ERRATUM: CAPITAL FLOWS AND INCOME INEQUALITY

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In revising the paper "Capital Flows and Income Inequality," Journal of International Economics, 144, September 2023, 103776 (Liu et al., 2023), an error was made when we converted the data from private capital flows to total capital flows. This led to the incorrect conclusion that the relationships between capital flows and income inequality held for a pooled sample of advanced economies (AE) and emerging market economies (EME), which is different from the results reported in the initial submission to the Journal that the relations held only for EMEs (with private flows instead of total flows). In this erratum, we report the empirical results using the corrected definitions of total capital flows. We show that, in line with the results reported in the paper, gross and net capital inflows both have a positive impact on income inequality in the sample of EMEs, but we obtained insignificant results for the sample of advanced economies.

While we regret the error, the finding that capital inflows have a significant impact on inequality only for EMEs is consistent with our model's mechanism. Our model implies that both financial frictions and capital-skill complementarity are important for driving the positive relations between capital inflows and income inequality. Empirical evidence suggests that information and financial frictions are more pervasive in EMEs than in advanced economies [e.g. Kose et al. (2010) and Calice and Zhou (2018)] and there is also evidence of stronger capital-skill complementary in EMEs than in advanced economies [Duffy et al. (2004)]. Thus, the absence of a significant impact of capital flows on inequality in advanced economies is not surprising.

In this erratum, we reproduce the tables in the paper using the corrected sample. We also reproduce the appendix tables for the EME sample to demonstrate that the results for gross and net capital inflows are consistent with those reported in the paper and generally robust. Our EME sample contains 59 countries for the period from 2001 to 2020.

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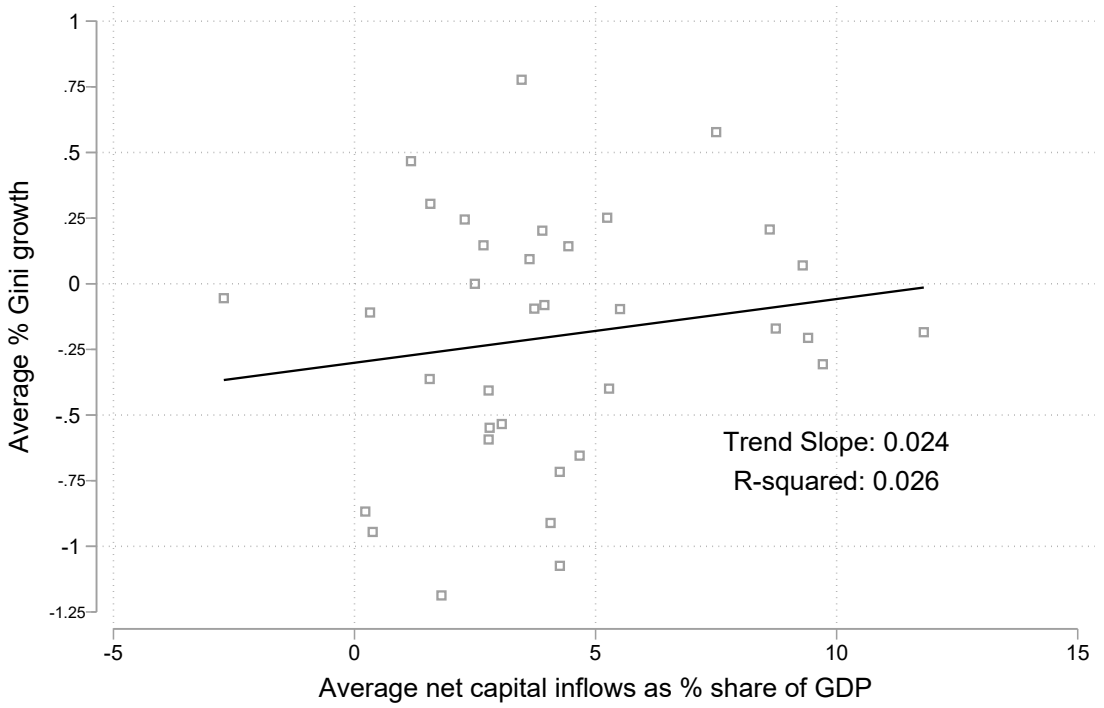

FIGURE 1. Average annual percentage growth rate in the Gini coefficient and average net capital inflows (as a share of GDP) in 35 emerging market economies, each with a population size above two million, over the years from 2001 to 2020. The regression line reports univariate regression. See the text for variable definitions and data sources.

We first reproduce the scatter plot in Figure 1 of the paper, which shows a positive relationship between average growth in the Gini coefficient and net capital inflows for a cross-section of 35 EMEs for which we have at least 10 years of data between 2001 and 2020.

