ERF Working Papers Series

Do Capital Flows Cause (De)-Industrialization?

Fatma Tasdemir

Economic Research Forum
منتدى البحوث الاقتصادية

Working Paper No. 1693
December 2023

DO CAPITAL FLOWS CAUSE (DE)-INDUSTRIALIZATION?

Fatma Taşdemir

Working Paper No. 1693

December 2023

This work was sponsored by the Economic Research Forum (ERF) and has benefited from both financial and intellectual support. The views expressed in this work are entirely those of the author(s) and should not be attributed to ERF, its Board of Trustees or donors. An earlier version of this paper was presented at the ERF 29th conference: *The Future of MENA Development Path: Risks and Opportunities in an Emerging World Order*. We thank conference participants and Prof. Raimundo Soto for their helpful comments and suggestions.

Send correspondence to:
Fatma Taşdemir
Sinop University
ftasdemir@sinop.edu.tr

First published in 2023 by
The Economic Research Forum (ERF)
21 Al-Sad Al-Aaly Street
Dokki, Giza
Egypt
www.erf.org.eg

Abstract

This paper aims to investigate the effect of capital flows on manufacturing in advanced (ADV), emerging market and developing (EMDE) and Middle East and North Africa (MENA) economies during the 1990-2020 period. Our empirical results suggest that capital flows lead to de-industrialization in all country groupings. Accordingly, capital flows tend to allocate the resources out of manufacturing. Considering the heterogeneity in technology intensity levels, we disaggregate manufacturing into low-tech and medium-high-tech industries. We find that de-industrialization appears to be the case for medium-high-tech manufacturing in the samples of ADV and EMDE, while in MENA, it is observed in low-tech manufacturing. On the other hand, capital flows encourage low-tech manufacturing in EMDE, which may suggest a shift of resources from medium-high-tech to low-tech manufacturing industries. Based on these results, policy makers may consider that financing manufacturing investment with capital flows is possible but could be risky.

Keywords: Capital Flows, Manufacturing Industry, De-Industrialization
JEL Classifications: F30, F41, L60, O14

ملخص

تهدف هذه الورقة إلى دراسة تأثير تدفقات رأس المال على التصنيع في الاقتصادات المتقدمة (ADV) والأسواق الناشئة والبلدان النامية (EMDE) والشرق الأوسط وشمال إفريقيا (MENA) خلال الفترة 1990-2020. وتشير نتائجنا التجريبية إلى أن تدفقات رأس المال تؤدي إلى تراجع التصنيع في جميع تجمعات البلدان. وبناء على ذلك، تميل تدفقات رأس المال إلى تخصيص الموارد من الصناعات التحويلية. بالنظر إلى عدم التجانس في مستويات كثافة التكنولوجيا، فإننا نصنف التصنيع إلى صناعات منخفضة التكنولوجيا ومتوسطة التكنولوجيا الفائقة. وجدنا أن إلغاء التصنيع يبدو أنه ينطبق على التصنيع متوسط التكنولوجيا العالية في عينات الاقتصادات المتقدمة والأسواق الناشئة والبلدان النامية ، بينما في منطقة الشرق الأوسط وشمال إفريقيا، يتم ملاحظته في التصنيع منخفض التقنية. من ناحية أخرى، تشجع تدفقات رأس المال التصنيع منخفض التكنولوجيا في الأسواق الناشئة والبلدان النامية ، مما قد يشير إلى تحول الموارد من الصناعات ذات التكنولوجيا العالية المتوسطة إلى الصناعات التحويلية منخفضة التكنولوجيا. واستنادا إلى هذه النتائج، قد يرى صانعو السياسات أن تمويل الاستثمار الصناعي بتدفقات رأس المال ممكن ولكنه قد يكون محفوفا بالمخاطر.

1. Introduction

Does openness to financial flows cause (de-)industrialization? Conventional theory maintains that the movement of capital provides efficient capital allocation, mitigates the cost of capital, encourages investment and growth. Benigno et al. (2015) points that theoretical benefits of financial openness have become much more skeptical. The IMF's incorporation of capital flow management measures including capital controls in its suggested policy toolkit can be regarded as a reflection of the shift in thinking. The substantial increase in capital flows during the last three decades has led to the investigation of the relationship between manufacturing and capital flows much more important issue in development economics.

Kaldor (1966), Szirmai (2012) and Rodrik (2013) briefly explain the unique properties of manufacturing that function as the main driving force of growth. Accordingly, manufacturing is a tradable and technologically dynamic sector that absorbs surplus labor, has higher productivity, and provides positive externality to other sectors. A prominent study by Rodrik (2016) suggests that developing economies tend to experience declining manufacturing shares in value added i.e., de-industrialization since the 1980s. Haraguchi et al. (2019) points that the post-1990 period corresponds to greater economic globalization due to the mitigation of communication costs. Rodrik (2016) finds that trade globalization leads to higher manufacturing industry. The findings by Haraguchi et al. (2019), however, indicate that financial openness leads to de-industrialization in the post-1990s.

According to Singh and Weisse (1998), capital flows do not appear to support industrialization in developing economies. Bairoch and Kozul-Wright (1998) suggests that capital flows are closely linked to uneven development and widening disparities between countries. Openness to international capital flows has led to lower investment because of reserve accumulation and the motivation for investment diversification (Mody and Murshid, 2005). Gelos and Werner (2002), on the other hand, finds that capital account openness alleviates the financial constraints for small Mexican manufacturing firms. Demir (2009) reports that capital flows volatility mitigates the profitability of Turkish manufacturing firms. Bortz (2018) indicates that gross capital inflows are positively correlated with financial, real estate and commerce sectors. In a similar vein, Saffie et al. (2020) find that financial liberalization tends to increase the employment, value added and number of firms in Hungarian services sector.

The potential reason for capital flows that causes de-industrialization is briefly explained by Corden (1994). Accordingly, capital inflows lead to higher domestic demand for both tradable and non-tradable goods, a rise in the supply of non-tradable goods to alleviate the surplus demand, subsequently leading to an upward movement in the price of non-tradable goods and the appreciation of the real exchange rate. This is defined as “financial Dutch disease” by Palma (2005). Lartey (2008) finds that financial Dutch disease seems to prevail in economies with fixed exchange rate regime. Botta (2017) reports that financial Dutch disease diminishes long term investment in tradable sector. In another paper, Botta (2021) remarks that the short-term surges may have permanent effects if these episodes expand technology and productivity gaps. Benigno et al. (2020), on the other hand, finds that the movement of capital from developing to developed economies leads to global financial resource curse.

Benigno and Fornaro (2014) indicates that large capital inflows result in an inefficient distribution of resources towards the non-tradable sector leading to stagnant productivity growth. Benigno et al. (2015) finds that capital inflows surges tend to allocate the production factors including capital and labor out of the manufacturing industry. Kalantzis (2015) argues that a reduction in interest rates leads to the growth of the non-tradable sector and higher leverage. These effects tend to amplify the occurrence of balance of payments crises. The findings by Teimouri and Zietz (2018) suggest that surges accelerate de-industrialization especially in middle income Asia and Latin America countries.

The studies that investigate the effect of financial openness on the manufacturing industry often consider either gross or net flows. Benigno et al. (2015) points that the sum of the change in reserve accumulation and net capital flows represented by the current account deficit is a better measure since it accounts for the net effect of policy responses. Recent literature tends to focus on the impacts of extreme movements in capital flows like surges on the manufacturing industry. However, the identification of these movements substantially changes with respect to the measurement as indicated by Crystallin et al., (2015). The lack of comparison across the different measures causes suspicion on the identification of extreme movements in capital flows and its impact on manufacturing. To tackle all these issues, this paper examines the association between manufacturing and capital flows using the definition suggested by Benigno et al. (2015). Considering the differences in development levels, we investigate this relationship for advanced (ADV), emerging market and developing (EMDE) and Middle East and North Africa (MENA) economies over the 1990-2020 period.

