Pay it Forward (Digitally): Sizing up the Global Impact of Electronic Wages on Digital Payment Usage

Statistical Appendix

This statistical appendix presents modeling results referenced in the main analysis. The two tables contained in the appendix are described below:

- **A.1. Probit Selection (Adoption) Models:** Presents the results of the adoption models at the global and regional levels. The coefficients in A.1 do not represent marginal effects and should not be interpreted as magnitudes.

- **A.2: Usage Models:** These are the main models in the report and correspond to Figures 3 and 4. The coefficients in A.2 represent marginal effects. Table A.2 also contains the IMR coefficients. As discussed in the main analysis, the standard errors underlying these models are clustered by country. Additionally, note that the Heckman procedure calls for modeling cases in the second stage that had positive outcome variables in the first stage. Therefore, the sample sizes are lower than in the adoption models.

Table A.1: Probit Selection (Adoption) Models

	Dependent Variable: Electronic Payment Instrument								
	Global (1)	EAP (2)	ECA (3)	HI-OECD (4)	HI-Other (5)	LAC (6)	MENA (7)	SAS (8)	SSA (9)
Age: 30-44	0.307***	0.431***	0.231***	0.254***	0.188***	0.275***	0.473***	0.388***	0.191***
	(0.011)	(0.035)	(0.030)	(0.051)	(0.053)	(0.029)	(0.036)	(0.038)	(0.022)
Age: 45-59	0.400***	0.479***	0.239***	0.268***	0.169***	0.234***	0.536***	0.438***	0.268***
	(0.012)	(0.040)	(0.031)	(0.053)	(0.051)	(0.034)	(0.042)	(0.044)	(0.028)
Age: 60 and Up	0.806***	0.561***	0.576***	0.901***	0.456***	0.556***	0.956***	0.707***	0.422***
	(0.014)	(0.051)	(0.034)	(0.066)	(0.051)	(0.040)	(0.056)	(0.055)	(0.034)
Education: Secondary	0.462***	0.468***	0.387***	0.425***	0.338***	0.324***	0.256***	0.359***	0.484***
	(0.010)	(0.031)	(0.025)	(0.050)	(0.039)	(0.027)	(0.034)	(0.036)	(0.021)
Education: Tertiary	0.897***	1.176***	0.808***	0.494***	0.803***	0.825***	0.878***	0.729***	1.007***
	(0.017)	(0.061)	(0.039)	(0.063)	(0.074)	(0.044)	(0.053)	(0.096)	(0.080)
Sex: Female	-0.040***	-0.087***	-0.012	-0.002	-0.001	-0.130***	-0.277***	0.088***	-0.063***
	(0.009)	(0.028)	(0.023)	(0.040)	(0.035)	(0.024)	(0.033)	(0.034)	(0.019)
Employed	0.303***	-0.067**	0.438***	0.430***	0.403***	0.279***	0.327***	0.228***	0.375***
	(0.009)	(0.030)	(0.024)	(0.045)	(0.039)	(0.027)	(0.034)	(0.033)	(0.021)
Income: Second 20%	0.041***	0.051	0.091***	0.026	0.183***	0.064*	0.062	0.070	0.143***
