Inflation Targeting and Private Domestic Investment in Developing Countries

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November 16, 2021

Abstract

This paper analyses the effect of inflation targeting on private domestic investment in developing countries. Using the propensity scores matching method, which allows addressing the self-selection bias in the policy adoption, I find that inflation targeting has increased private domestic investment from 1.17 to 2.69 percentage points in targeting countries compared to non-targeting countries. The estimated coefficients are economically meaningful and robust to a battery of econometric tests and alternative specifications. Finally, I highlight several heterogeneities in the effect of inflation targeting, depending on various factors.

Keywords: • Inflation targeting • Private domestic investment • Developing countries • Propensity score matching

1 Introduction

Since its adoption by New Zealand in 1990, the monetary policy framework based on inflation targeting has been followed by a growing number of developing countries, especially after the Asian crisis. Today, nearly 40 countries have an inflation target, and

more than half of these are emerging economies. More recently, Moldova (in 2013), Kazakhstan (in 2015), Russia (in 2015), and Ukraine (in 2017) also joined the growing group of countries with an inflation target. Many of the economies concerned have chosen to implement inflation targeting after a crisis or high inflation episodes. It was particularly the case of Latin American countries during the 1980s, due to the massive monetization of their fiscal deficits. A monetary policy framework — notably inflation targeting — then appears to be a measure aimed at increasing the stability of the economic environment and the credibility of monetary policy.

An extensive literature analyzes the interactions between monetary and fiscal policies. In a pioneering paper, Sargent and Wallace (1981) develop the famous Unpleasant Monetarist Arithmetic, asserting that central bank independence is necessary but not sufficient condition to ensure the stability of the general price level. By illustrating an initial situation characterized by a deterioration in public finances and by a monetary policy geared towards price stability, Sargent and Wallace (1981) suppose that in the presence of continuing fiscal indiscipline, the central bank may be forced to abandon its price stabilization policy to finance fiscal deficits or public debt. An alternative analysis, the Fiscal Price Theory (Leeper, 1991; Sims, 1994; Woodford, 1995), points out a mechanism explaining the accumulation of high public debt and the increase in price. Indeed, in a *« Ricardian regime »*, the government conforms to its intertemporal budget constraint; the central bank, therefore, has a dominant position and can pursue its price stabilization policy. However, in a *« non-Ricardian regime »*, the government would not commit in the future to matching an entirely new public debt with future taxes. Thus, for Woodford (1995), faced with this dominant fiscal policy, the government will return to budgetary balance through price increases, not budgetary surpluses. In other words, the government generates inflation, eroding the actual value of public debt.

As inflation targeting is associated with a loss of seigniorage, this regime forces the government to control its fiscal behavior, thereby limiting inflationary pressures. Early studies highlighting the macroeconomic effects of inflation targeting began in the late 1990s and early 2000s. Most of the studies focusing on developing countries suggest

that inflation targeting reduces inflation and its volatility (Neumann and Von Hagen, 2002; Lin and Ye, 2009), interest, and exchange rate volatility (Vega and Winkelried, 2005; Lin, 2010), output volatility (Fratzscher et al., 2020), and fosters independence and credibility of the central bank (Pétursson et al., 2004).

In addition to price stability, which is the primary objective of most central banks, inflation targeting is more generally seen as a monetary policy framework for improving macroeconomic performance in developing countries, for example by promoting fiscal discipline or institutional quality. Indeed, by reducing seigneurial revenues, inflation-targeting leads the government to increase its primary surpluses, by intensifying its efforts to mobilize tax revenues or reducing resource wastage (Lucotte, 2012; Minea and Tapsoba, 2014; Combes et al., 2018), by promoting fiscal and financial reforms (Bernanke et al., 1999; Brash et al., 2000), or by fighting corruption or tax evasion (Minea et al., 2020). These results have important implications. On the one hand, domestic resource mobilization allows these countries to develop, encourage public authorities to be more responsive, account for their decisions, and create conditions for economic growth. On the other hand, the non-recourse to the monetization of fiscal deficits reduces the economy's probability of leading to hyperinflationary episodes, insofar as these are often linked to a massive debt monetization (Reinhart and Rogoff, 2011).[1]