To analyze the relationship between manufacturing and capital flows, we consider real income per capita, financial development, trade openness and *de facto* exchange rate regime as important variables that affect the evolution of manufacturing. The manufacturing industry also follows a pattern that depends on its own recent past. Therefore, we also incorporate the lagged manufacturing into our estimated equations. The literature implicitly maintains that the association between capital flows and manufacturing is invariant to the technology intensity level. However, the aggregate manufacturing industry contains widespread heterogeneity in terms of technology levels. In this vein, we suggest that the impact of capital flows on manufacturing industry may change with the technology intensity levels. To the best of our knowledge, this is the first study that investigates the effect of capital flows on manufacturing disaggregated as low- and medium-high-tech industries.

The studies that investigate the capital flows-manufacturing relationship often employ conventional panel data estimation procedures. However, these methods do not consider the cross-sectional dependence among the variables. The ignorance of cross-sectional dependence, on the other hand, may lead to biased parameter estimates as indicated by Pesaran (2006). To tackle cross-sectional dependence, we first employ dynamic common correlated effects mean group (DCCE-MG) estimation procedure (Chudik and Pesaran, 2015) by using the first two lags of capital flows as instruments. We also employ the two-step system generalized method of moments (Arellano and Bond, 1991; Arellano and Bover, 1995) estimation method to further examine the robustness of our results. We transform the data by taking deviations from time-specific averages to account for cross-sectional dependence. Finally, we use the local projection method by Jorda (2005) to examine the dynamic responses of our variables of interest to the shock in capital flows.

The estimation results suggest that capital flows tend to lower manufacturing industry in all country groupings. Our findings also indicate that the effect of capital flows on manufacturing changes with the technology intensity level. Accordingly, the negative effect of capital flows on manufacturing appears to be the case for medium-high-tech industry in ADV and EMDE samples while in MENA, it seems to be the case for low-tech industry. On the other hand, capital flows tend to enhance low-tech manufacturing industry in EMDE. These results suggest that capital flows lead to the movement of resources out of the medium-high-tech and low-tech manufacturing, respectively, in ADV and MENA. In EMDE, capital flows tend to allocate the resources from medium-high-tech to low-tech.

The paper is organized as follows. Section 2 presents the data and some descriptive statistics. Section 3.1 introduces dynamic common correlated effects mean group estimation procedure and reports the results. Section 3.2 presents two-step system generalized method of moments estimation results. Section 3.3 explains the local projection method and provides dynamic responses of our variables to the shock in capital flows. We synthesize our results through concluding remarks in section 4.

2. The data

This study investigates the effect of capital flows on manufacturing for a large sample of countries. Data availability allows us to focus on 22 advanced[1] (ADV) and 52 emerging market and developing[2] (EMDE) including 10 Middle East and North Africa[3] (MENA) economies during the 1990-2020 period. We classify the economies as ADV based on the Morgan Stanley Capital International index while the rest of the sample is retained as EMDE.

To investigate the relationship between capital flows and manufacturing, we consider real income per capita (RGDPpc), financial development (FD), trade openness (TRADE) and prevailing *de facto* exchange rate regime (ERR) are important variables that affect the evolution of manufacturing. Capital flows (CF) is defined as the sum of current account deficit and change in reserves (% of GDP). An increase in the CF corresponds to a rise in net capital flows. The data for CF are from International Financial Statistics, IMF. Manufacturing value added (as a percent of GDP, MVA) data are from World Development Indicators, World Bank (WDI-WB). Considering the heterogeneity in technology levels, we disaggregate manufacturing as low-technology and medium-high-technology industries. The WDI-WB provides data for the share of medium and high technology value added in manufacturing. We multiply this share with MVA to obtain the manufacturing value added in medium and high technology industries (MH-MVA, as a percent of GDP). The difference between MVA and MH-MVA[4] corresponds to manufacturing value added in low technology industries (L-MVA)[5]. The data for real income per capita (RGDPpc) is from the United Nations Conference on Trade and Development (UNCTAD). IMF provides financial development index (FD) data based on the liquidity and efficiency of financial markets and institutions prepared by Svirydzenka (2016). The FD data are between 0 and 1, the proximity to 1 represents better financial development. We consider the *de facto* coarse exchange rate regime (ERR) classification provided by Ilzetzki et al. (2022).

---

[1] ADV are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, United Kingdom and United States.

[2] EMDE are Algeria, Argentina, Bahrain, Bangladesh, Belarus, Bolivia, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Croatia, Czechia, Ecuador, Egypt, Estonia, Fiji, Georgia, Ghana, Hungary, India, Indonesia, Israel, Jordan, Kenya, Korea, Latvia, Lithuania, Malaysia, Mexico, Moldova, Morocco, Niger, North Macedonia, Oman, Paraguay, Peru, Philippines, Poland, Romania, Russia, Saudi Arabia, Senegal, Slovak R., Slovenia, South Africa, Sri Lanka, Thailand, Tunisia, Turkey and Uruguay.

[3] MENA are Algeria, Bahrain, Egypt, Israel, Jordan, Morocco, Oman, Saudi Arabia, Tunisia and Turkey.

[4] Medium and high technology manufacturing industry contains the value added in chemicals and chemical products; machinery and equipment; office, accounting and computing machinery; electrical machinery and apparatus; radio, television and communication equipment; medical, precision and optical instruments; motor vehicles, trailers and semi-trailers; other transport equipment sub-sectors.

[5] Low-technology manufacturing industry includes the value added in food and beverages; tobacco products; textiles; wearing, apparel, furniture; leather, leather products and footwear; wood products; paper and paper products; printing and publishing; coke, refined petroleum products and nuclear fuel; rubber and plastic products; non-metallic mineral products; basic metals; fabricated metal products and recycling sub-sectors.

The ERR data lies between 1 and 6, with higher values representing more flexible ERR arrangements. Ilzetzki et al. (2022) notes that ERR5 and ERR6 represent economies with severe macroeconomic instability and high inflation. Therefore, we restrict our sample of observations to include ERR classification up to ERR4. Our trade openness (the total value of goods and services exported and imported, expressed as a percentage of the GDP) data are from WDI-WB.

Figure 1: The evolution of manufacturing and capital flows

(1.a) **(1.b)**

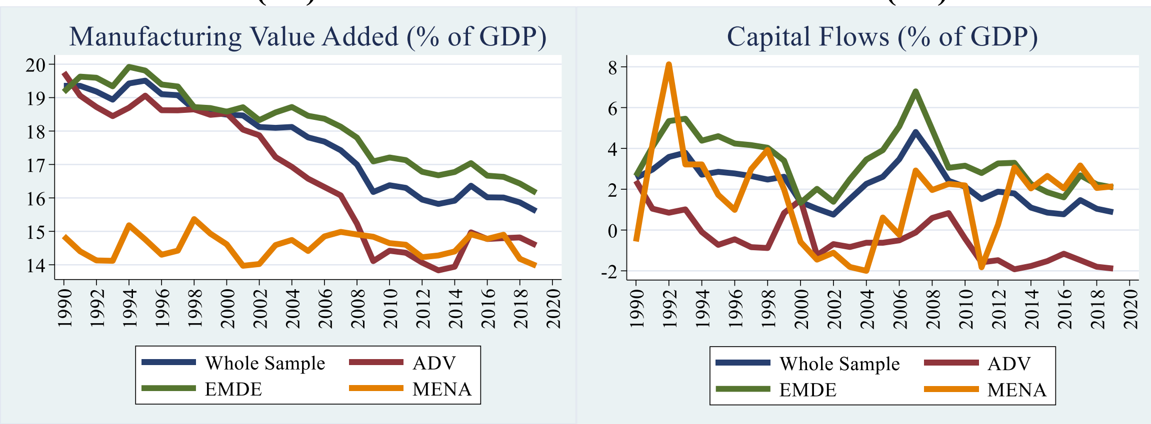


Figure 1.a shows the mean manufacturing value added (% of GDP) with respect to years in the whole sample, ADV, EMDE and MENA. MVA appears to mitigate over the years in ADV and EMDE, albeit it is relatively lower but stable in MENA. As compared to the 1990s, the gap between EMDE and ADV tends to expand during the recent two decades. Even, mean MVA in ADV is almost the same with MENA during the last decade. Considering decelerating trend in MVA represents de-industrialization, this figure suggests that it is sharper in the sample of ADV.