	(0.013)	(0.041)	(0.033)	(0.055)	(0.046)	(0.036)	(0.047)	(0.048)	(0.029)
Income: Middle 20%	0.041***	-0.022	0.158***	0.173***	0.254***	0.076**	0.133***	-0.023	0.211***
	(0.013)	(0.042)	(0.034)	(0.058)	(0.051)	(0.036)	(0.048)	(0.048)	(0.029)
Income: Fourth 20%	0.055***	0.043	0.247***	0.258***	0.280***	0.129***	0.145***	0.048	0.212***
	(0.013)	(0.044)	(0.035)	(0.061)	(0.054)	(0.037)	(0.048)	(0.049)	(0.029)
Income: Richest 20%	0.122***	0.133***	0.322***	0.420***	0.313***	0.317***	0.342***	-0.056	0.351***
	(0.014)	(0.047)	(0.037)	(0.067)	(0.060)	(0.039)	(0.050)	(0.052)	(0.030)
Internet Access	0.577***	0.644***	0.506***	0.200***	0.756***	0.610***	0.017	0.487***	0.644***
	(0.010)	(0.036)	(0.031)	(0.061)	(0.047)	(0.029)	(0.038)	(0.041)	(0.022)
Mobile Owner	0.527***	0.606***	0.422***	0.332***	0.432***	0.332***	0.293***	0.282***	0.754***
	(0.014)	(0.054)	(0.046)	(0.098)	(0.059)	(0.039)	(0.059)	(0.037)	(0.023)
Worried Age: Somewhat	0.156***	-0.086*	0.240***	0.190***	0.269***	0.107***	0.105**	-0.112**	0.037
	(0.013)	(0.046)	(0.032)	(0.055)	(0.046)	(0.038)	(0.043)	(0.054)	(0.032)
Worried Age: Very	0.138***	-0.322***	0.231***	0.127*	0.294***	0.197***	0.153***	0.190***	0.010
	(0.014)	(0.052)	(0.038)	(0.070)	(0.059)	(0.042)	(0.047)	(0.055)	(0.030)
Worried Med.: Somewhat	-0.178***	0.053	0.057	0.082	-0.096**	-0.044	-0.099**	-0.102	-0.158***
	(0.014)	(0.049)	(0.036)	(0.057)	(0.048)	(0.043)	(0.049)	(0.064)	(0.037)
Worried Medical: Very	-0.324***	0.014	0.016	-0.055	-0.359***	-0.042	-0.230***	-0.149**	-0.160***
	(0.015)	(0.054)	(0.040)	(0.068)	(0.057)	(0.046)	(0.052)	(0.066)	(0.035)
Worried Bills: Somewhat	-0.129***	-0.114***	-0.072**	-0.085	-0.207***	0.063*	0.032	0.098*	0.141***
	(0.013)	(0.042)	(0.031)	(0.055)	(0.046)	(0.038)	(0.043)	(0.054)	(0.029)
Worried Bills: Very	-0.215***	-0.200***	-0.135***	-0.028	-0.282***	-0.059	-0.186***	-0.013	0.061**
	(0.014)	(0.048)	(0.037)	(0.070)	(0.057)	(0.042)	(0.048)	(0.055)	(0.028)
Constant	-0.881***	-0.742***	-1.346***	-0.350***	0.076	-1.268***	-1.172***	-0.715***	-1.363***
	(0.020)	(0.075)	(0.058)	(0.114)	(0.080)	(0.059)	(0.078)	(0.074)	(0.043)
Observations	120,914	11,221	16,924	8,812	30,711	13,875	8,573	7,490	23,308
Log Likelihood	-56,620.26	-5,434.94	-8,772.12	-2,589.44	-3,039.49	-8,099.63	-5,009.25	-4,545.99	-12,339.41
Akaike Inf. Crit.	113,280.500	10,909.880	17,584.230	5,218.872	6,118.984	16,239.270	10,058.510	9,131.974	24,718.810

