Imitate or Innovate? FDI, Technology, and Income Levels in Middle Income Countries

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Kul Kapri\(^2\)
Md Rajib-Ur Rahman\(^3\)

ABSTRACT

This paper analyzes the impact of foreign direct investment (FDI) and technology on income levels in middle-income countries. These two factors are used as the measures of imitation and innovation of technology respectively. From micro perspectives, technology entails a great deal of incentive for individuals, firms, and industry. But, how innovation and imitation of technology lead a country as a whole to a higher level of economic performance is not as direct as microeconomic perspectives. The focus of this paper is to analyze the individual impacts of these two variables on the level of GDP per capita for two groups of countries: upper-middle-income (UMI) and the lower-middle-income (LMI) countries. The baseline results show a stronger effect of FDI (imitation) compared to technology (innovation) for both sets of countries. However, when we control for potential endogeneity using the instrumental variable approach, imitation favors the LMI countries while innovation favors the UMI countries. The findings can be applied in the context of “more developed” and “less developed” countries suggesting that the less developed countries may be better-off focusing on the imitation of technology instead of innovating new ones, leaving the role of innovation to the more developed countries.

JEL Classification: F21, O3

Keywords: FDI, Imitation, Innovation, Technology, Patent, Income

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1. Introduction

This paper analyzes the impact of foreign direct investment (FDI) and technology on income levels. In particular, we consider FDI as a measure of imitation of foreign technology and export of high-technology goods as a measure of innovation in a given country. The focus of this paper is to compare the individual impacts of these two factors on the income levels in a disaggregated panel of upper-middle-income (UMI) and the lower-middle-income (LMI) countries. This topic is well studied in a micro context. Especially, the innovation and the adoption of technology are found to entail a great deal of incentive for individuals, firms, as well as for the whole industry and they help with overall economic growth (Segerstrom, 1991). In that context, how innovation and imitation, from the macro perspective, lead a country as a whole to a higher level of income also needs due attention in the empirical literature. This paper studies such impact by examining the data from middle income countries as these countries become major economic centers for both innovation and adoption of technology (Bulman et al., 2016). To our knowledge, this is the first paper that studies the imitation-innovation-income nexus.

A number of factors play a vital role on the economic performance of a country, including the imitation and innovation of technology. Therefore, it’s worthwhile to identify the sources of technological development at a country level so that we can use proper proxies to measure the imitation and innovation of technology. Lucas (1988) highlights education as one of the main sources of endogenous growth and that it contributes to innovation. Arguably, an increase in the stock of human-capital through education leads to innovation and hence affects economic growth positively. In several theoretical as well as empirical studies, it is shown that there exists positive correlation between schooling and subsequent economic growth (Hicks, 1987; Tilak, 1989; Barro, 1991; Stadler, 2012). Similarly, another group of endogenous growth models focus on the role of research and development (R&D) in innovation (Romer 1990; Grossman & Helpman 1991; Aghion & Howitt, 1992). Innovation can be characterized in various ways based on a country’s available resources. Among the most common tools of innovation are human capital accumulation, technological progress, and skilled labor force. Ultimately, an improvement in these variables leads a country to produce more high-technology goods. For that reason, we use high-technology exports (% of GDP) as a measure of innovation in a given country.

On the other hand, foreign direct investments (FDI) has also been identified as one of the major contributors of economic growth in host countries (Ram & Zhang, 2002; Li & Liu, 2005). Because developing countries have higher marginal rate of return on capital investment, these countries are attractive for FDI (Asiedu, 2002). With the increase in FDI, firms in developing countries would find it cheaper to imitate the technology (Glass & Saggi, 2002; Liu, 2008)). This would allow the host countries to achieve better economic performance. Countries such as Brazil, China, India, and Mexico have benefitted from this kind of technology transfer (Ivarsson & Alvstam, 2005). For these reasons, FDI can be used as a measure of technology adoption and imitation (Brambilla et al., 2009). Hence, we use net inflow of FDI (% of GDP) as a measure of imitation in a given country.