Figure 1.b represents the evolution of mean capital flows over the years. Capital flows tend to increase up to 2007 and then begin to decrease in EMDE. Mean capital flows appear to diminish in ADV. In MENA, capital flows first increase, then decrease up to the first half of the 2000s and appear to increase for the remaining period. Mean capital flows are almost positive in EMDE and MENA while it is almost negative in ADV during the whole period. The pattern in Figure 1.b may suggest that capital tends to move from ADV to EMDE and MENA.

Figure 2: Scatter plot of capital flows with MVA, MH-MVA and L-MVA

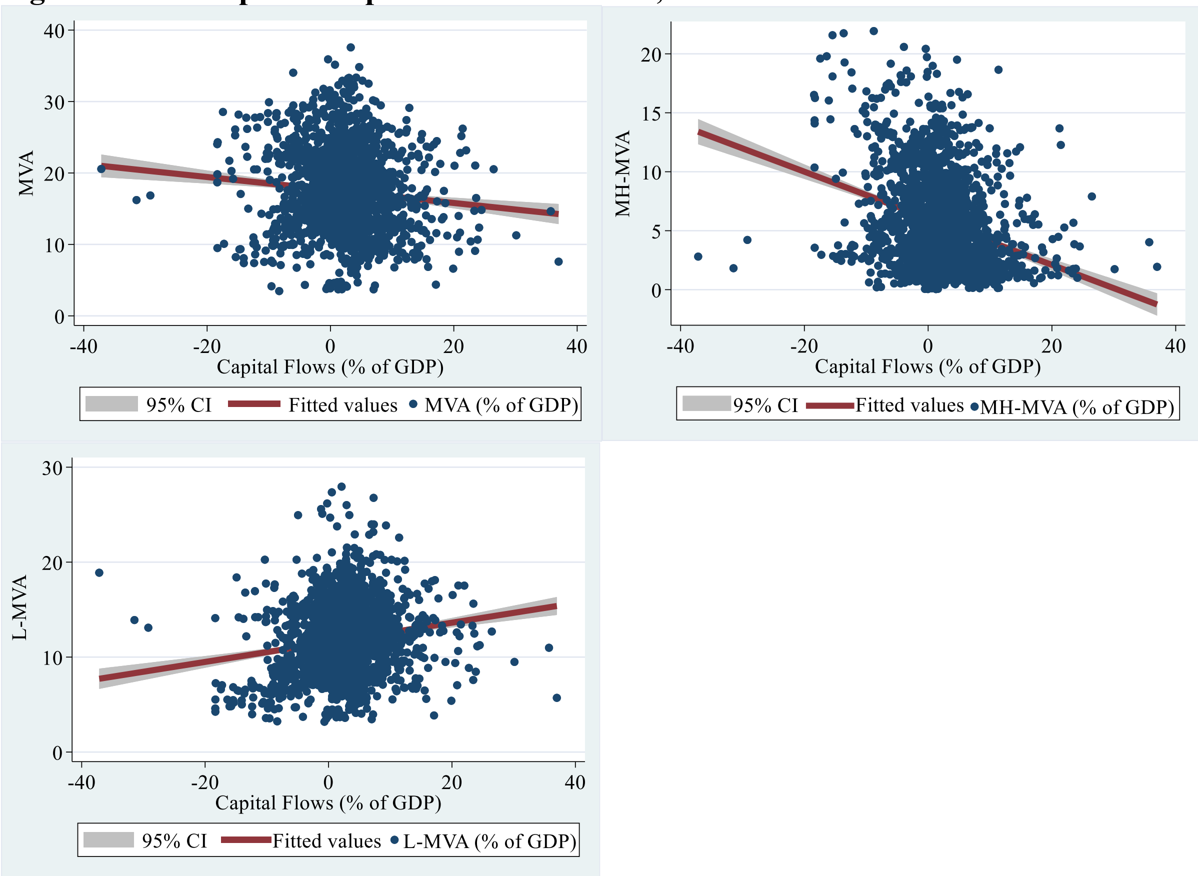


Figure 2 shows the scatterplot of capital flows with MVA, MH-MVA and L-MVDA in the whole sample. Accordingly, manufacturing is negatively correlated with capital flows. This negative correlation seems to be the case for MH-MVA. However, L-MVA is positively correlated with capital flows. The negative correlation between capital flows and MH-MVA is in line with the financial resource curse argument suggested by Corden (1994), Palma (2005) and Botta (2021) as well as global financial resource curse explanation proposed by Benigno et al. (2020). The positive correlation between capital flows and L-MVA is consistent with the theoretical gains of financial openness including efficient capital allocation, decrease in capital cost and higher investment.

Table 1 presents the correlation coefficients and main descriptive statistics for our variables of interest. Aggregate manufacturing industry is positively correlated with exchange rate regime flexibility and trade openness while negatively correlated with real income per capita, financial development, capital flows and trade openness. The sign of the correlation coefficients also changes with respect to technology intensity level in manufacturing industry. Accordingly, MH-MVA (L-MVA) is positively (negatively) correlated with real income per capita, financial development, exchange rate regime flexibility and trade openness while negatively (positively) correlated with capital flows.

Table 1: Correlation Matrix and Main Descriptive Statistics

	MVA	MH-MVA	L-MVA	RGDPpc	FD	CF	ERR	TRADE
Correlation								
MVA	1.00							
MH-MVA	0.73	1.00						
L-MVA	0.70	0.02	1.00					
RGDPpc	-0.10	0.32	-0.47	1.00				
FD	-0.01	0.45	-0.45	0.76	1.00			
CF	-0.09	-0.31	0.19	-0.32	-0.32	1.00		
ERR	0.03	0.08	-0.04	0.09	0.20	-0.02	1.00	
TRADE	0.24	0.41	-0.07	0.23	0.11	-0.19	-0.18	1.00
Main Descriptive Statistics								
Whole Sample								
Mean	17.60	5.66	11.94	17149.8$	0.42	2.16	2	80.89
St. Dev.	5.59	3.96	3.87	16686.2	0.23	6.12	0.95	50.83
CoV	0.32	0.69	0.32	0.97	0.55	2.84	0.55	0.63
NT	2040	2040	2040	2038	2054	1990	2054	2035
Advanced Economies								
Mean	16.65	7.18	9.47	38270.8$	0.68	-0.49	2	85.37
St. Dev.	5.15	4.12	2.71	12254.5	0.15	5.49	1.2	70.61
CoV	0.31	0.57	0.29	0.32	0.21	-11.2	0.58	0.83
NT	630	630	630	630	630	611	630	630
Emerging Market and Developing Economies								
Mean	18.02	4.98	13.04	7699.4$	0.31	3.33	2	78.88
St. Dev.	5.73	3.69	3.80	6844.5	0.16	6.02	0.81	38.68
CoV	0.32	0.74	0.29	0.89	0.53	1.81	0.41	0.49
NT	1410	1410	1410	1408	1424	1379	1424	1405
Middle East and North Africa Economies								
Mean	14.58	3.71	10.87	11263.1$	0.34	1.55	2	83.66
St. Dev.	5.12	2.31	3.94	9952.2	0.13	6.80	0.81	33.85
CoV	0.35	0.62	0.36	0.88	0.40	4.39	0.46	0.40
NT	287	287	287	287	287	269	287	282

Note: St. Dev., CoV and NT represent, respectively, standard deviation, coefficient of variation (standard deviation over the mean) and number of observations.

The mean MVA is around 17.6 in whole sample, 16.7 in ADV, 18.0 in EMDE and 14.6 in MENA. As compared to EMDE, the mean MVA is slightly lower in ADV and MENA. In the whole sample, the mean MH-MVA is almost 5.7, albeit the mean L-MVA is much higher with around 11.9. This seems to be the case for the samples of EMDE and MENA. However, the mean L-MVA is much lower and the mean MH-MVA is much higher in ADV. The spread between L-MVA and MH-MVA is much lower in ADV than EMDE and MENA. Accordingly, manufacturing industry mainly consists of the value added in low-technology industries in EMDE and MENA while the value added in low and medium-high technology industries are almost the same in ADV. The mean real income per capita and financial development are substantially much higher in ADV than EMDE and MENA. The average capital flows are -0.49 in ADV, 3.33 in EMDE and 1.55 in MENA. This can suggest that capital flows from ADV to EMDE and MENA. The main statistics for exchange rate regime and trade openness are almost the same in all country groupings.