We next reproduce Tables 1 and 2 in the paper for our sample of 59 EMEs. Table 1 displays the summary statistics for the EME sample. The data again show a lot of variability, with substantive outliers in both changes in the GINI coefficient and capital flows. To mitigate the influence of outliers in our sample, we winsorize the data at the 2.5-97.2 percent levels as we did in the paper.

Table 2 reproduces the regression results in the paper, but using the EME sample. The estimates from the baseline specification (Columns (1) and (2)) show that an increase in gross or net capital inflows is associated with an increase in income

TABLE 1. Summary Statistics

Variables	N	Mean	Std. Dev.	Min	Max
GGINI	726	-0.002	0.007	-0.025	0.039
INFLOWS	726	0.083	0.099	-0.410	0.763
OUTFLOWS	726	0.035	0.075	-0.427	0.552
NINFLOWS	726	0.048	0.080	-0.370	0.542

Note: Summary statistics of the data sample for the baseline regressions. $GGINI$ denotes the change in the GINI coefficient, $INFLOWS$ denotes total gross capital inflows, $OUTFLOWS$ denotes total gross capital outflows, and $NINFLOWS$ denotes total net capital inflows. See the text for detailed descriptions of these variables.
Source: IMF International Balance of Payments Statistics and the Standardized World Income Inequality Database.

inequality, whereas the impact of gross outflows is insignificant. The estimated coefficients on gross and net inflows are both statistically significant at the 1% confidence level. Based on the summary statistics in Table 1, the point estimates suggest that a one-standard-deviation increase in gross inflows is associated on average with a 0.26 percentage point increase in the annual growth rate of the Gini coefficient ($0.099 \times 0.026 \times 100 \approx 0.26$), while a one standard deviation increase in net inflows is associated with a 0.14 percentage point increase in the growth rate of Gini ($0.08 \times 0.018 \times 100 \approx 0.14$).

The remaining columns correspond to those in the original Table 2. Columns (3) and (4) report the regression results when we replace the Chinn-Ito index of overall capital account openness by the Fernández et al. (2016) indices, which measure restrictions on inflows and outflows separately, as conditioning variables. Using this alternative conditioning variable reduces our sample coverage and results in insignificant estimates of the coefficients on gross and net capital inflows. In addition, the estimated coefficient for capital outflows is significantly but with the wrong sign. Columns (5) and (6) drop all conditioning variables to demonstrate that our baseline estimation results are not driven by them. These results are qualitatively similar to those obtained from the baseline specification, indicating that increases in gross or net capital inflows raise inequality at a 1% confidence level, while increases in gross outflows continue to enter insignificantly.

We have also estimated the same set of empirical specifications using our sample of 26 advanced economies. These results are shown in Table 3. None of the variables of interest enters significantly, with the exception of net inflows, which enters with the incorrect negative sign at a 10% confidence level. Overall, these results do not support

TABLE 2. Regression Results for EMEs

Dependent variable: *GGINI*	(1)	(2)	(3)	(4)	(5)	(6)
INFLOWS	0.026***		-0.064		0.044**	
	(0.006)		(0.044)		(0.019)	
OUTFLOWS	0.010		0.224***		-0.015	
	(0.023)		(0.062)		(0.028)	
NINFLOWS		0.018***		-0.011		0.036**
		(0.006)		(0.015)		(0.015)
AGE	0.000***	0.000***				
	(0.000)	(0.000)				
CAPOPEN	-0.002**	-0.002***				
	(0.001)	(0.000)				
INFCONT			0.011***	0.008***		
			(0.002)	(0.001)		
OUTCONT			-0.006	-0.003***		
			(0.004)	(0.001)		
LOWCORR	0.001***	0.001***	0.001	0.003***		
	(0.000)	(0.000)	(0.001)	(0.000)		
GDPPCAP	-0.000***	-0.000***	-0.000***	-0.000***		
	(0.000)	(0.000)	(0.000)	(0.000)		
POP	0.000***	0.000***	0.000***	0.000***		
	(0.000)	(0.000)	(0.000)	(0.000)		
Constant	-0.005*	-0.003***	-0.006*	0.002***	-0.002	-0.001
	(0.002)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Observations	726	726	501	501	816	816
CLR	14.47	13.88	11.41	11.08	15.68	15.66
	[0.006]	[0.006]	[0.015]	[0.015]	[0.004]	[0.003]
AR	14.50	14.50	12.88	12.88	15.75	15.75
	[0.006]	[0.006]	[0.012]	[0.012]	[0.003]	[0.003]
Wald	19.79	8.92	13.93	0.53	5.67	5.71
	[0.000]	[0.003]	[0.001]	[0.466]	[0.059]	[0.017]