This paper draws on the literature on inflation targeting and asks the following question : does inflation targeting increase private domestic investment in developing countries ? The literature dealing with the macroeconomic effects of inflation targeting has analyzed the impact of this monetary framework on foreign direct investment (Tapsoba, 2012) or public investment (Apeti et al., 2020). However, to the best of my knowledge, no study has assessed the effects of inflation targeting on private domestic investment. I argue that inflation targeting, by lending credibility to monetary policy, promoting price stability or even reducing interest rate volatility, should create a more stable macroeconomic environment and improve the transparency and predictability of the economy. This should therefore influence firms and households in their investment

[1] In a related matter, Balima et al. (2017) show that adopting inflation targeting improves government credit ratings and reduces government bond yield spreads.

decisions. Moreover, by reducing public spending (Apeti et al., 2020), inflation targeting could also reduce the crowding-out effect on private sector activity.

This paper contributes to the analysis of the externalities of inflation targeting by empirically identifying and quantifying the mechanisms through which inflation targeting affects domestic investment, using a large dataset of 62 developing countries over the period 1990-2017.

First, I address the potential self-selection bias due to the adoption of inflation targeting by drawing upon various propensity score matching methods (Rosenbaum and Rubin, 1983). The results suggest that adopting inflation targeting leads to a significant increase in private investment from 1.17 to 2.69 percentage points in targeting countries compared to non-targeting countries.

Second, the strength of the results is confirmed by a rich robustness analysis, including changes in sample size, additional control variables, the use of another definition of the treatment variable, and a change in my estimation method. The estimated coefficients remain economically meaningful, with a magnitude comparable to those of the baseline model.

Third, I highlight the heterogeneity of the effect of inflation targeting in the presence of various economic factors. My results suggest that inflation targeting seems to be effective only in countries with good institutions and more effective in the presence of fiscal rules. I also find that inflation targeting seems less effective in countries that are very open to international trade or countries with high unemployment rates. Finally, the regime is more effective in countries with tight fiscal policies characterized by low debt levels, and is all the more advantageous for investment as it characterizes countries richly endowed with natural resources or exposed to "Dutch disease."

The remainder of the paper is organized as follows. Section 2 presents some stylized facts that characterize the relationship between inflation targeting and private domestic investment in developing countries over the period 1990-2017. Section 3 presents my hypotheses. Section 4 describes the dataset and methodology. The main findings are

presented in Section 5. Section 6 deals with the robustness of the results and their heterogeneity. A final section concludes.

2 Stylized facts

This section presents some stylized facts that characterize the relationship between inflation targeting (IT) and the average evolution of the private investment rate over the period 1990-2017. The statistics cover 62 developing countries, with 23 targeting (ITers) and 39 non-targeting countries (non-ITers).

Figure 1 below shows, on average, a higher domestic investment rate in inflation target countries compared to non-ITers (16.02% versus 12.24%), with a difference of around four percentage points. Figure 2 presents the average evolution of the investment rate