Given the importance of FDI (imitation) and technology (innovation) as evidenced above, the objective of this paper is to compare the effects of these two factors on the income levels across countries. The main contribution of the paper lies in analyzing and comparing the impact of imitation and innovation on economic performance at the disaggregated sample of the middle-income countries. The baseline results show a stronger effect of imitation
compared to innovation, for both sets of countries in the middle income category. However, when we control for the potential endogeneity by using the instrumental variable approach, imitation favors the LMI countries more significantly while innovation favors the UMI countries. The findings can be generalized to the case of “more developed” and “less developed” countries suggesting that the latter group might be better off imitating foreign technology through FDI rather than investing in new technology.

The rest of the paper is organized as follows: Section 2 reviews the relevant literature; Section 3 presents the theoretical framework and the empirical methodology used in the analysis; Section 4 presents the description of the data; Section 5 presents empirical results, and Section 6 concludes with a discussion of policy implications.

2. Literature Review

Economic performance of a country rests on both innovation and imitation. But which one between the two is more important for a country? At the firm level, Segerstrom (1991) shows that firms find it more profitable to imitate in industries with single leader and more profitable to innovate in industries with two leaders. But, the impact of innovation and imitation may have different impact at the macro level. One of the approaches to analyze this difference would be to examine their impacts on the level of income across countries. In the context of this paper, the main objective is to study, then, how innovation and imitation (controlling for each other) are associated with income levels across countries.

Innovation requires a large amount of capital investment and it is something possessed by the more developed countries. Imitation on the other hand, requires, less capital investment and is a source of increasing production in developing countries. So, the major issue is to use the right variable to measure innovation and imitation. Archibugi and Coco (2005) construct a new methodology of technology and innovation measurement and compare with other existing methods such as Furman et al. (2002), Desai et al. (2002), and Lall and Albaladejo (2001). These papers use patents, R&D resources such as R&D expenditure, scientific publications, royalties and license fees, infrastructures, trade indicators, etc.

Among the various articles focusing on the measurement of technology, Furman et al. (2002) considers non-primary exports for non-core economies as a source of active “technology transfer”. Desai et al. (2002) includes medium and high-technology exports as diffusion of recent innovations. Lall and Albaladejo (2001) considers manufactured exports per capita and the share of medium and high-technology exports on total exports as a component of the competitive industrial performance index and provides the widest use of trade-based information, human resources and different economic indicators. Desai, et al. (2002), in particular, uses four dimensions of technology: (i) technology creation, measured by the number of patents granted to residents per capita and by receipts of royalties and license fees from abroad per capita, (ii) diffusion of recent innovations, measured by the number of internet hosts per capita and the share of high-technology and medium-technology exports in total goods exports, (iii) diffusion of old innovations, measured by telephones (mainline and cellular) per capita and electricity consumption per capita, and (iv) human skills, measured by the mean years of schooling in the population aged 15 and older, and the gross tertiary science enrolment ratio. The main goal of Desai et al. (2002) paper is to decompose the sources of “embodied” economic growth into domestic factors (i.e., domestic innovation) and foreign factors (such as foreign innovation adopted through FDI). The paper further provides evidence that the adoption channel has been crucial in developing countries,
and accounts for about 65% of embodied growth. On the other hand, developed countries
grow mainly through domestic innovation channel which explains 85% of their “embodied”
growth. According to the authors, a counterfactual exercise shows that if all countries reached
the same research productivity, then (i) the world’s steady-state growth rate would double,
and (ii) developing countries would close the gap in terms of both growth rate and income per
capita. That is why the examination of the relationship between technology imitation and
imitation and income levels is an interesting topic.

Existing studies do not show a consistent result on the relationship between
innovation/imitation and the economic performance at the firm level. Carkovic and Levine
(2002) point out that the firm-level studies of particular countries often claim that FDI does
not boost economic growth. These studies shed doubts on the true existence of positive
spillovers from foreign to domestic-owned firms. Aitken and Harrison (1999), for example,
found no evidence of positive technology spillover from foreign-owned to domestic-owned
firms in Venezuela between 1979 and 1989. Likewise, Haddad and Harrison (1993), in their
study of Morocco over the period of 1985 through 1989, discovered a negative spillover from
foreign presence to the productivity growth of domestic firms, but it was not statistically
significant.

While there is no consensus on the literature on the measure of innovation and imitation
and their respective impact on the economic performance, high-technology exports (% of
total manufactured exports) is used as a proxy for innovation and the amount of FDI (% of
GDP) is used as a proxy for imitation. Using these proxies, we analyze their association with
GDP per capita in the sample of middle income countries.

