

Supplementary material (Online material)

Table 1. Top export commodities from Vietnam and share of trading partners.

We provide the share of top ten trade partners of selected key Vietnamese export commodities defined in accordance to SITC Rev.2.

Apparel and clothing accessories		Footwear		Fish, crustacean and Mollusca, and preparations		Coal, coke and briquettes		Office machines and automatic data processing equipment		Electric machinery, apparatus and appliances, and parts	
Trading partners	Share of exports (%)	Trading partners	Share of exports (%)	Trading partners	Share of exports (%)	Trading partners	Share of exports (%)	Trading partners	Share of exports (%)	Trading partners	Share of exports (%)
US	50.16	US	16.29	Japan	25.26	China	59.32	US	16.24	Japan	42.15
Japan	13.25	Germany	13.75	US	23.43	Japan	17.35	China	13.04	China	12.40
Germany	7.41	United	11.38	Rep. of Korea	7.26	Rep. of	6.44	Thailand	10.24	Thailand	8.76
France	3.67	France	9.41	Germany	3.30	Thailand	3.57	Germany	7.26	Philippines	6.80
United	3.64	Belgium	5.57	Australia	3.11	India	2.51	Singapore	5.82	US	6.40
Spain	2.87	Spain	4.93	Italy	2.89	Malaysia	1.47	Japan	4.88	China, Hong	4.58
Rep. of	2.49	Italy	4.76	China, Hong	2.79	Bulgaria	1.34	Philippines	3.72	Rep. of Korea	4.05
Canada	2.17	Netherlan	3.22	Spain	2.77	Belgium	1.13	Netherlands	3.38	Singapore	2.98
Netherlan	1.45	Japan	2.86	France	2.54	Philippine	1.13	China, Hong Kong	3.14	Malaysia	1.83
Italy	1.37	Mexico	2.41	Canada	2.32	France	0.98	France	3.13	Indonesia	1.08
Belgium	1.28	Canada	1.89	Netherlands	2.23	Germany	0.71	Russian Federation	2.99	Mexico	1.03

Source: United Nation Trade Statistics, 2011.

Table 2. Common statistics on exports from Vietnam by trading partner.

This table presents the common statistics on the dependent variable, export value denoted as $\ln X_{ijt}$. These are presented for the full sample and regional panels from a sample of 54 key trading partners of Vietnam. The six regional panels are: SMAFRICA (Africa); SMAMERICA (the Americas and Asia Pacific); SMEUROPE (Europe); SMASIAH; SMASIAM; and SMASIAL (Asian trading partners grouped by high-, middle- and low-income economies).

	Full Sample	SMAFRICA	SMAMERICA	SMEUROPE	SMASIAH	SMASIAM	SMASIAL
Mean	3.19E+08	32822965	4.70E+08	1.76E+08	6.66E+08	5.13E+08	1.91E+08
Median	31994000	8715000	15850000	32500000	1.18E+08	68449000	39700000
Std. Dev.	2.688	2.223	2.970	2.534	2.766	2.655	2.484
Jarque-Bera	113.790	22.484	13.241	68.362	38.649	10.054	9.098
Probability	0.000	0.000	0.001	0.000	0.000	0.007	0.011

Table 3. Common statistics on the determinants of Vietnam's exports.

This table displays common statistics on the independent variables for the total sample and regional panels: Africa (SMAFRICA); America (SMAMERICA); and Europe (SMEUROPE). These include: (i) the size of economy, measured as the product of Vietnamese GDP (country *i*) and a trading partner's GDP (country *j*) - *Y*; (ii) the standard of living - *PY*, constructed as the product of Vietnamese per capita GDP and a trading partner's per capita GDP, measuring the level of economic development; (iii) the difference of endowment between Vietnam, *i*, and a trading partner *j*, that is measured as the absolute value of the difference between Vietnamese per capita GDP and a trading partner's per capita GDP - *DPY*; (iv) exchange rate of Vietnam currency against its trading partner captures the impact of depreciation of Vietnam currency on the value of exports, measured by the nominally official exchange rates (*ERN*); (v) *VNTRADE* and *PTRADE* measure the degree of openness for Vietnam and trading partners, designed by the ratio of total trade value and GDP; (vi) trade is impeded by the transit costs that are proxied by the distance between Vietnam and its trading partners (*DIST*).