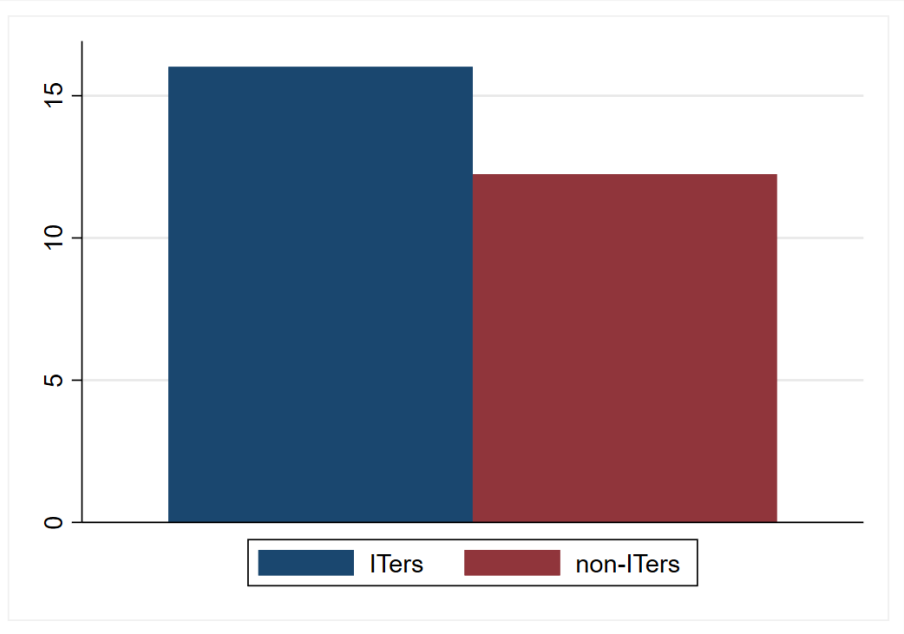

Figure 1 – **Average private investment rates (%GDP) in ITers and non-ITers**

for ITers and non-ITers, before and after adopting IT. I follow the methodology used by Mishkin and Schmidt-Hebbel (2007) and Minea and Tapsoba (2014) to construct investment rates before and after IT adoption for non-ITers. Figure 2 shows an increase in the

investment rate in both groups of countries after IT adoption. However, this increase was substantial in ITers compared to non-ITers. Indeed, in ITers, the investment rate increases from an average of 12.90% before IT adoption to 15.76% after IT adoption, while this rate increases from 12.43 to 13.30% among non-ITers. Thus, the evolution of the investment rate after the adoption of IT is about three times greater in ITers compared to non-ITers (+2.86% versus +0.90%). Moreover, the difference in the investment rate between the two groups of countries before IT adoption is around 0.41 percentage points and is not significant, as confirmed by the difference test performed in Table B1. Thus, Figure 2 highlights a striking fact. Although both groups experienced increased investment after adopting IT, the gap between targeting and non-targeting countries widened, with a significant difference of around 2.5 percentage points.

These stylized facts correlate IT and private investment in developing countries. However, these observations don't provide any conclusions about the causal effect of the treatment.

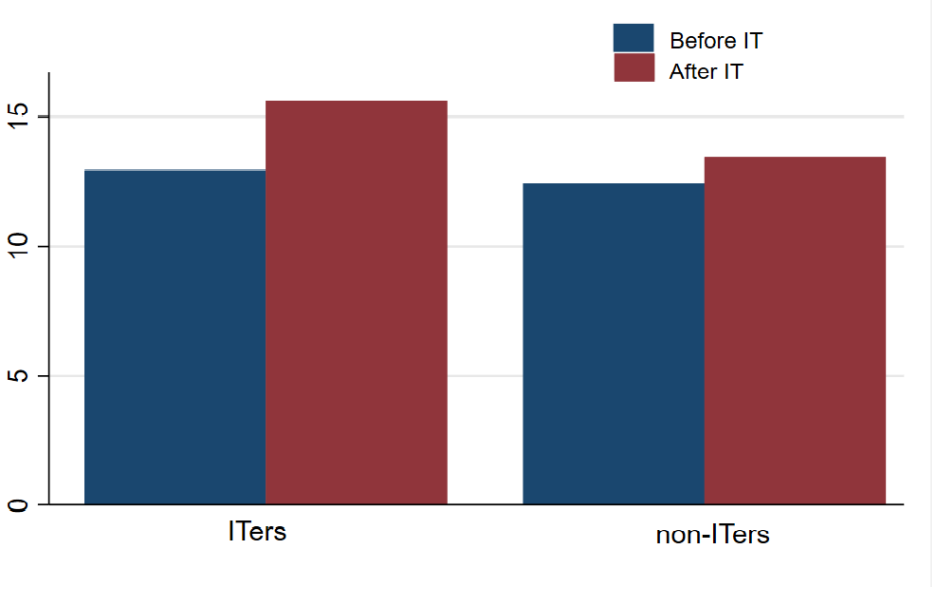

Figure 2 – **Average private investment rates (%GDP) before and after adoption of IT (1990-2017)**

3 Testable hypotheses

In light of the literature, the potential effect of IT on private domestic investment can transit through at least five channels.