3. Empirical methodology

To examine the impact of capital flows on manufacturing, we consider the following benchmark equation:

$$\mathrm{MVA}_{it} = \alpha_i + \alpha_1 \mathrm{MVA}_{i,t-1} + \alpha_2 \mathrm{CF}_{it} + \alpha_3 \mathrm{RGDPpc}_{it} + \alpha_4 \mathrm{FD}_{it} + \alpha_5 \mathrm{ERR}_{it} + \alpha_6 \mathrm{TRADE}_{it} + \mathrm{Trend} + u_{it} \quad (1)$$

In eq. (1), i and t denote, correspondingly, country and years, MVA is manufacturing value added (% of GDP), CF is net capital flows proxied with the sum of current account deficit and the change in official reserves (as a percent of GDP), RGDPpc is natural logarithm of real GDP per capita, FD is financial development index, ERR is the *de facto* coarse exchange rate regime classification by Ilzetzki et al. (2022) and TRADE is trade openness measured as the sum of exports and imports (as a percent of GDP). We also include lagged MVA by considering the present value added in manufacturing depends on that of previous period.

Eq. (1) is consistent with the theory and empirical literature. To capture the cross-country differences in the development process, we include the level of real income per capita (Haraguchi et al., 2019). The importance of financial development for investment and growth has been emphasized by Schumpeter (1911). Levine (1997) notes that financial development provides the allocation of liquid unproductive funds to productive investment projects for resource constrained firms. The results by Szirmai (2012) and Colacchio and Davanzati (2017) suggest that financial development plays a key leading role in investment and growth. We consider that the prevailing exchange rate regime is important to explain the evolution of manufacturing. Rogoff et al. (2004) maintains that credible managed ERRs import monetary policy credibility of the anchor currency country, mitigates inflation and transaction costs and enable exchange rate guarantee. On the other hand, flexible ERRs provide independence in macroeconomic policies that led the countries to accommodate external shocks (Edwards, 2011). Rodrik (2007) remarks that exchange rate policy which promotes the development of tradable manufacturing industry is one of the most important targets for industrial policy. Martorano and Sanfilippo (2015) notes that both stable and competitive exchange rates foster the development of tradable manufacturing industry. Trade openness is also amongst the important drivers of manufacturing industry because it leads to higher productivity (Dowrick and Golley, 2004), provides specialization (Chandran and Munusamy, 2009) and efficient allocation of resources (Baldwin and Lopez-Gonzalez, 2015).

The bulk of the literature often employs conventional estimation procedures and ignores the cross-sectional dependence which led to autocorrelation and biased parameter estimates. This study tackles these important issues and employs dynamic common correlated effects mean group estimation method (Pesaran, 2006; Chudik and Pesaran, 2015). To account the potential endogeneity of capital flows for manufacturing, we use the first two lags as instruments. As a robustness check, we also utilize two-step system generalized method of moments (GMM) estimation procedure (Arellano and Bond, 1991; Arellano and Bover, 1995). To tackle the cross-sectional dependence, we transform our variables into deviations from time specific averages as suggested by Sarafidis and Robertson (2009). Finally, we use the local projection method (Jorda, 2005) to examine the dynamic responses of our variables of interest to the shock in capital flows.

3.1 Dynamic Common Correlated Effects Mean Group Estimation Method and Results

The reparametrized version of benchmark eq. (1) can be represented as follows:

$$\mathrm{MVA}_{it} = \alpha_i + \alpha_1 \mathrm{MVA}_{i,t-1} + \beta_i' x_{it} + \mathrm{Trend} + u_{it}$$
$$\text{where } u_{it} = \gamma_i' f_t + e_{it} \qquad (2)$$

In (2), x is the set of variables containing real income per capita, financial development, exchange rate regime, trade openness and capital flows, f_t is unobserved common factor, γ_i is heterogenous factor loading and α_i is country-specific fixed effects. Here, e_{it} is the error term that satisfies the independent and identical distribution (IID) assumption. The random distribution with a common mean for the heterogenous parameters can be represented as $\beta_i = \beta + v_i$, where $v_i \sim IID(0, \Omega_v)$. Pesaran (2006) suggests that unobserved common factors can be proxied with cross-sectional averages and introduces the common correlated effects (CCE) estimation procedure. Chudik and Pesaran (2013) and Chudik et al. (2011) remark that CCE method is better than two-way fixed effects because the former considers the prevailing differences among the countries, global and country-specific shocks that irrespective of stationary properties and their homogenous or heterogenous effects on countries. The incorporation of cross-sectional averages also prevents the endogeneity bias as indicated by Fuleky et al. (2017). Coakley et al. (2001) finds that mean group estimators are more robust than pooled estimators. Considering the evolution of MVA depends on the past, we prefer to employ dynamic common correlated effects mean group (DCCE-MG) estimation procedure.

The initial step of DCCE-MG estimation method is to test whether there is cross-sectional dependence in our variables of interest. Pesaran (2004) introduces the cross-sectional dependence test that maintains the cross-sectional independence under the null hypothesis. Table 2 reports the cross-sectional dependence (CD-Test) results for the variables. Accordingly, all the variables are cross-sectionally dependent.

Table 2: Cross-sectional dependence test

	MVA	**MH-MVA**	**L-MVA**	**RGDPpc**	**FD**	**CF**	**TRADE**	**ERR**
CD-Test	77.37 [0.00]	3.51 [0.00]	106.29 [0.00]	224.64 [0.00]	147.78 [0.00]	11.26 [0.00]	79.68 [0.00]	19.29 [0.00]
Notes: The value in square brackets are the p-values.								

The presence of cross-sectional dependence led us to employ cross-sectionally augmented Im, Pesaran and Shin (CIPS) unit root test by Pesaran (2007). The test maintains the presence of unit root under the null hypothesis. The lag length is determined based on the modified Akaike Information criteria. Table 3 presents the CIPS unit root test results. Accordingly, real income per capita is stationary in first difference while the rest of the variables are stationary in level. Therefore, we consider real income per capita growth in our estimates.

Table 3: CIPS unit root test results

	Level	**1st Difference**
MVA	-1.80***	-4.61***
MH-MVA	-2.25***	-5.42***
L-MVA	-1.89**	-5.14***
RGDPpc	-0.42	-1.69***
FD	-2.14***	-5.81***
CF	-2.28**	-4.72***
ERR	-7.04***	-15.14***
TRADE	-1.20**	-3.91***

Notes: *** < 1%, ** < 5% and * < 1%. The unit root test equations include constant term.

Considering CIPS test results, our estimated model with stationary variables is as follows:

$$\mathrm{MVA_{it}} = \alpha_i + \alpha_1 \mathrm{MVA_{i,t-1}} + \alpha_2 \mathrm{CF_{i,t}} + \alpha_3 \Delta \mathrm{RGDPpc_{it}} + \alpha_4 \mathrm{FD_{it}} + \alpha_5 \mathrm{ERR_{it}} + \alpha_6 \mathrm{TRADE_{it}} + \mathrm{Trend} + u_{it} \quad (3)$$

Under the conventional theory, capital flows may be potentially endogenous for manufacturing. To tackle this important issue, we use the first two lags of capital flows as the instrument in the estimation of eq. (3). Table 4 reports the dynamic common correlated effects mean group results. In all the estimated equations, CD-test outcomes fail to reject the null hypothesis which maintains the cross-sectional independence. Also, the autocorrelation (AC) test results fail to reject the null hypothesis which postulates the lack of serial correlation.