3. Model

A simple economic growth model can be used to study the relationship between
technology (imitation and innovation) and income level of a country. In the neoclassical
model, FDI (imitation) generates growth by transferring capital and increasing the efficiency
of the investment. In endogenous model, it accelerates economic growth by diffusing
technology and knowledge from the developed countries to the host countries (Borensztein, et
al., 1998; Liu, 2008; Santacreu, 2015). As FDI led technology and local innovation enhances
the comparative advantage of the country, this comparative advantage promotes trade.
Therefore, it increases the possibility of higher income in those countries which makes it
unique and more favorable for accelerating the growth path of the country
(Balasubramanyam, et al., 1996; De Mello, 1999).

With that background, the paper examines the relationship among imitation,
innovation and economic performance of two different groups of middle-income countries,
measured by their per capita GDP. The paper uses panel data of 47 middle income countries
from 1988 to 2015. The panel dataset is used to analyze the impact of imitation and
innovation on income levels. Because of the missing data for certain countries in the
developing world, the data is an unbalanced panel. The following baseline regression
equation is estimated to examine the desired relationship between FDI (imitation) and
technology (innovation).

\[
\ln(GDP_{it}) = \alpha + \beta_1 FDI_{it} + \beta_2 Tech_{it} + \beta_3 X_{it} + v_i + \epsilon_{it} \tag{1}
\]

Where the dependent variable, \(\ln(GDP_{it})\), is the natural log of GDP is per capita of
different countries over time, FDI is foreign direct investment as a percentage of GDP, a
measure of imitation. \(Tech_{it}\) includes high-technology exports (% manufactured exports), a
measure of innovation. $X_{it}$ includes other explanatory variables such as current account balance, government expenditure, domestic credit to private sector by banks, etc. to control for other macroeconomic factors. Finally, $v_i$ is the country specific effect.

To test the above model, we first test whether unobserved country specific heterogeneity is correlated with explanatory variables using the Hausman (1978) test. Due to presence of unobserved country specific heterogeneity, fixed effect is used as suggested by the Hausman test. Baltagi (2008) and Wooldridge (2013) provide a good overview of fixed-effects and random effects models. Accordingly, this paper considers fitting models of the following form:

$$y_{it} = \alpha + X_{it} \beta + v_i + \epsilon_{it}$$

In this model, $\epsilon_{it}$ is the residual; we want estimates of $\beta$. $v_i$ is the country-specific residual that differs between countries, but its value is constant for a given country. Here each country is a unique unit. $\epsilon_{it}$ is the residual with the usual properties (mean 0, uncorrelated with itself, uncorrelated with $X$, uncorrelated with $v$, and homoskedastic),

To choose between fixed effect and random effect model, Hausman test is used. The Hausman statistic is distributed as $\chi^2$ and is computed as follows:

$$H = (\beta_c - \beta_e)'(V_c - V_e)^{-1}(\beta_c - \beta_e)$$

Where $\beta_c=$ is the coefficient vector from the consistent estimator, $\beta_e=$ is the coefficient vector from the efficient estimator, $V_c=$ is the covariance matrix of the consistent estimator, $V_e=$ is the covariance matrix of the efficient estimator.

4. Data

The data used in the analysis is obtained from the World Development Indicators database maintained by the World Bank. Table 1 in the Appendix shows the description of the variables. Among the main variables, FDI inflow measures the foreign direct investment, net inflows as a percent of GDP. High-Tech Exports represents the high-technology exports as a percent of manufactured exports. Similarly, Current Account is the current account balance as a percent of GDP. Domestic Credit measures the domestic credit to private sector by banks, also as a percent of GDP. Finally, Education Expenditure measures the government’s expenditure on education as a percent of GDP. From the summary statistics in Table 1 we see the variation in three ways. First, “overall” variation shows the variation across countries over time. Second, “between” variation provides information on the variation across countries. And third, “within” variation provides information regarding variation within each country over time. The dependent variable is the natural log of GDP per capita. Among the independent variables, it is evident from the data that net FDI inflow is 4.15% of GDP whereas high-technology as a percent of GDP turns out to be 10.65%. Similarly, domestic credit to private sector by banks (% of GDP) is about 39%, government expenditure on education, total (% of GDP) is about 4%, and current account balance is 2.68% below the GDP levels.