Dependent variable: Growth in GINI coefficient of income inequality. Two-stage least squares estimation with $INTREMOTE$ and regional dummies as instruments for $INFLOWS$, $OUTFLOWS$, $NINFLOWS$. Year fixed effects are included in all specifications. See the text for variable definitions. For models (1), (2), we use the base sample with the conditioning variables, including the Chinn-Ito (2008) measure of capital account openness, $CAPOPEN$. For models (3), and (4), we replace the Chinn-Ito index by the Fernández, et al (2016) indices for restrictions on capital inflows ($INFCONT$) and outflows ($OUTCONT$). Models (5) and (6) drop the conditioning variables and thus expand the sample size. Standard errors clustered by year are shown in parentheses. P-values are reported for CLR, AR, and Wald tests of weak instruments. Statistical significance levels are indicated by asterisks: *** p<0.01, ** p<0.05, and * p<0.10.

any strong inferences about the relationship between capital flows and inequality for advanced economies.

The remaining tables reproduce the corresponding tables (Tables A.1 - A.3) in the appendix for the sample of EMEs. Overall, the positive impact of gross and net

Table 3. Regression Results for AEs

Dependent variable: *GGINI*	(1)	(2)	(3)	(4)	(5)	(6)
INFLOWS	-0.154		-0.090		-0.066	
	(0.095)		(0.078)		(0.088)	
OUTFLOWS	0.153		0.092		0.062	
	(0.100)		(0.078)		(0.090)	
NINFLOWS		-0.156*		-0.089		-0.082
		(0.083)		(0.079)		(0.101)
AGE	-0.002	-0.002				
	(0.001)	(0.001)				
CAPOPEN	0.026***	0.026***				
	(0.007)	(0.007)				
INFCONT			-0.001	-0.002		
			(0.010)	(0.009)		
OUTCONT			-0.008*	-0.008*		
			(0.005)	(0.005)		
LOWCORR	-0.004	-0.004	-0.001	-0.001		
	(0.003)	(0.003)	(0.001)	(0.001)		
GDPPCAP	-0.000	-0.000	-0.000	-0.000		
	(0.000)	(0.000)	(0.000)	(0.000)		
POP	0.000	0.000	0.000	0.000		
	(0.000)	(0.000)	(0.000)	(0.000)		
Constant	0.057	0.057	0.002	0.002	0.003***	0.002***
	(0.050)	(0.049)	(0.002)	(0.001)	(0.001)	(0.000)
Observations	455	455	419	419	482	482
CLR	5.95	5.47	0.75	0.40	1.15	0.83
	[0.078]	[0.092]	[0.808]	[0.599]	[0.782]	[0.609]
AR	7.11	7.11	4.04	4.04	2.49	2.49
	[0.068]	[0.029]	[0.257]	[0.257]	[0.476]	[0.476]
Wald	4.09	3.51	1.44	1.28	1.14	0.67
	[0.129]	[0.061]	[0.487]	[0.258]	[0.566]	[0.415]

Note: Dependent variable: Year-over-year changes in the Gini coefficient. Two-stage least squares estimation with *INTREMOTE* and regional dummies as instruments for *INFLOWS*, *OUTFLOWS*, *NINFLOWS*. Year fixed effects are included in all specifications. See text for variable definitions. For models (1), (2), we use the base sample with the conditioning variables, including the Chinn and Ito (2008) measure of capital account openness (*CAPOPEN*). For models (3), and (4), we replace the Chinn and Ito (2008) index by the Fernández et al. (2016) indices for restrictions on capital flows (*INFCONT*) and capital outflows (*OUTCONT).* Models (5) and (6) drop the conditioning variables, and thus expand the sample size. Standard errors clustered by year are shown in parentheses. P-values are reported for CLR, AR, and Wald tests of weak instruments. Statistical significance levels are indicated by the asterisks: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ Full regression results are available on request.

capital inflows on income inequality obtained from our baseline specification is robust to these alternative specifications, samples, and estimation methods.

Table A.1 Alternative Specifications

Model	(1) INFLOWS	(2) OUTFLOWS	(3) NINFLOWS
(1) No cond. Vars. w/ orig. Sample	0.071***	-0.032	0.066***
	(0.020)	(0.038)	(0.018)
(2) Add education	0.117***	0.189**	0.040***
	(0.031)	(0.089)	(0.007)
(3) Add voice and accountability	0.046***	-0.051***	0.047***
	(0.009)	(0.012)	(0.007)
(4) Add political stability	0.013**	-0.005	0.012**
	(0.006)	(0.015)	(0.005)
(5) Add Gov. effectiveness	0.026***	0.011	0.018***
	(0.006)	(0.022)	(0.005)
(6) Add reg. quality	0.022***	0.015	0.014**
	(0.007)	(0.024)	(0.006)
(7) Add rule of law	0.015*	-0.043***	0.021***
	(0.009)	(0.010)	(0.004)
(8) Add lending	0.019	-0.049***	0.018**
	(0.012)	(0.011)	(0.008)

Note: Dependent variable: Year-over-year changes in the income Gini coefficient. See the text for regression specifications and variable definitions. Columns (1) and (2) report estimated coefficients on capital inflows and outflows respectively. Column (3) reports the estimated coefficient on net inflows. Row (1) removes conditioning variables with the base sample. Row (2) adds the average years of schooling as a control. Rows (3) through (7) add five different World Governance Indicators as controls. Row (8) adds bank lending rates as controls. Standard errors are clustered by years and are reported in parentheses. Statistical significance levels are indicated by the asterisks: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ Full regression results are available on request.