Inflation and volatility in exchange rates or output reduce the predictability of economic conditions, thus creating uncertainty about investment returns. By raising the cost of capital, inflation erodes household purchasing power. By reducing inflation and its volatility, interest and exchange rate volatility, output volatility, and by promoting greater financial stability[2], IT should protect household purchasing power, promote economic stability and transparency, and then reduce uncertainty. This should therefore create a conducive environment for private-sector investment. Furthermore, a stable real exchange rate promotes macroeconomic stability and helps reduce foreign capital flight, which can have a spillover effect on domestic investment.

By improving the quality of institutions and reducing tax evasion or illicit financial flows (Minea et al., 2020), IT should improve the allocation of resources within the economy and create incentives to invest, as a transparent institutional environment characterized by a low level of corruption and sound regulation promotes private initiative.

By creating a more stable macroeconomic environment and improving the transparency and predictability of economic conditions, IT also enhances the attractiveness of foreign direct investment (FDI) in developing countries (Tapsoba, 2012). However, FDI to developing countries can have two contradictory effects on private domestic investment: a crowding-in effect or a crowding out effect. The first effect could be explained by technology transfers, knowledge transfers, or joint ventures between foreign and national firms. As the results of empirical studies between FDI and private domestic investment in developing countries are ambiguous (Fry, 1993; Borensztein et al., 1998; Bosworth et al., 1999), I cannot predict anything about this channel.

To control inflation, the central bank can implement a restrictive monetary policy

[2]Especially for inflation targeting countries having implemented prudential reforms (Owoundi et al., 2021).

that consists of raising the interest rate. Higher interest rates penalize households and firms in need of financing, generally leading to lower investment (De Mendonça and Lima, 2011). However, achieving a relatively low inflation target under IT may crowd out interest rate hikes to converge inflation toward the target. Thus, by keeping interest rates low (especially in the short term), IT should favor investment decisions in developing countries. Moreover, by promoting the stability of interest rates, IT also makes the country less sensitive to shocks on global interest rates, thereby reducing the vulnerability of households and domestic firms.

The effects caused by variations in fiscal variables can also affect private investment. By evaluating the impact of IT on public expenditure in 37 developing countries over the period 1990-2016, Apeti et al. (2020) show that adopting IT reduces public spending, including investment expenditure. This should more indirectly impact private domestic investment. However, the relationship between public expenditure and private investment can be ambiguous. On the one hand, being with private firms in accessing finance, the slowdown in public spending should reduce the crowding-out effect of the public sector on private investment. On the other hand, the opposite effect could also occur. For example, the decline in public spending in sectors such as infrastructure, energy, education, or health can deteriorate business conditions, then negatively affect private investment. Adopting inflation targeting also encourages governments in emerging economies to improve tax revenue collection to recoup lost seigniorage income (Lucotte, 2012). However, taxation is not without distortion. A higher tax burden (e.g., higher payroll taxes) can increase production costs and thus reduce the profitability of private investments. Finally, by promoting fiscal discipline and government credit ratings (Balima et al., 2017), IT can also significantly contribute to reducing long-term public debt and promote access to credit for firms, especially those more likely to be under credit constraints.

To summarize, IT would create incentives to invest by promoting macroeconomic stability, economic transparency, and predictability, reducing the level and volatility of interest rates, improving the quality of institutions, or promoting fiscal discipline.

However, IT would disadvantage private domestic investment decisions through tax revenue collection, especially in the presence of a high tax burden borne by firms. Finally, I cannot predict anything about the effect of IT on private investment through FDI and public spending. The stylized facts presented in Section 3 and empirical analysis highlighting the effects of IT lead me to think that IT would, on average, encourage investment decisions in developing countries.

4 Data and Methodology

4.1 Data

The dataset consists of 62 developing countries, with 23 ITers (treatment group) and 39 non-ITers (control group), examined from 1990 to 2017. The choice of this time horizon was conditioned by data availability insofar as a large number of the countries in the sample did not have sufficient observations before the year 1990.

The main variables are IT and private domestic investment. The dependent variable is measured as the share of private-sector gross fixed capital formation to GDP, and is drawn from the IMF's Investment and Capital Stock database. IT is captured by a binary variable equal to 1 if country i in year t was targeting inflation, and zero otherwise. For the control group to be a good counterfactual for the treatment group, I exclude from the control group countries whose real GDP per capita is lower than that of the poorest treated country in the sample, and countries with a smaller population than the smallest treated country in the sample, as in Lin and Ye (2009).