5. Empirical Results

To observe the impact of imitation and innovation on GDP per capita, we use the fixed effect model as suggested by the Hausman test. To understand if the impact of imitation and
innovation depends on certain characteristics of the countries in the sample, the countries have been classified based on their per capita income. According to the World Bank convention, countries with per capita income below 1025 have been defined as lower income economies, per capita income between 1025 and 4035 as lower middle income economies, per capita income between 4035 and 12475 as upper middle income economies and countries with per capita income above 12475 have been defined as high income economies. The focus of this paper is in the lower and upper middle income countries.

5.1 Baseline Results: Fixed Effect Regression

Table 2 in the appendix presents the baseline results based on the fixed effect regression model. The first column presents the results pertaining to the UMI countries, second column presents the results pertaining to the LMI countries, and the third column shows the results for the whole sample. It is evident from the table that FDI has highly significant relation with GDP per capita for all three sets of analyses. However, the magnitude of the impact is higher for the LMI countries compared to the UMI countries. To be specific, one percentage point increase in FDI in the LMI countries increases the GDP per capita by 1.03%. This impact is 0.997% for the UMI countries whereas the impact is only 0.785% for the whole sample. The results are consistent with existing literature that FDI accelerates and promotes technology transfer in host country. That is, FDI creates an environment for imitation of technology that is developed in a foreign country and helps improve the economic performance of the host country, measured by GDP per capita. And, such impact is higher in the less-developed countries as these countries are capital scarce and FDI fuels in the much needed capital investment in less-developed countries.

Next, to analyze the impact of innovation, we focus on the relationship between high-technology exports (% of total manufactured exports) and GDP Per capita. From the regression table, it is evident that high technology export as a measure of innovation also has highly significant positive relation with GDP per capita in the case of UMI countries. However, the impact is negative in the LMI countries and is insignificant when the whole sample is considered. To be specific, a one percentage point increase in high-technology exports increases the GDP per capita by 0.45% in UMI but decreases by 0.5% in LMI. This relationship is not significant for the aggregated sample.

From the fixed effect results above, we see that FDI (imitation) consistently shows a positive impact on GDP per capita in the case of middle income countries. However, the impact of high-technology exports (innovation) on GDP per capita shows a mixed result, depending on the sample used. Most of the developing countries lack resources, and thereby focus on to the labor-intensive industries. These labor-intensive industries are mainly based on unskilled labor which helps these countries to boost their GDP per capita. Lack of resources but abundance of unskilled labor force has been the main driving force in developing countries. Therefore, in these countries, innovation showing negative association with GDP per capita makes sense. However, FDI has positive relationship with GDP per capita in these countries which is due to the fact that the developing countries exhibit future prospect of growth which attracts foreign investor in these countries. This is consistent with our argument that FDI accelerates and promotes technology transfer from capital-abundant foreign country and hence positively impacts the economic performance of the capital-scarce host country.
In sum, the aggregate analysis of both developing and developed countries shows mixed results when we analyze the association between innovation and GDP per capita. However, the disaggregated analysis shows a significant positive relation between innovation and GDP per capita for the UMI countries while the results are negative for the LMI countries. FDI (imitation) consistently shows a positive impact on GDP per capita but innovation measures don’t show a significant impact.

5.2. Issue of Endogeneity and the Instrumental Variable Regression

This inconsistency in the results above may be because of the potential endogeneity problem in the panel data. The empirical model shows the relationship among GDP per capita, FDI, and high-technology exports. The relationship could possess potential endogeneity issue due to the intricate relationship among the variable of interest. Countries that have higher GDP per capita could attract higher FDI and the relationship between high-technology exports and GDP per capita may not be completely exogenous because countries with higher GDP per capita could specialize in high-tech exports.