Table 4: DCCE-MG estimation results

	Whole Sample	ADV	EMDE	MENA
$MVA_{i,t-1}$	0.425***	0.336**	0.477***	0.600***
	(0.037)	(0.157)	(0.063)	(0.113)
CF_{it}	-0.033**	-0.154*	-0.094**	-0.236**
	(0.011)	(0.079)	(0.041)	(0.097)
$\Delta RGDPpc_{it}$	8.350***	1.024**	1.576*	-0.194
	(2.097)	(0.401)	(0.816)	(3.991)
FD_{it}	0.977	-3.106	3.978*	1.575*
	(1.871)	(3.096)	(2.731)	(0.837)
ERR_{it}	1.726***	2.576*	1.657**	-3.655
	(0.818)	(1.504)	(0.781)	(8.559)
$TRADE_{it}$	0.040***	0.063***	0.033**	0.020**
	(0.009)	(0.019)	(0.013)	(0.009)
Constant	1.045	0.737	3.171**	-4.129**
	(0.967)	(0.872)	(1.559)	(1.942)
Trend	-0.057	-0.092*	-0.057	0.143
	(0.039)	(0.051)	(0.060)	(0.105)
# of observations	1665	575	1090	210
R-squared	0.76	0.41	0.45	0.42
# of country	67	22	45	8
CD-Test [p-value]	0.13	0.12	0.33	0.79
AC-Test [p-value]	0.07	0.69	0.24	0.06

Notes: Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

The estimated coefficient for lagged MVA is positive and statistically significant in the whole sample, ADV, EMDE and MENA. This indicates that manufacturing in the current period depends on that of the previous period. This also suggests the presence of conditional manufacturing convergence. In this vein, economies with less manufacturing value added in GDP tend to invest in manufacturing more than the industrialized economies to converge the similar levels of manufacturing. There is a negative and significant association between capital flows (CF) and manufacturing. Accordingly, an increase in CF leads to lower MVA. This result contrasts with the conventional theory which suggests that openness to international financial flows provides many benefits including high levels of investment. However, this finding is consistent with the financial Dutch disease argument proposed by Corden (1994), Palma (2005) and Botta (2021). Real income per capita growth (ΔRGDPpc) is positively associated with manufacturing in the whole sample, ADV and EMDE. This is consistent with the demand-based explanation suggested by Szirmai and Verspagen (2015). A rise in income lowers the food expenditure share in income but increases the manufacturing products share. FD tends to increase manufacturing in the samples of EMDE and MENA. The results for EMDE and MENA are consistent with the bulk of the literature suggesting that financial development enhances the efficiency of investment. Exchange rate regime (ERR) flexibility appears to increase manufacturing value added excluding MENA. This empirical finding is in line with the remarks by Edwards (2011) suggesting that flexible ERR led the economies to accommodate external shocks and encourages manufacturing. Trade openness and manufacturing are positively associated. Consistent with theoretical arguments and empirical literate, trade openness can increase productivity, provide specialization and efficient resource allocation and their overall effects are to foster industrialization.

The aggregate manufacturing contains widespread heterogeneity in technology levels. To consider this issue, we estimate eq. (3) for the medium-high (MH-MVA) and low-technology manufacturing (L-MVA) industries. The estimation results are reported in Table 5. According to diagnostic tests, all the estimated equations do not reject the null of cross-sectional independence and the lack of serial correlation.

The results in Table 5 suggest that a raise in capital flows leads to lower MH-MVA in the whole sample, ADV and EMDE. Capital flows also mitigate L-MVA in MENA. However, capital flows tend to enhance L-MVA in the whole sample and EMDE. The differential effect of capital flows on MH-MVA and L-MVA is striking. Recent literature including Benigno et al. (2015), Kalantzis (2015) and Teimouri and Zietz (2018) finds that capital flows lead to allocation of resources out of the manufacturing industry. Consistent with the recent literature, the results in Table 5 imply that capital flows tend to allocate the resources out of MH-MVA in the samples of ADV and EMDE, while in MENA, it is observed in low-tech manufacturing. Considering capital flows encourage L-MVA in EMDE, we may also suggest that capital flows lead to movement of resources from MH-MVA to L-MVA.

Table 5: DCCE-MG estimation results in MH-MVA and L-MVA

	MH-MVA				L-MVA			
	Whole Sample	ADV	EMDE	MENA	Whole Sample	ADV	EMDE	MENA
$MH\text{-}MVA_{i,t-1}$	0.230***	0.355***	0.216***	0.482***				
	(0.049)	(0.081)	(0.057)	(0.058)				
$L\text{-}MVA_{i,t-1}$					0.244***	0.382***	0.103**	0.505***
					(0.068)	(0.142)	(0.051)	(0.094)
CF_{it}	-0.019*	-0.052*	-0.022*	-0.002	0.028**	-0.043	0.021**	-0.024**
	(0.011)	(0.034)	(0.013)	(0.027)	(0.014)	(0.048)	(0.010)	(0.011)
$\Delta RGDPpc_{it}$	3.068**	6.350***	2.442*	1.398	2.630	7.738*	-1.145	7.967**
	(1.305)	(2.272)	(1.261)	(1.545)	(3.133)	(4.192)	(2.660)	(3.822)
FD_{it}	1.911	-1.314	1.976*	-4.514	-7.179	1.759	-1.518	2.198**
	(1.792)	(1.051)	(0.972)	(3.106)	(7.807)	(1.936)	(4.537)	(1.049)
ERR_{it}	0.682	1.645*	-0.083	1.070*	2.312*	0.438	0.707**	2.171
	(0.705)	(0.913)	(0.599)	(0.501)	(1.068)	(0.713)	(0.268)	(2.006)
$TRADE_{it}$	0.032***	0.026**	0.023*	0.025**	0.037***	0.057**	0.035***	0.142***
	(0.009)	(0.010)	(0.013)	(0.011)	(0.012)	(0.023)	(0.012)	(0.014)
Constant	-2.128	-0.266	-1.158	0.525	1.523**	1.179*	-0.239	-6.299***
	(2.091)	(0.523)	(1.593)	(1.805)	(0.764)	(0.616)	(1.150)	(2.108)
Trend	0.002	0.010	0.015	-0.015	-0.024	-0.064*	-0.012	0.013
	(0.018)	(0.013)	(0.026)	(0.032)	(0.029)	(0.039)	(0.024)	(0.030)
# of observations	1774	575	1177	210	1665	575	1090	257
R-squared	0.676	0.685	0.56	0.656	0.28	0.212	0.671	0.359
# of country	69	22	47	8	67	22	45	10
CD-test [p-value]	0.54	0.13	0.37	0.30	0.20	0.21	0.15	0.13
AC-test [p-value]	0.10	0.49	0.09	0.14	0.08	0.17	0.14	0.73

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Real income per capita growth appears to increase both MH-MVA and L-MVA in ADV. Also, it increases MH-MVA in EMDE and L-MVA in MENA. Financial development leads to higher MH-MVA in EMDE and L-MVA in MENA. Exchange rate regime flexibility encourages MH-MVA in ADV and MENA and L-MVA in EMDE. Trade openness tends to increase both MH-MVA and L-MVA in all country groupings.

