.113*** (0.032)	-0.150*** (0.047)	-0.088*** (0.027)	-0.064* (0.035)	-0.071 (0.059)
TO	0.005*** (0.001)	0.008*** (0.002)	0.027*** (0.004)	0.005*** (0.001)	0.008*** (0.002)	0.033*** (0.005)
INF1	-0.017* (0.009)	-0.027*** (0.010)	-0.039*** (0.011)	-0.000 (0.009)	-0.006 (0.010)	-0.011 (0.011)
HD	-0.011*** (0.003)	-0.024*** (0.005)	-0.040*** (0.007)	-0.017*** (0.004)	-0.030*** (0.005)	-0.055*** (0.008)
INS				0.056** (0.024)	0.070** (0.028)	0.026 (0.041)
Constant	8.690*** (1.856)	7.165*** (2.356)	9.511*** (3.317)	2.749 (2.087)	0.944 (2.641)	0.721 (4.492)
Observations	1,268	1,268	1,268	1,101	1,101	1,101
R-squared	0.227		0.181	0.242		0.240
F	61.83***		44.98***	49.78***		47.36***
LM test		89.96***			39.85***	
Wald test			1515.92***			1157.08***
Hausman test			50.23***			84.42***
Serial test			51.612***			42.90***
Wu-Hausman test	2.405			2.063		
Number of country1	43	43	43	43	43	43
*** p<0.01, ** p<0.05, * p<0.10						

LM test stands for Breush and Pagan Lagrangian multiplier test for random effects, Wald test to check heteroskedasticity, Hausman test to check for suitability random or fixed analysis, Serial test is Wooldridge test for autocorrelation and Wu-Hausman test is to confirm the endogeneity problem. H0 denotes there is no specific problem. H1 denotes there is existing of specific problem. P-value with level of significance *** p<0.01, ** p<0.05, * p<0.10.

7.5 Static panel analysis RO3

Dependent variables = Household Debt						
Independent variables	Baseline model			With financial development		
	POLS	RE	FE	POLS	RE	FE
GDPPC	-0.055 (0.096)	-0.765*** (0.127)	-0.799*** (0.134)	-0.022 (0.088)	-0.747*** (0.125)	-0.827*** (0.133)
UN	-0.177*** (0.029)	0.021 (0.026)	0.044* (0.026)	-0.167*** (0.027)	0.017 (0.026)	0.043* (0.026)
WPOP	0.615* (0.353)	0.611* (0.324)	0.513 (0.324)	-0.666* (0.344)	0.732** (0.323)	0.600* (0.324)
LIR	-0.008*** (0.002)	0.001 (0.002)	0.005** (0.002)	-0.004* (0.002)	0.006** (0.002)	0.009*** (0.003)
INF	-0.114*** (0.015)	-0.053*** (0.008)	-0.047*** (0.008)	-0.080*** (0.014)	-0.047*** (0.008)	-0.042*** (0.008)
CON	0.539*** (0.099)	1.524*** (0.130)	1.744*** (0.135)	0.341*** (0.093)	1.372*** (0.128)	1.650*** (0.137)
HPI	0.207*** (0.051)	0.309*** (0.035)	0.257*** (0.037)	0.071 (0.048)	0.267*** (0.036)	0.233*** (0.037)
FD				0.794*** (0.068)	0.304*** (0.057)	0.234*** (0.059)
Constant	-3.715** (1.567)	-6.818*** (1.420)	-8.035*** (1.468)	4.161*** (1.598)	-5.770*** (1.413)	-7.038*** (1.482)
Observations	769	769	769	764	764	764
R-squared	0.612		0.663	0.671		0.668
F	171.49***		202.87***	192.57***		179.52***
LM test		3283.5***			2755.54**	
Wald test			42233.6***			34599.53***
Hausman test			39.37***			51.09***
Serial test			84.246***			88.948***
Wu-Hausman test	0.3331			0.0642		
Number of country1		41	41		41	41
Standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.10						

LM test stands for Breush and Pagan Lagrangian multiplier test for random effects, Wald test to check heteroskedasticity, Hausman test to check for suitability random or fixed analysis, Serial test is Wooldridge test for autocorrelation and Wu-Hausman test is to confirm the endogeneity problem. H0 denotes there is no specific problem. H1 denotes there is existing of specific problem. P-value with level of significance *** p<0.01, ** p<0.05, * p<0.10.

7.6 Analysis on financial development in the household debt-growth relationship

Independent variables	AH	AB	BB	AH	AB	BB
L.GDPPCG	-0.290*** (0.058)	-0.300*** (0.055)	-0.248*** (0.060)	-0.278*** (0.058)	-0.289*** (0.055)	-0.235*** (0.060)
GCF	0.268*** (0.038)	0.270*** (0.037)	0.267*** (0.042)	0.264*** (0.038)	0.268*** (0.037)	0.265*** (0.042)
POPG	-1.198*** (0.288)	-1.191*** (0.280)	-1.185*** (0.315)	-1.188*** (0.287)	-1.184*** (0.279)	-1.175*** (0.315)
LIFE	-0.144** (0.068)	-0.147** (0.066)	-0.137* (0.076)	-0.143** (0.068)	-0.145** (0.066)	-0.135* (0.076)
TO	0.027*** (0.005)	0.027*** (0.004)	0.028*** (0.005)	0.028*** (0.005)	0.028*** (0.004)	0.029*** (0.005)
INF	-0.017 (0.014)	-0.017 (0.014)	-0.016 (0.015)	-0.023 (0.015)	-0.023 (0.014)	-0.022 (0.016)
HD	-0.053*** (0.006)	-0.054*** (0.006)	-0.057*** (0.007)	-0.073*** (0.016)	-0.075*** (0.016)	-0.079*** (0.018)
FD	1.241 (0.772)	1.332* (0.748)	1.354 (0.851)	-0.333 (1.419)	-0.293 (1.378)	-0.352 (1.564)
HD*FD				0.031 (0.023)	0.033 (0.022)	0.034 (0.026)
Observations	218	218	218	218	218	218
Number of country	43	43	43	43	43	43

Notes: GDPPCG = Gross domestic product per capita growth (as dependent variable), GCF = gross capital formation, POPG = population growth, HC = human capital, TO = trade openness, INF = inflation, HD = household debt, FD = financial development, and HD*FD = interaction term. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$, in which the null hypothesis is rejected. Standard error is in the parentheses ().