Table A.2 Alternative Specifications

Model	(1) INFLOWS	(2) OUTFLOWS	(3) NINFLOWS
(1) Add remoteness	0.058***	-0.024	0.052***
	(0.008)	(0.024)	(0.007)
(2) Add self employment	0.064***	0.050	0.030***
	(0.019)	(0.036)	(0.006)
(3) Add country dummies	0.004*	0.002	0.003
	(0.002)	(0.005)	(0.002)
(4) Sub. 10YR US Treasury	0.027***	0.008	0.019***
	(0.007)	(0.022)	(0.007)
(5) Sub. 1YR US Treasury	0.027***	0.009	0.020**
	(0.006)	(0.022)	(0.010)
(6) Add 10YR US Treasury	0.027***	0.010	0.019***
	(0.007)	(0.023)	(0.006)
(7) Add 1YR US Treasury	0.028***	0.006	0.020*
	(0.009)	(0.023)	(0.010)

Note: Dependent variable: Year-over-year changes in the income Gini coefficient. See the text for regression specifications and variable definitions. Columns (1) and (2) report estimated coefficients on capital inflows and outflows respectively. Column (3) reports estimated coefficients on net inflows. Row(1) adds financial remoteness measure as a control variable. Row (2) adds share of self employment as a control. Row (3) adds country dummies as controls. Rows (4) and (5) substitute 10 and 1-year U.S. Treasury rates respectively for the 2-year Treasury yields used in the baseline in the interaction variable *INTREMOTE*. Rows (6) and (7) add interactions of financial remoteness with 10-year and 1-year Treasury rates, respectively, to the baseline specification as control variables. Standard errors are clustered by years and reported in parentheses. Statistical significant levels are indicated by the asterisks: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ Full regression results are available on request.

Table A.3 Alternative Specifications

Model	(1) INFLOWS	(2) OUTFLOWS	(3) NINFLOWS
(1) Drop Large Inflows	-0.008	-0.053***	0.006
	(0.015)	(0.012)	(0.008)
(2) Drop Small Inflows	0.029***	0.017	0.018***
	(0.007)	(0.025)	(0.006)
(3) Drop Large Outflows	0.001	-0.141***	0.024***
	(0.021)	(0.041)	(0.007)
(4) Drop Small Outflows	0.033***	0.049	0.011*
	(0.010)	(0.031)	(0.006)
(5) Drop High GINI	0.031***	0.016	0.019***
	(0.007)	(0.025)	(0.006)
(6) Drop Low GINI	0.026***	0.010	0.018***
	(0.006)	(0.023)	(0.006)
(7) Drop Most Remote	0.026***	0.010	0.018***
	(0.006)	(0.023)	(0.006)
(8) Drop Least Remote	0.026***	0.010	0.018***
	(0.006)	(0.023)	(0.006)
(9) Drop Crisis Years	0.019***	0.000	0.014**
	(0.007)	(0.019)	(0.007)
(10) Winsorize 1%	0.024***	0.026	0.015**
	(0.006)	(0.025)	(0.006)
(11) Robust SEs	0.026*	0.010	0.018*
	(0.014)	(0.023)	(0.011)
(12) Standard SEs	0.026*	0.010	0.018***
	(0.016)	(0.026)	(0.006)

Note: Dependent variable: Year-over-year changes in the income Gini coefficient. See the text for regression specifications and variable definitions. Columns (1) and (2) report the estimated coefficients on capital inflows and outflows, respectively. Column (3) reports the estimated coefficient on net inflows. Rows (1) and (2) drop observations with large and small inflows ($>$ 3 standard deviations from the sample mean) respectively. Rows (3) and (4) drop observations with large and small outflows respectively. Rows (5) and (6) drop observations with high and low Gini coefficient values respectively. Rows (7) and (8) drop observations with most and least remote countries respectively. Row (9) drops observations from 2008 and 2009. Row (10) reports estimates with a winsorized sample. Rows (11) and (12) report estimation results with robust and standard (non-robust) standard errors respectively. Standard errors are clustered by years and reported in parentheses. Statistical significant levels are indicated by the asterisks: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ Full regression results are available on request.

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