3.2 Robustness Check: GMM Estimation Results

Conventional theory maintains that the movement of capital leads to efficient capital allocation, decreases the cost of capital and increases investment. In this vein, capital flows may be considered as potentially endogenous for the evolution of manufacturing. Under manufacturing is the engine of growth argument suggested by Kaldor (1966), real income per capita growth may also be endogenous for industrialization. To tackle the endogeneity issue, this section aims to provide a robustness check for our earlier results by utilizing generalized method of moments (GMM, Arellano and Bond, 1991; Arellano and Bover, 1995) estimation procedure. This estimation method, unfortunately, does not consider the cross-sectional dependence. However, Sarafidis and Robertson (2009) points that transformation of the data in deviations from time-specific averages alleviates the cross-sectional dependence problem in GMM method. To this end, we transform the variables in eq. (3) as follows:

$$(\mathrm{MVA_{it}} - \overline{\mathrm{MVA}}_\mathrm{t}) = (\alpha_\mathrm{i} - \overline{\alpha}) + \alpha_1\left(\mathrm{MVA_{i,t-1}} - \overline{\mathrm{MVA}}_\mathrm{t-1}\right) + \alpha_2(\mathrm{CF_{it}} - \overline{\mathrm{CF}}_\mathrm{t}) + \alpha_3(\Delta\mathrm{RGDPpc_{it}} - \overline{\Delta\mathrm{RGDPpc}}_\mathrm{t}) + \alpha_4(\mathrm{FD_{it}} - \overline{\mathrm{FD}}_\mathrm{t}) + \alpha_5(\mathrm{ERR_{it}} - \overline{\mathrm{ERR}}_\mathrm{t}) + \alpha_6(\mathrm{TRADE_{it}} - \overline{\mathrm{TRADE}}_\mathrm{t}) + (u_{it} - \bar{u}_t) \quad (4)$$

In eq. (4), $\overline{\mathrm{MVA}}_\mathrm{t} = \frac{\sum_{i=1}^{N} MVA_{it}}{N}$ and we define the time-specific means for the rest of the variables in a similar vein. The reparametrized version of eq. (4):

$$\mathrm{MVA}^*_\mathrm{it} = \beta^*_\mathrm{i} + \beta_1\mathrm{MVA}^*_\mathrm{i,t-1} + \beta_2\mathrm{CF}^*_\mathrm{it} + \beta_3\Delta\mathrm{RGDPpc}^*_\mathrm{it} + \beta_4\mathrm{FD}^*_\mathrm{it} + \beta_5\mathrm{ERR}^*_\mathrm{it} + \beta_6\mathrm{TRADE}^*_\mathrm{it} + \mathrm{u}^*_\mathrm{it} \quad (5)$$

In eq. (5), the star variable represents the time-specific demeaned variable. We estimate eq. (5) by utilizing two-step system GMM method. We maintain that all the variables in eq. (5) are potentially endogenous. Bond (2002) remarks that similar treatment is required for the endogenous variables and dependent variable. In this vein, we use the first three lags of endogenous variables and dependent variable as instruments. Roodman (2009) suggests that Hansen test of instrument validity weakens in the presence of large instrument set. To tackle this issue, we use “collapse” command in our estimates.

Table 6 represents the two-step system GMM results. All the estimated equations pass the Hansen-Sargan instrument validity (HS-test) and autocorrelations tests. Also, there is no cross-sectional dependence in the estimated equations. Consistent with the empirical findings in Table 4, capital flows tend to mitigate manufacturing in all country groupings. This appears to be the case for the MH-MVA in ADV and EMDE while it is the L-MVA in MENA. Capital flows, however, encourages L-MVA in EMDE. In a similar vein to Table 5, two-step system GMM estimation results indicate that capital flows lead to movement of resources out of MH-MVA in the samples of ADV and L-MVA in MENA. In EMDE, capital flows allocate the resources from MH-MVA to L-MVA. The rest of the estimated parameters in Table 6 are essentially the same with those presented earlier.

Table 6: Two-step system GMM estimation results

	MVA				MH-MVA				L-MVA			
	Whole Sample	ADV	EMDE	MENA	Whole Sample	ADV	EMDE	MENA	Whole Sample	ADV	EMDE	MENA
$MVA_{i,t-1}$	0.796***	0.822***	0.769***	0.767***								
	(0.033)	(0.010)	(0.048)	(0.196)								
$MH\text{-}MVA_{i,t-1}$					0.869***	0.892***	0.864***	0.826*				
					(0.033)	(0.019)	(0.036)	(0.476)				
$L\text{-}MVA_{i,t-1}$									0.785***	0.694***	0.759***	0.990***
									(0.028)	(0.029)	(0.031)	(0.223)
CF_{it}	-0.012*	-0.024**	-0.052**	-0.050*	-0.010*	-0.013*	-0.008*	0.004	0.009*	-0.007	0.014**	-0.038**
	(0.006)	(0.010)	(0.023)	(0.026)	(0.006)	(0.007)	(0.004)	(0.012)	(0.004)	(0.008)	(0.007)	(0.016)
$\Delta RGDPpc_{it}$	5.374***	2.130***	2.336*	4.348*	2.630**	1.284***	0.977*	0.872*	1.959	0.749***	1.089	6.449
	(1.772)	(0.141)	(1.406)	(2.982)	(1.129)	(0.148)	(0.547)	(0.508)	(1.063)	(0.168)	(1.007)	(13.11)
FD_{it}	1.034**	2.147***	3.650**	2.371**	1.920***	1.876***	3.424***	9.418*	-0.476	2.390***	-0.696	2.258**
	(0.552)	(0.587)	(1.586)	(1.026)	(0.478)	(0.290)	(0.871)	(5.657)	(0.671)	(0.565)	(1.159)	(1.014)
ERR_{it}	0.258**	-0.153	0.238*	-1.047	0.047	0.065**	-0.037	0.696**	0.027	-0.193	0.084*	-2.486
	(0.134)	(0.099)	(0.135)	(0.755)	(0.079)	(0.029)	(0.096)	(0.337)	(0.072)	(0.311)	(0.045)	(2.358)
$TRADE_{it}$	0.027***	0.021***	0.020***	0.061*	0.011***	0.014***	0.006*	0.062**	0.006**	0.009***	0.005**	0.014*
	(0.003)	(0.001)	(0.004)	(0.034)	(0.003)	(0.001)	(0.003)	(0.027)	(0.003)	(0.002)	(0.002)	(0.007)
Constant	-0.451	-0.310	0.275	3.345*	-0.034	-0.348***	0.4653*	-2.386*	-0.052	-1.008***	0.038	5.349*
	(0.296)	(0.264)	(0.437)	(1.902)	(0.180)	(0.092)	(0.285)	(1.424)	(0.144)	(0.190)	(0.269)	(3.204)
# of observations	1911	622	1289	259	1911	622	1289	259	1911	622	1289	259
# of country	73	22	51	10	73	22	51	10	73	22	51	10
HS-test[p-value]	0.15	0.44	0.12	0.39	0.152	0.655	0.497	0.99	0.372	0.562	0.412	0.720
AR-1[p-value]	0.00	0.04	0.00	0.05	0.00	0.03	0.00	0.41	0.00	0.01	0.00	0.04
AR-2[p-value]	0.16	0.72	0.25	0.73	0.53	0.71	0.77	0.74	0.47	0.34	0.18	0.34
CD-test[p-value]	0.41	0.07	0.33	0.27	0.33	0.46	0.25	0.08	0.29	0.07	0.25	0.36