Note: *p<0.1; **p<0.05; ***p<0.01

EAP (East Asia & Pacific); ECA (Europe & Central Asia); HI-OECD (High Income OECD); HI-Other (High Income Non-OECD);
LAC (Latin America & Caribbean); MENA (Middle East & North Africa); SAS (South Asia); SSA (Sub-Saharan Africa)

Categorical variable baselines: Age (15-29); Education (Primary or less); Income (Poorest 20%); Worried (Not at all)

Table A.2: Usage Models (Marginal Effects)

	Global (1)	EAP (2)	ECA (3)	HI-OECD (4)	HI-Other (5)	LAC (6)	MENA (7)	SAS (8)	SSA (9)
	Dependent Variable: Made Digital Merchant Payment								
Electronic Wages	0.170***	0.253***	0.145***	0.210***	0.082***	0.187***	0.004	0.085***	0.194***
	(0.015)	(0.037)	(0.020)	(0.067)	(0.026)	(0.018)	(0.015)	(0.024)	(0.020)
Age: 30-44	-0.028**	-0.043	-0.059**	-0.055	-0.035**	-0.030	-0.101**	-0.014	0.014
	(0.012)	(0.045)	(0.029)	(0.036)	(0.016)	(0.028)	(0.044)	(0.019)	(0.026)
Age: 45-59	-0.066***	-0.043	-0.155***	-0.129***	-0.101***	-0.014	-0.123**	-0.010	0.015
	(0.016)	(0.050)	(0.025)	(0.036)	(0.020)	(0.038)	(0.053)	(0.011)	(0.028)
Age: 60 and Up	-0.134***	-0.246***	-0.237***	-0.173**	-0.142***	-0.023	-0.163**	-0.043	-0.006
	(0.038)	(0.080)	(0.052)	(0.080)	(0.036)	(0.063)	(0.073)	(0.049)	(0.059)
Education: Secondary	0.047	-0.123*	0.167***	0.041	0.095**	0.161***	0.035	0.066**	0.104*
	(0.055)	(0.069)	(0.048)	(0.065)	(0.046)	(0.046)	(0.023)	(0.028)	(0.054)
Education: Tertiary	0.113*	-0.101	0.242***	0.031	0.157***	0.279***	0.096*	0.138*	0.242***
	(0.059)	(0.084)	(0.077)	(0.097)	(0.050)	(0.104)	(0.056)	(0.074)	(0.093)
Sex: Female	0.013*	0.037***	0.017	0.070***	0.004	-0.050***	-0.026	-0.047**	0.004
	(0.007)	(0.014)	(0.013)	(0.024)	(0.008)	(0.018)	(0.025)	(0.019)	(0.012)
Employed	-0.036	-0.126***	-0.017	-0.031	0.043***	0.022	-0.029	0.002	0.021
	(0.029)	(0.037)	(0.039)	(0.048)	(0.016)	(0.038)	(0.037)	(0.027)	(0.029)
Income: Second 20%	0.019**	-0.025	0.033	0.038	0.039***	0.004	-0.061*	0.040	0.024
	(0.009)	(0.029)	(0.024)	(0.026)	(0.014)	(0.031)	(0.035)	(0.029)	(0.019)
Income: Middle 20%	0.033***	-0.009	0.055*	0.085**	0.066***	0.043**	-0.047	0.036**	0.026
	(0.010)	(0.026)	(0.028)	(0.042)	(0.017)	(0.017)	(0.034)	(0.018)	(0.031)
Income: Fourth 20%	0.041***	-0.008	0.078**	0.099**	0.063***	0.089**	-0.033	0.088***	0.015
	(0.013)	(0.055)	(0.030)	(0.046)	(0.018)	(0.038)	(0.035)	(0.027)	(0.028)
Income: Richest 20%	0.060***	-0.036	0.111***	0.106*	0.090***	0.175***	0.025	0.132***	0.020
	(0.016)	(0.061)	(0.031)	(0.061)	(0.020)	(0.060)	(0.035)	(0.021)	(0.034)
Internet Access	0.177***	0.031	0.159***	0.292***	0.180***	0.199	0.136***	0.101***	0.114**
	(0.025)	(0.067)	(0.041)	(0.046)	(0.053)	(0.121)	(0.038)	(0.039)	(0.054)
Mobile Owner	0.122***	0.067	-0.003	-0.053	0.397***	0.066	-0.012	0.030	0.041
	(0.037)	(0.056)	(0.057)	(0.058)	(0.046)	(0.056)	(0.042)	(0.025)	(0.076)
IMR	-0.136	-0.533***	-0.146	-0.227	0.364	0.106	-0.123	-0.073	0.017
	(0.089)	(0.200)	(0.154)	(0.290)	(0.228)	(0.231)	(0.103)	(0.081)	(0.131)
Constant	-0.947***	1.335*	-0.544	-0.790	-1.922***	-1.716	-0.618	-1.848***	-1.421**
	(0.357)	(0.741)	(0.530)	(0.710)	(0.294)	(1.217)	(0.705)	(0.447)	(0.664)
Observations	90,772	8,502	12,544	8,083	30,158	8,816	4,054	4,510	14,105
Log Likelihood	-51,073.95	-3,840.82	-6,797.60	-4,630.50	-18,803.13	-4,810.31	-1,463.97	-1,293.81	-6,510.49
Akaike Inf. Crit.	102,179.900	7,713.643	13,627.190	9,292.994	37,638.260	9,652.624	2,959.932	2,619.623	13,052.99

Note: *p<0.1; **p<0.05; ***p<0.01

EAP (East Asia & Pacific); ECA (Europe & Central Asia); HI-OECD (High Income OECD); HI-Other (High Income Non-OECD); LAC (Latin America & Caribbean); MENA (Middle East & North Africa); SAS (South Asia); SSA (Sub-Saharan Africa)

Categorical variable baselines: Age (15-29); Education (Primary or less); Income (Poorest 20%)