Unlike previous studies (Lin and Ye, 2007; Lin and Ye, 2009; Lin, 2010; Tapsoba, 2012; Lucotte, 2012; Minea and Tapsoba, 2014) whose samples range from 1980 to 2009, I use a more recent database covering 1990-2017. Likewise, while countries like Paraguay, Dominican Republic, Russia, Kazakhstan, Uruguay, and Ukraine that adopted IT between 2007 and 2017 are treated as controls in Tapsoba (2012) and Lucotte (2012), I consider them in this study as treated countries by referring to Jahan and Sarwat

(2012) and Ciżkowicz-Pękała et al. (2019). The treated group also includes Uganda[3], which has adopted IT since 2011 but is not included in Tapsoba (2012) and Lucotte (2012).

I distinguish two majors starting dates : soft or informal IT (Soft IT) and full-fledged or formal IT (Hard IT). This distinction makes it possible to consider the central bank's reaction following an inflation deviation from the target. Indeed, in a soft IT, the central bank's reaction following an inflation deviation from the target is slower than its reaction under a full IT. Thus, soft IT refers to the date declared by the central bank itself, while full IT relates to the date declared by researchers, considered to be the confirmed date from which the central bank operates under the inflation targeting regime.

The composition of the sample is provided in more detail in Table A1. Table A2 details the definitions and sources of the variables used in the empirical analysis.

4.2 Methodology

I follow the program evaluation methodology, which consists in evaluating the average treatment effect on the treated (ATT), defined as follows:

$$ATT = E[(Y_{i1} - Y_{i0})|T_i = 1] = E[(Y_{i1}|T_i = 1)] - E[(Y_{i0}|T_i = 1)] \quad (1)$$

T_i (treatment) is a dummy variable equal to 1 for a country i that has adopted inflation targeting, and zero otherwise. Y_{i1} captures the private domestic investment rate when the country adopts IT, and Y_{i0} is the private domestic investment rate that would have been observed if the country had not adopted the policy. The problem is that we cannot observe Y_{i1} and Y_{i0} simultaneously. We are therefore faced with a counterfactual problem. One solution would be to compare the average levels of private investment between ITers and non-ITers. However, this approach assumes that the treatment assignment is random. This assumption would be ad hoc because most of the countries

[3]Source : Jahan and Sarwat (2012).

that adopted IT were emerging from an exchange rate crisis or episodes of very high inflation. Therefore, IT adoption may be influenced by omitted variables that also affect domestic investment, which would lead to self-selection bias.

Under the Conditional Independence Assumption, [4] I can replace in the equation (1) the unobservable term $E\left[(Y_{i0}|T_i\ 1)\right]$ by the observable term $E\left[(Y_{i0}|T_i\ 0, X_i)\right]$. Then, I get the equation (2).

$$ATT = E[(Y_{i1}|T_i = 1, X_i)] - E[(Y_{i0}|T_i = 0, X_i)] \tag{2}$$

I follow Rosenbaum and Rubin (1983)'s methodology of matching the group of targeted countries to non-targeted countries based on their probability of being treated or propensity scores. I assume the existence of a common support and consider that for each inflation targeting country, there is at least one non-targeting country that is comparable to it, and rewrite the ATT as follows:

$$ATT = E[(Y_{i1}|T_i = 1, p(X_i)] - E[(Y_{i0}|T_i = 0, p(X_i)] \tag{3}$$

Where $p(X_i)$=$P_r(IT_i$=$1|X_i)$ provides, conditional on the set X, the probability of adopting IT.

The existence of a common support is formally essential to match targeting countries with non-targeting countries that are similar in terms of their propensity scores. To ensure that the common support is large enough, I represent the density distribution of the propensity score over the two subsamples. Figure 1 (see Appendix B) makes it possible to verify that the density of the control group completely covers that of the treatment group. Thus, for each value of the score, there is a sufficient number of countries in both groups. In other words, for each inflation targeting country, there is at least one counterfactual (non-targeting country) that is similar to it, which would therefore make the matching possible.

[4] This condition means that conditional upon the vector of covariates X, the treatment assignment must be independent of the outcome.