WHOLE SAMPLE	Control Variables						
	Y	PY	DPY	ERN	VNTRADE	PTRADE	DIST
Mean	2.87E+22	8310755	14119.22	1315568.3	100.1754	79.87492	7957.796
Median	4.91E+21	3151737	8328.676	587.8213	97.00125	63.42195	8003.735
Maximum	1.55E+24	1.03E+08	92296.65	5.34E+07	171.0518	445.9112	18603.05
Minimum	4.49E+18	17021.4	1.713826	0	18.95049	11.31517	478.553
Std. Dev.	9.62E+22	13076323	14592.68	2.40E+08	44.20744	63.57475	4396.684
Jarque-Bera	727944.8	7168.700	422.5373	7554947.	40.78559	7648.558	35.34539
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
SMAFRICA							
Mean	5.10E+21	1181243	1581.387	1447.108	100.175	57.309	9812.616
Median	2.10E+21	590909.9	1241.287	606.1784	97.001	53.705	10370.610
Maximum	3.87E+22	8906411	6051.153	5150.707	171.052	97.321	11074.410
Minimum	1.50E+20	24350.89	1.713826	4.836857	18.950	32.685	7434.833
Std. Dev.	7.12E+21	1592796.	1441.448	1421.333	44.41370	13.78389	1486.487
Jarque-Bera	196.4851	285.9019	12.05884	10.66565	3.021155	4.729964	14.06295
Probability	0.000000	0.000000	0.002407	0.004830	0.220782	0.093951	0.000884
SMAMERICA							
Mean	5.76E+22	7117273	12364.680	7090917.3	100.1754	54.58052	14395.780
Median	5.91E+21	2972783	6699.706	7365.709	97.00125	45.04476	14906.180
Maximum	1.55E+24	57779989	47278.110	5.34E+07	171.0518	198.7668	18603.050
Minimum	3.08E+19	200622.1	1002.479	0	18.95049	13.75305	7769.680
Std. Dev.	1.88E+23	10733005	12007.16	5.55E+08	44.27972	38.99789	3320.440
Jarque-Bera	13885.08	1005.657	65.62197	44650.75	7.552887	242.3343	20.63272
Probability	0.000000	0.000000	0.000000	0.000000	0.022904	0.000000	0.000033
SMEUROPE							
Mean	2.40E+22	12668197	21379	1344636	100.1754	79.9888	8524.934
Median	6.71E+21	7335292	20947.11	12	97.00125	69.84706	8319.290
Maximum	3.49E+23	1.03E+08	92296.65	2975300	171.0518	184.4187	10549.000
Minimum	1.02E+20	158705.2	726.8937	160000	18.95049	26.2567	6737.911
Std. Dev.	4.76E+22	16200181	15495.29	321975.3	44.23130	33.21606	859.7916
Jarque-Bera	7350.939	1252.669	105.6030	642399.2	16.61635	87.31139	11.86581
Probability	0.000000	0.000000	0.000000	0.000000	0.000246	0.000000	0.002651

Table 3. continued. Common statistic on the determinants of exports.

The common statistics on the independent variables presented here belong to the Asian sub-groups: high-income Asian group (SMASIAH); middle-income Asian group (SMASIAM), and low-income Asian group (SMASIAL). These include: (i) the size of economy, measured as the product of Vietnamese GDP (country *i*) and a trading partner's GDP (country *j*) (*Y*); (ii) the standard of living (*PY*), constructed as the product of Vietnamese per capita GDP and a trading partner's per capita GDP, measuring the level of economic development; (iii) the difference of endowment between Vietnam, *i*, and a trading partner *j*, that is measured as the absolute value of the difference between Vietnamese per capita GDP and a trading partner's per capita GDP (*DPY*); (iv) exchange rate of Vietnam's Dong against its trading partner captures the impact of depreciation of Vietnam currency on the value of exports, measured by the nominally official exchange rates (*ERN*); (v) *VNTRADE* and *PTRADE* measure the degree of openness for Vietnam and trading partners, designed by the ratio of total trade value and GDP; (vi) trade is impeded by the transit costs that are proxied by the distance between Vietnam and its trading partners (*DIST*).

Control Variables							
SMASIAH	Y	PY	DPY	ERN	VNTRADE	PTRADE	DIST
Mean	3.23E+22	11536180	20678.35	2637.272	100.1754	149.2231	3978.204
Median	4.77E+21	8131792.	20018.83	2064.385	97.00125	80.79658	3672.564
Maximum	5.81E+23	54285975	49657.05	13650.75	171.0518	445.9112	7064.045
Minimum	1.92E+20	528369.1	2265.512	0.025803	18.95049	16.01212	868.0350
Std. Dev.	7.94E+22	11773403	10792.07	2833.306	44.31787	130.4575	2070.075
Jarque-Bera	4313.106	132.5240	7.325223	70.66368	5.287021	25.50847	12.24366
Probability	0.000000	0.000000	0.025665	0.000000	0.071111	0.000003	0.002194
SMASIAM							
Mean	2.78E+22	1808536.	2475.642	90631.31	100.1754	82.58685	3658.760
Median	4.46E+21	839511.3	2031.499	1602.617	97.00125	53.32741	2330.799
Maximum	6.31E+23	12357027	9227.350	2485123.	171.0518	220.4068	7428.537
Minimum	2.44E+20	29875.08	120.9070	0.288675	18.95049	13.77244	990.7018
Std. Dev.	8.43E+22	2413701.	1908.992	395297.9	44.36890	58.37346	2422.639
Jarque-Bera	5187.672	270.2028	62.57191	3804.385	3.776444	21.24804	14.91471
Probability	0.000000	0.000000	0.000000	0.000000	0.151341	0.000024	0.000577
SMASIAL							
Mean	1.08E+22	454620.5	316.9845	175.8497	100.1754	52.06145	2353.623
Median	2.36E+21	207020.8	165.7638	218.4773	97.00125	48.70263	3006.763
Maximum	1.84E+23	3605949.	1721.386	446.6086	171.0518	108.2503	3509.467
Minimum	4.49E+18	17021.40	3.461784	0.017734	18.95049	11.31517	478.5530
Std. Dev.	2.55E+22	606674.6	310.5794	167.8809	44.36890	23.96187	1108.188
Jarque-Bera	2861.913	439.7144	68.41613	15.95806	3.776444	6.261837	15.59798
Probability	0.000000	0.000000	0.000000	0.000343	0.151341	0.043678	0.000410