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

3.3 Local Projection Method Estimation Method and Results

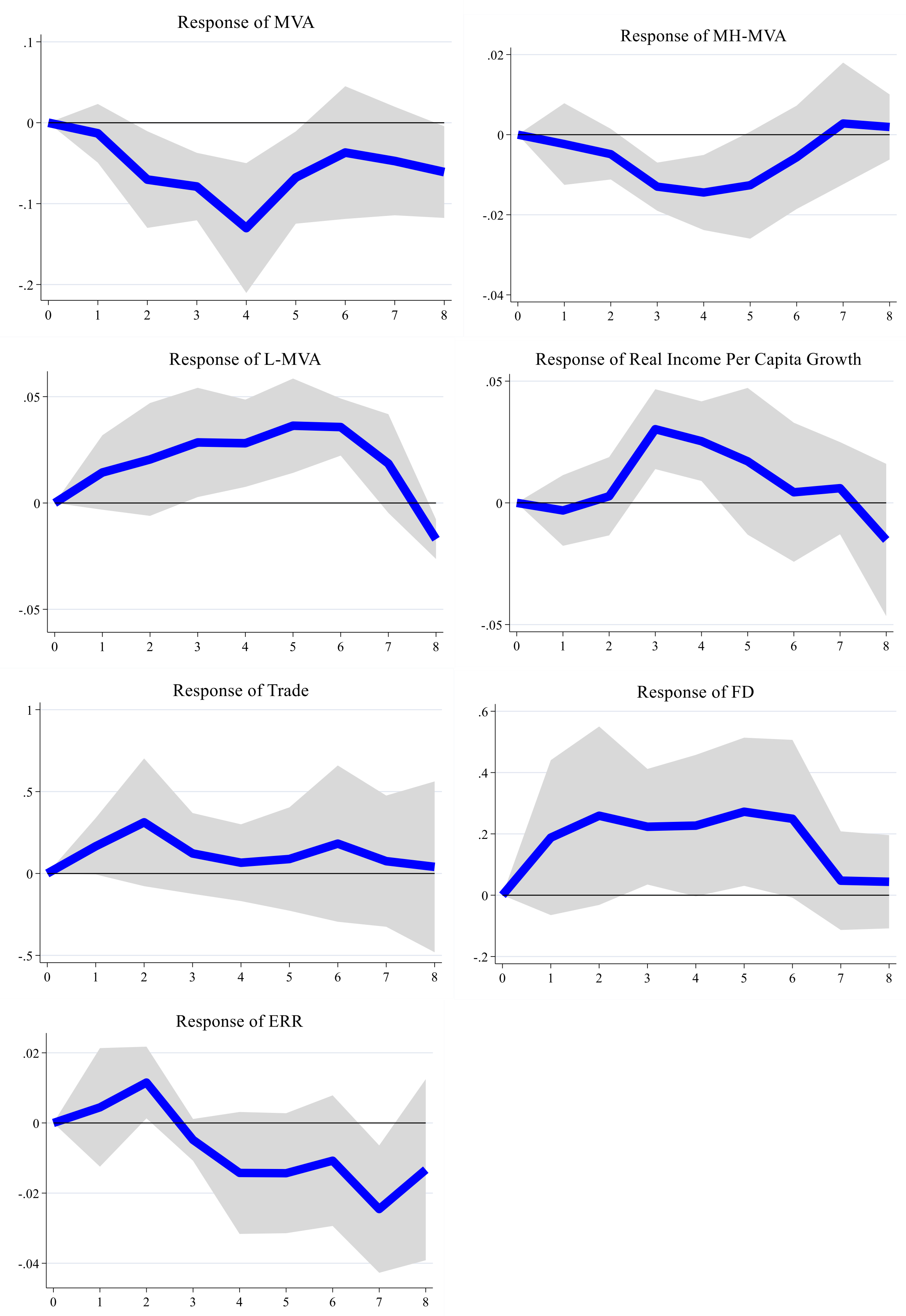
We now investigate the dynamic responses of our variables to 1% shock in capital flows. To this end, we employ local projection method by Jorda (2005). This procedure is robust to misspecification in the data generation process, reconciles the nonlinearities and provides impulse response functions in a simple univariate framework. To employ local projection method, we consider the following equation:

$$MVA_{i,t+k} - MVA_{i,t} = \alpha_i + \gamma_t + \sum_{j=1}^{q} \phi_{jk} MVA_{i,t-j} + \beta_k CF_{i,t} + \varphi_k Controls_{i,t} + \varepsilon_{i,t} \quad (6)$$

In eq. (6), i represents countries, t denotes years and k=0, 1, 2, …, 8 shows the k^{th} year after the shock in capital flows. We incorporate the lagged dependent variable to remove the autocorrelation concerns. The control variables include real income per capita growth, financial development, trade openness and *de facto* exchange rate regime. We also include the country and time fixed effects. β_k measures the cumulative impact of the shock in capital flows to manufacturing for each k. In other words, β_k shows the cumulative percentage change in manufacturing relative to its value in the beginning of the shock in capital flows. Impulse response functions are attained by mapping the estimated coefficient for β_k with respect to k = 0, 1, 2, …, 8. The dynamic responses of our variables are represented within the 90 percent confidence intervals.

Figure 3 shows the impact of 1% shock in capital flows on the variables of interest for the whole sample. In a similar vein to Teimouri and Zietz (2018), we consider the first three years as the short-run, 4 - 6 years as the medium-run and the rest of the years as the long-run in interpreting the dynamic response plots. Accordingly, the shock in capital flows tends to lower manufacturing (MVA) substantially in the short run albeit there is a relative recovery in the medium run. However, the impact of the shock does not fade-out in the long run. A similar pattern seems to be the case for medium and high technology manufacturing (MH-MVA) industry, albeit it fully recovers in the long run. On the contrary, low technology manufacturing (L-MVA) industry enhances during the short and medium run, albeit it deteriorates in the long run. Real income per capita growth appears to increase during the short run while growth enhancing effect of the shock tends to mitigate during the rest of the period. In a similar vein, trade openness also increases especially in the short run. Consistent with the conventional wisdom, 1% shock in capital flows leads to improvement in financial development during the short and medium run. The shock in capital flows induces more flexible exchange rate regimes in the short run while less flexible exchange rate regimes in the medium and long run.

Figure 3: The dynamic response plots



4. Concluding remarks

The conventional benefits of openness to financial flows are now viewed with greater skepticism. Recently, the International Monetary Fund (IMF) has begun to recommend capital flow management measures including capital controls. The shift in thinking has amplified the importance of the investigation of real effects of capital flows. This paper examines the impact of capital flows on manufacturing in advanced (ADV), emerging market and developing economies (EMDE) including Middle East and North Africa (MENA) countries during the 1990-2020 period.

The empirical findings in this paper suggest that there is a negative and significant association between capital flows and manufacturing in all country groupings. This indicates that capital flows lead to de-industrialization by lowering manufacturing industry. The potential reason for this is briefly explained by Rodrik and Subramanian (2009). Accordingly, capital flows cause currency appreciation, which reduces profitability and investment opportunities in the tradeable manufacturing sector. This corresponds to "financial Dutch disease" argument suggested by Corden (1994) and Palma (2005). Our empirical result also provides an empirical support to the recent literature including Benigno et al. (2015), Kalantzis (2015), Teimouri and Zietz (2018) and Botta (2021). In this vein, our finding indicates that capital flows tend to allocate the resources out of the manufacturing sector. Considering the outcome by Saffie et al. (2020), our empirical result may also imply that capital flows lead to servicification which is the mirror image of de-industrialization.

The aggregate manufacturing industry contains widespread heterogeneity in technology intensity levels. Therefore, we disaggregate manufacturing industry as medium-high-tech and low-tech industries. Our results suggest that there is a negative relationship between capital flows and medium-high-tech manufacturing, excluding MENA. This may be consistent with an argument that side effects of capital flows including higher volatility and greater uncertainty provide an unfavorable environment for medium-high-tech manufacturing industries which require long investment cycles (Yu and Qayyum, 2023). The negative effect of capital flows appears to be the case for the low-tech manufacturing in MENA. However, capital flows tend to enhance low-tech manufacturing in EMDE. In this vein, deindustrialization caused by capital flows appears to be the case for medium-high-tech manufacturing industries in the samples of ADV and EMDE while low-tech manufacturing industries in MENA. We can also suggest that capital flows lead to allocation of resources from medium-high-tech to low-tech manufacturing in EMDE.

Considering capital flows impede medium-high-tech manufacturing industry which has higher productivity, we may infer that capital flows tend to expand productivity and income disparities. To minimize the side effects of financial openness, the economies may consider capital flow management measures including capital controls as suggested by the IMF. In addition, sound and credible macroeconomic policies, flexible exchange rate regime arrangements and improvement in financial markets are expected to minimize the undesirable effects of capital flows. As consistent with the remarks by Aiginger and Rodrik (2020), policy makers may design and implement economic and social policies that place industrialization at the core. These policies may also incorporate collaboration between public and private sectors. Also, the movement from "turbo globalization" to "responsible globalization" along with international cooperation and solutions to globalization related problems may increase the success of policies. The results in this paper imply that it is possible to finance manufacturing investment with capital flows, but it could be risky.

References

Aiginger, K., Rodrik, D., 2020. Rebirth of industrial policy and an agenda for the twenty-first century. J. Ind. Compet. Trade 20, 189-207.

Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. Rev. Econ. Stud. 58 (2), 277-297.

Arellano, M., Bover, O., 1995. Another look at the instrumental variable estimation of error-components models. J. Econometrics 68 (1), 29-51.

Bairoch, P., Kozul-Wright, R., 1998. Globalization myths: some historical reflections on integration, industrialization and growth in the world economy. In: R. Kozul-Wright, R. Rowthorn (Eds), Transnational corporations and the global economy (pp. 37-68). London: Palgrave Macmillan UK.