5 Results

This section presents my main findings. First, I present the estimates of the propensity scores in Subsection 5.1. Then, Subsection 5.2 presents the estimates of the average treatment effect on the treated after matching the corresponding propensity scores.

5.1 The estimation of propensity scores

I estimate the propensity scores from a probit model, using as dependent variable a binary equal to 1 if country i in year t was targeting inflation, and zero otherwise. As in the literature (Lin and Ye, 2009; Tapsoba, 2012; Lucotte, 2012; Minea and Tapsoba, 2014), I control by two categories of variables. The first category includes variables that could explain the likelihood of a developing country adopting IT. By referring to Lin and Ye (2009); Tapsoba (2012); and Lucotte (2012), I include the following precondition variables: the lagged inflation rate, real GDP per capita growth, domestic credit to the private sector (used as a proxy for financial development), and the control of corruption (used to capture the level of institutional quality).

The lagged inflation rate should be negatively correlated with the probability of adopting IT since a country is more likely to adopt an inflation targeting policy when its inflation rate is at a reasonably low level, preferably after successful disinflation (Masson et al., 1997; Minella et al., 2003; Truman, 2003). Relatively low inflation can make the announced targets credible and promote the policy's credibility.

Countries with good macroeconomic performance are more likely to adopt a credible targeting policy, therefore the expected sign of the real GDP per capita growth should be positive. However, a better economic situation can also crowd out the adoption of reforms such as inflation targeting. Indeed, a high growth rate can be seen as the result of successful macroeconomic policies, which does not imply the need to adopt another monetary policy framework (Tapsoba, 2012). Thus, the sign of the real GDP per capita growth could be ambiguous. For example Lin and Ye (2009) and Tapsoba (2012) find a

positive but not significant correlation between the two variables, while this correlation is positive and significant in Minea et al. (2020) and negative in Lucotte (2012).

Financial development positively affects the likelihood of adopting IT by limiting the monopoly of seigniorage by the central bank (Minea et al., 2020). Also, a developed financial system would promote financial inclusion and the mobilization of tax revenues. This should compensate for the loss of seigniorage income and thus allow the government to avoid exerting pressure on the central bank to finance its deficits, an essential condition for ensuring a credible targeting policy. I, therefore, expect a positive correlation between financial development and IT.

Finally, good institutional quality may reflect the ability of the central bank to implement a credible targeting regime, which in turn also sends a signal to financial markets. However, countries with weak institutions could also adopt inflation targeting policy to strengthen their institutional quality, insofar as Minea et al. (2020) highlight a positive effect of IT on the quality of institutions. Thus, the sign of this variable could be ambiguous.

The second category of control variables includes variables that could affect the likelihood of adopting an exchange rate targeting as an alternative framework for monetary policy. Referring to previous studies, I consider for this second category of variables: trade openness and the fixed exchange rate (captured by a dummy variable equal to 1 if a country is classified as having a fixed exchange rate regime, and zero otherwise). Trade openness negatively affects the likelihood of adopting IT due to the incompatibility between the flexible exchange rate regime (an essential precondition for the adoption of IT) and trade openness. Indeed, countries that are too open would be more oriented towards a fixed exchange rate regime to protect themselves from shocks. At the same time, a credible monetary policy framework — notably inflation targeting — should be carried out in a floating exchange rate regime (Brenner and Sokoler, 2010). Since countries that are very open to trade are also more likely to target the exchange rate to guard against exchange rate volatility, trade openness and the fixed exchange rate should be negatively correlated with IT.

Table 1 presents the estimates of the propensity scores from a probit model. The baseline model results using the conservative dates (Hard IT) are reported in column [1] and corroborate most of my hypotheses. The lagged inflation rate, trade openness, and the fixed exchange rate regime reduce the likelihood of a country adopting IT. However, real GDP per capita growth, financial development, and better control of corruption are positively correlated with the adoption of IT. The overall fit of the regression is acceptable with a Pseudo R^2 of 10.97 % for my baseline model.