Table 4. Correlation between income-source variables by regional country groups.

The table presents the unconditional correlations between income-sourced variables. See Table 1 for the construction of the variables. This table is aimed at showing that there are significant multi-correlation amongst three variables above, therefore there is a need to separate them in estimation process.

	SMAFRICA			SMAMERICA			SMEUROPE			SMASIAH			SMASIAM			SMASIAL		
	LY	LPY	LDPY	LY	LPY	LDPY	LY	LPY	LDPY	LY	LPY	LDPY	LY	LPY	LDPY	LY	LPY	LDPY
LY	1.00			1.00			1.00			1.00			1.00			1.00		
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LPY	0.90	1.00		0.75	1.00		0.78	1.00		0.66	1.00		0.54	1.00		0.66	1.00	
	0.00	-----		0.00	-----		0.00	-----		0.00	-----		0.00	-----		0.00	-----	
LDPY	0.30	0.62	1.00	0.66	0.84	1.00	0.61	0.87	1.00	0.44	0.78	1.00	0.12	0.82	1.00	0.17	0.24	1.00
	0.00	0.00	-----	0.00	0.00	-----	0.00	0.00	-----	0.00	0.00	-----	0.21	0.00	-----	0.06	0.01	-----

Table 5. Granger causality results.

		LELEC				LFOSS			LRENEW		
	Null Hypothesis	Obs	F-Statistic	Prob.	E-Y hypothesis	F-Statistic	Prob.	E-Y hypothesis	F-Statistic	Prob.	E-Y hypothesis
FULL SAMPLE	LELEC does not Granger Cause LNX	1087	3.627	0.027	Growth	4.892	0.008	Feedback	1.019	0.361	Conservative
	LNX does not Granger Cause LELEC		0.620	0.538		4.946	0.007		8.849	0.000	
SMASIAH	LELEC does not Granger Cause LYN	161	11.104	0.000	Neutral	7.203	0.001	Feedback	64.479	0.000	Neutral
	LYN does not Granger Cause LELEC		1.710	0.184		8.453	0.000		19.652	0.000	
SMASIAL	LELEC does not Granger Cause LNX	106	0.844	0.433	Neutral	4.305	0.016	Growth	0.748	0.476	Conservative
	LNX does not Granger Cause LELEC		0.910	0.406		0.592	0.555		5.158	0.007	
SMEUROPE	LELEC does not Granger Cause LNX	468	4.950	0.008	Growth	6.399	0.002	Feedback	2.897	0.056	Feedback
	LNX does not Granger Cause LELEC		0.573	0.564		5.319	0.005		5.068	0.007	
SMAFRICA	LELEC does not Granger Cause LNX	66	4.941	0.010	Growth	6.436	0.003	Growth	1.068	0.350	Conservative
	LNX does not Granger Cause LELEC		1.219	0.303		0.056	0.945		2.674	0.077	
SMAMERICA	LELEC does not Granger Cause LNX	188	1.397	0.250	Growth	0.757	0.471	Neutral	1.895	0.153	Conservative
	LNX does not Granger Cause LELEC		0.005	0.995		1.473	0.232		4.634	0.011	

Table 6. Summary of long run results.

	<i>lnY</i>	<i>lnPY</i>	<i>lnDPY</i>	<i>lnERN</i>	<i>lnElectr</i>	<i>VNTRAD</i>	<i>PTRADE</i>	<i>lnDIST</i>	<i>DASEAN</i>	<i>DAPEC</i>	<i>DWTO</i>
Full Sample											
Total				+	+		-	-		+	
Fossil				+	+	+	-	-		+	
Renewable	+	+			+	+	-			+	
SMASIAH											
Total											
Fossil											
Renewable	+	+		-	+	+	+	-	-		
SMASIAL											
Total				+	+			-		+	
Fossil				+	+	+		-	+		
Renewable											
SMEUROPE											
Total											
Fossil			-	+	+	+	-	+		+	
Renewable	+	+		+	+	+	-			+	
SMAFRICA											
Total				+	+			+			-
Fossil				+	+			+			
Renewable	+	+			+						
SMAMERICA											
Total											
Fossil	+	+		+	+		-			+	
Renewable	+	+			+			-			