Baldwin, R., Lopez-Gonzalez, J., 2015. Supply-chain trade: A portrait of global patterns and several testable hypotheses. World Econ. 38 (11), 1682-1721.

Benigno, G., Fornaro, L., 2014. The financial resource curse. Scand. J. Econ. 116 (1), 58-86.

Benigno, G., Converse, N., Fornaro, L., 2015. Large capital inflows, sectoral allocation, and economic performance. J. Int. Money Financ. 55, 60-87.

Benigno, G., Fornaro, L., Wolf, M., 2020. The global financial resource curse. FRB of New York Staff Report no.915.

Bond, S.R., 2002. Dynamic panel data models: a guide to micro data methods and practice. Port. Econ. J. 1 (2), 141-162.

Bortz, P.G., 2018. Flujos de capital y endeudamiento externo: Algunas reflexiones para América Latina. In: M. Abeles, E. Perez-Caldentey, S. Valdecantos (Eds.), Estudios sobre financierizacion en America Latina, 295-321, Santiago de Chile: United Nations Press.

Botta, A., 2017. Dutch disease-cum-financialization booms and external balance cycles in developing countries. Braz. J. Polit. Econ. 37, 459-477.

Botta, A., 2021. Financial liberalisation, exchange rate dynamics and the financial Dutch disease in developing and emerging economies. In: Bonizzi, B., Kaltenbrunner, A., Ramos, R. (Eds.), Emerging Economies and the Global Financial System, 181-196, Routledge.

Chandran, V.G.R., Munusamy, 2009. Trade openness and manufacturing growth in Malaysia. J. Policy Model. 31, 637–47.

Chudik, A., Pesaran, M.H., 2015. Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. J. Econometrics. 188 (2), 393-420.

Chudik, A., Pesaran. M.H., 2013. Large Panel Data Models with Cross-sectional Dependence: A Survey. CAFE Research Paper no. 13.15.

Chudik, A., Pesaran, M.H., Tosetti, E., 2011. Weak and strong cross-section dependence and estimation of large panels. Economet. J. 14 (1), C45-C90.

Coakley, J., Fuertes, A., Smith, R., 2001. Small Sample Properties of Panel Time-series Estimators with I(1) Errors. Birkbeck College Discussion Paper No. 03/ 2001.

Colacchio, G., Davanzati, G.F. (2017). Endogenous money, increasing returns and economic growth: Nicholas Kaldor’s contribution. Struct. Change Econ. Dynamics. 41, 79-85.

Corden, W.M., 1994. Economic policy, exchange rates, and the international system. Oxford: Oxford University Press.

Crystallin, M., Efremidze, L., Kim, S., Nugroho, W., Sula, O., Willett, T., 2015. How common are capital flows surges? How they are measured matters-a lot. Open Econ. Rev. 26, 663-682.

Demir, F., 2009. Financialization and manufacturing firm profitability under uncertainty and macroeconomic volatility: Evidence from an emerging market. Rev. Dev. Econ. 13 (4), 592-609.
Dowrick, S., Golley, J., 2004. Trade openness and growth: who benefits?. Oxford Rev. Econ. Pol. 20 (1), 38-56.
Edwards, S., 2011. Exchange-rate policies in emerging countries: eleven empirical regularities from Latin America and East Asia. Open Econ. Rev. 22, 533-563.
Fuleky, P., Ventura, L., Zhao, Q., 2018. Common correlated effects and international risk sharing. Int. Financ. 21 (1), 55-70.
Gelos, R.G., Werner, A.M., 2002. Financial liberalization, credit constraints, and collateral: investment in the Mexican manufacturing sector. J. Dev. Econ. 67 (1), 1-27.
Haraguchi, N., Martorano, B., Sanfilippo, M., 2019. What factors drive successful industrialization? Evidence and implications for developing countries. Struct. Change Econ. D. 49, 266-276.
Ilzetzki, E., Reinhart, C.M., Rogoff, K.S., 2022. Rethinking exchange rate regimes. In: Gopinath, G., Helpman, E., Rogoff, K.S., Handbook of International Economics, Vol. 6, 91-145, Amsterdam: Elsevier.
Jordà, Ò., 2005. Estimation and inference of impulse responses by local projections. Am. Econ. Rev. 95 (1), 161-182.
Kalantzis, Y., 2015. Financial fragility in small open economies: firm balance sheets and the sectoral structure. Rev. Econ. Stud. 82 (3), 1194-1222.
Kaldor, N., 1966. Causes of the slow rate of economic growth of the United Kingdom, Cambridge University Press: Cambridge.
Lartey, E.K., 2008. Capital inflows, Dutch Disease effects, and monetary policy in a small open economy. Rev. Int. Econ. 16 (5), 971-989.
Levine, R., 1997. Financial development and economic growth: views and agenda. J. Econ. Lit. 35 (2), 688-726.
Martorano, B., Sanfilippo, M., 2015. Structural change and wage inequality in the manufacturing sector: long run evidence from East Asia. Oxford Dev. Stud. 43 (2), 212-231.
Mody, A., Murshid, A.P., 2005. Growing up with capital flows. J. Int. Econ. 65 (1), 249-266.
Palma, G.J., 2005. Four sources of "de-industrialisation" and a new concept of the "Dutch disease". In: Ocampo, J. (ed.), Beyond Reforms: Structural Dynamics and Macroeconomic Vulnerability, New York: Stanford University Press and World Bank.
Pesaran, M.H., 2004. General diagnostic tests for cross section dependence in panels. IZA Discussion Paper No. 1240.
Pesaran, M.H., 2006. Estimation and inference in large heterogeneous panels with a multifactor error structure. Econometrica, 74 (4), 967-1012.
Pesaran, M.H. (2007). A simple panel unit root test in the presence of cross-section dependence. J. Appl. Econom. 22 (2), 265-312.
Rodrik, D., 2013. Unconditional convergence in manufacturing. Q. J. Econ. 128 (1), 165-204.
Rodrik, D., 2016. Premature deindustrialization. J. Econ. Growth, 21, 1-33.
Rodrik, D., Subramanian, A., 2009. Why did financial globalization disappoint?. IMF staff papers, 56 (1), 112-138.
Rodrik, Dani., 2007, Industrial Development: Stylized Facts and Policies, in United Nations, Industiral Development for the 21st Century, U.N., New York.
Rogoff, K.S., Husain, A.M., Mody, A., Brooks, R., Oomes, N., 2004. Evolution and performance of exchange rate regimes. IMF Oc. Pap. 229, 1-55.
Roodman, D., 2009. A note on the theme of too many instruments. Oxford B. Econ. Stat. 71 (1), 135-158.

Saffie, F., Varela, L., Yi, K.M., 2020. The micro and macro dynamics of capital flows. National Bureau of Economic Research Working Paper No. w27371.
Sarafidis, V., Yamagata, T., Robertson, D., 2009. A test of cross section dependence for a linear dynamic panel model with regressors. J. Econometrics, 148 (2), 149-161.
Schumpeter, J.A., 1911. Theorie der wirtschaftlichen Entwicklung. Duncker & Humblot: Leipzig.
Singh, A., Weisse, B.A., 1998. Emerging stock markets, portfolio capital flows and long-term economie growth: Micro and macroeconomic perspectives. World Dev. 26 (4), 607-622.
Svirydzenka, K., 2016. Introducing a new broad-based index of financial development. IMF Working Paper No.16/5.
Szirmai, A., 2012. Industrialisation as an engine of growth in developing countries, 1950–2005. Struct. Change Econ. D. 23 (4), 406-420.
Szirmai, A., Verspagen, B., 2015. Manufacturing and economic growth in developing countries, 1950–2005. Struct. Change Econ. D. 34, 46-59.
Teimouri, S., Zietz, J., 2018. The impact of surges in net private capital inflows on manufacturing, investment, and unemployment. J. Int. Money Financ. 88, 158-170.
Yu, Y., Qayyum, M., 2023. Impacts of financial openness on economic complexity: Cross-country evidence. Int. J. Financ. Econ. 28 (2), 1514-1526.