While addressing the problem of endogeneity completely is not an easy task, we use the instrumental variable technique to properly identify the regression equation. To do so, we use two exogenous variables: lag of FDI and the number of patent applications in that country. Patent applications data are obtained from the WDI database that report the worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights for an invention. Since the patent provides protection for the invention to the owner of the patent, it is a good predictor of high-technology production and exports of goods, but it does not directly affect GDP per capita. So, we use the number of patent applicants in that country as an instrument for high-technology exports from that country. This satisfies the usual assumptions of an instrumental variable: it is related to the endogenous variable (high-tech exports) and is not a direct cause of the dependent variable (income levels). The combination of lag-FDI and patents diminish the potential endogeneity present in the model. The use of lag term as an instrument is a standard practice in the literature such as in Hanson & Tarp (2000). The use of patents as an instrument for technology is our contribution to the literature.

Overall, the results in Table 3 show that FDI or imitation still remain to be positive and significant in the case of LMI whereas the significance fades in the case of UMI. The aggregated sample still shows positive impact. Specifically, a one percentage point increase in FDI in the aggregated sample is associated with 2.44% increase in GDP per capita but this impact increase to 4.71% in the LMI countries, with no significance for the UMI countries. On the other hand, high technology export of manufacturing goods (or the innovation) has significantly positive impact with GDP per capita in the case of UMI but it does not have a significant impact in the case of LMI and the significance goes down in the aggregated sample. The results show that one percentage point increase in high-technology exports increases GDP per capita for the whole sample by 4.73% but this impact is weakly significant. However, this impact significantly increases to 5.69% in the case of UMI countries, but there is not significance impact for the LMI countries.

An appealing feature of this analysis is that it mitigates some of the effects of endogeneity and unobserved heterogeneity. These issues are difficult to address at the aggregate level when we analyze both developing (lower income) and developed (higher income) countries.
By using the FDI-lag and the number of patents as instrumental variables, we observe the following results:

1. For the aggregated data, FDI (imitation) remains to show a more significant and positive association with the level of income, compared to technology (innovation).
2. For the UMI countries, technology (innovation) has a significant association with the level of income, but FDI (imitation) does not.
3. For the LMI countries, FDI (imitation) has a significant association with the level of income, but technology (innovation) does not.

These results have important policy implications. The findings can be generalized to the case of developed countries vs. developing countries suggesting that the developing countries are better off focusing on capital investment and imitation of the technology instead of innovating new ones.

6. Conclusion and Discussion

This paper analyzes the impact of FDI (imitation) and technology (innovation) on income levels in a panel of 47 middle income countries during the period of 1988 to 2015. The main takeaway from the analysis are based on the instrumental-variable regression that address the potential endogeneity in the model. In the aggregated sample of all of the middle income countries, both imitation and innovation show a positive association with the level of income, although innovation is weakly significant. However, the results in the disaggregated panels are mixed. In the upper-middle-income (UMI) countries, the impact of innovation seems to be positive and significant while imitation shows no impact. On the other hand, in the lower-middle-income (LMI) countries, the impact of imitation seems to be positive and significant but innovation shows no impact.

The results have important policy implications. The findings can be generalized to compare the impact of imitation and innovation in the case of “more developed” and “less developed” countries suggesting that less developed countries are better off focusing imitation of the technology instead of innovating new one, leaving the role of innovation to the more developed countries. The significant positive impact of innovation, but insignificant impact of imitation, in the more developed countries are as expected. For example, USA has been the leader in technology innovation and its economy is based on the high-technology industry. Many other countries depend on the technology innovated by the USA. In fact, China’s economy has benefitted immensely from imitating the technology innovated by the USA. However, the Chinese model of technology adoption has been criticized for not being consistent with the intellectual property rights. So, a better policy would be to design a proper channel that would appropriately transfer the technology innovated in the more developed countries to the less developed countries, without having to make it a topic of public allegations.
### Appendix

Table 1: Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Observations</th>
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<td></td>
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<td></td>
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<tr>
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<td>6.93</td>
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<td>9.42</td>
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<td></td>
<td></td>
<td></td>
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<tr>
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<td>14.33</td>
<td>0.03</td>
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<tr>
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<td>35.82</td>
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<td></td>
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<td>4.84</td>
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<td>overall</td>
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<td>-29.83</td>
<td>33.68</td>
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<td>1.17</td>
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<td>-0.74</td>
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<td>T-bar = 9.5082</td>
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Variable Description:

GDP Per Capita = Natural log of GDP Per Capita  
FDI Inflow = Foreign direct investment, net inflows (% of GDP)  
High-Tech Exports = High-technology exports (% of manufactured exports)  
Current Account = Current account balance (% of GDP)  
Domestic Credit = Domestic credit to private sector by banks (% of GDP)  
Education Expenditure = Government expenditure on education, total (% of GDP)
Table 2: Fixed Effect Regression. Dependent variable == log(GDP Per Capita)

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<td></td>
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<td>Lower Middle</td>
<td>Both Upper</td>
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<tr>
<td></td>
<td>Income</td>
<td>Income</td>
<td>&amp; Lower</td>
</tr>
<tr>
<td></td>
<td>Countries</td>
<td>Countries</td>
<td>Middle</td>
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<td>0.01035***</td>
<td>0.007854***</td>
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<td>inflows (% of GDP)</td>
<td>(0.002393)</td>
<td>(0.002316)</td>
<td>(0.001907)</td>
</tr>
<tr>
<td>High-technology exports ( % of</td>
<td>0.004500***</td>
<td>-0.005000***</td>
<td>-0.0006537</td>
</tr>
<tr>
<td>manufactured exports)</td>
<td>(0.001191)</td>
<td>(0.001521)</td>
<td>(0.001149)</td>
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<td>0.01015***</td>
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</tr>
<tr>
<td>Domestic credit to private</td>
<td>0.008396***</td>
<td>0.008145***</td>
<td>0.009511***</td>
</tr>
<tr>
<td>sector by banks ( % of GDP)</td>
<td>(0.0005547)</td>
<td>(0.0007800)</td>
<td>(0.0005290)</td>
</tr>
<tr>
<td>Government expenditure on</td>
<td>0.004909</td>
<td>0.005843</td>
<td>0.001154</td>
</tr>
<tr>
<td>education, total ( % of GDP)</td>
<td>(0.008400)</td>
<td>(0.005727)</td>
<td>(0.005292)</td>
</tr>
<tr>
<td>Constant</td>
<td>8.4131***</td>
<td>7.4329***</td>
<td>7.9636***</td>
</tr>
<tr>
<td></td>
<td>(0.04344)</td>
<td>(0.03650)</td>
<td>(0.03137)</td>
</tr>
<tr>
<td>Observations</td>
<td>443</td>
<td>390</td>
<td>833</td>
</tr>
</tbody>
</table>

Standard errors in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01
Table 3: Instrumental Variable Regression: Dependent Variable == log(GDP Per Capita).
Instrumented: FDI and High Technology Exports.
Instruments: FDI-lag and number of patent applications.

<table>
<thead>
<tr>
<th></th>
<th>(1) Upper Middle Income Countries</th>
<th>(2) Lower Middle Income Countries</th>
<th>(3) Both Upper &amp; Lower Middle Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumented Foreign direct investment, net inflows (% of GDP)</td>
<td>-0.001915 (0.01639)</td>
<td>0.04709** (0.01896)</td>
<td>0.02440*** (0.008050)</td>
</tr>
<tr>
<td>Instrumented High-technology exports (% of manufactured exports)</td>
<td>0.05698** (0.02453)</td>
<td>0.03986 (0.03716)</td>
<td>0.04731* (0.02479)</td>
</tr>
<tr>
<td>Current account balance (% of GDP)</td>
<td>-0.007775 (0.007656)</td>
<td>0.01262* (0.006602)</td>
<td>0.01356*** (0.004633)</td>
</tr>
<tr>
<td>Domestic credit to private sector by banks (% of GDP)</td>
<td>0.0002360 (0.003109)</td>
<td>0.008668*** (0.001769)</td>
<td>0.006420*** (0.001622)</td>
</tr>
<tr>
<td>Government expenditure on education, total (% of GDP)</td>
<td>-0.01666 (0.02794)</td>
<td>0.009102 (0.03976)</td>
<td>0.01173 (0.01793)</td>
</tr>
<tr>
<td>Constant</td>
<td>8.3468*** (0.1520)</td>
<td>6.8964*** (1.4846)</td>
<td>7.5087*** (0.2040)</td>
</tr>
</tbody>
</table>

Observations: 345 232 577

Standard errors in parentheses
* \( p < 0.10 \), ** \( p < 0.05 \), *** \( p < 0.01 \)
References