Table 1 – The estimation of propensity scores

Dependent variable : Hard IT

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
Lagged inflation	-0.0531***	-0.0522***	-0.0509***	-0.0538***	-0.0940***	-0.0526***	-0.0507***	-0.0547***	-0.0549***	-0.0455***	-0.0555***	-0.0549***	-0.0549***	-0.0513***
	(0.0078)	(0.0078)	(0.0080)	(0.0084)	(0.0108)	(0.0078)	(0.0079)	(0.0080)	(0.0089)	(0.0094)	(0.0085)	(0.0082)	(0.0080)	(0.0080)
Real GDP per capita growth	0.0207*	0.0199	0.0201	0.0188	0.0045	0.0196	0.0164	0.0240*	0.0429***	0.0064	0.0400***	0.0115	0.0154	0.0176
	(0.0123)	(0.0125)	(0.0125)	(0.0132)	(0.0142)	(0.0124)	(0.0125)	(0.0125)	(0.0140)	(0.0145)	(0.0136)	(0.0126)	(0.0125)	(0.0128)
Financial development	0.0056***	0.0056***	0.0054***	0.0059***	0.0040**	0.0057***	0.0063***	0.0050***	0.0094***	0.0052***	0.0117***	0.0061***	0.0051***	0.0058***
	(0.0014)	(0.0015)	(0.0015)	(0.0016)	(0.0017)	(0.0015)	(0.0015)	(0.0015)	(0.0018)	(0.0016)	(0.0018)	(0.0015)	(0.0015)	(0.0015)
Control of corruption	0.1081**	0.1216**	0.0990*	0.1709***	0.1187**	0.0971*	0.0835	0.0910*	0.0115	0.2440***	0.0320	0.0931*	0.1227**	0.0581
	(0.0524)	(0.0530)	(0.0524)	(0.0572)	(0.0559)	(0.0526)	(0.0539)	(0.0529)	(0.0596)	(0.0596)	(0.0553)	(0.0534)	(0.0531)	(0.0596)
Trade openness	-0.0039***	-0.0040***	-0.0036***	-0.0043***	-0.0047***	-0.0038***	-0.0045***	-0.0035**	-0.0111***	-0.0058***	-0.0043***	-0.0060***	-0.0035**	-0.0063***
	(0.0014)	(0.0014)	(0.0014)	(0.0015)	(0.0015)	(0.0014)	(0.0014)	(0.0014)	(0.0017)	(0.0015)	(0.0015)	(0.0015)	(0.0014)	(0.0015)
Fixed exchange rate dummy	-0.6306***	-0.6387***	-0.7060***	-0.5968***	-0.6079***	-0.6580***	-0.6725***	-0.5314***	-0.3738*	-0.7306***	-0.4352**	-0.6138***	-0.6278***	-0.5890***
	(0.1806)	(0.1826)	(0.1862)	(0.1942)	(0.1832)	(0.1832)	(0.1795)	(0.1885)	(0.2071)	(0.2063)	(0.2029)	(0.1824)	(0.1815)	(0.1845)
Unemployment rate								0.0194**						
								(0.0080)						
Lagged tax revenues									0.0406***					
									(0.0054)					
Lagged public debt										-0.0103***				
										(0.0021)				
Lagged public investment											-0.1739***			
											(0.0226)			
FDI												0.0443***		
												(0.0099)		
Governors' turnover													-0.4075***	
													(0.1455)	
Government stability														0.2491***
														(0.0664)
Constant	-0.1668	-0.1668	-0.0971	-0.3255	0.3754	-0.1174	-0.1146	-0.3593	-0.7441***	0.3456	0.2657	-0.1447	-0.1270	0.2034
	(0.2332)	(0.2332)	(0.2366)	(0.2509)	(0.2512)	(0.2362)	(0.2352)	(0.2489)	(0.2715)	(0.2790)	(0.2570)	(0.2365)	(0.2344)	(0.2649)
Pseudo R^2	0.1097	0.1097	0.0904	0.1099	0.1653	0.1094	0.1117	0.1141	0.1828	0.1167	0.1797	0.1264	0.1172	0.1213
Observations	1386	1346	1310	1181	1127	1368	1365	1386	1240	1060	1359	1377	1360	1331

Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10

5.2 The results from Matching

Based on their observable characteristics, I refer to the existing literature and draw upon four propensity score matching methods to match ITers with comparable non-ITers.

First, the N-nearest-Neighbors method matches each ITer with the n non-ITers with the most comparable propensity scores possible. I retain n ranging from 1 to 3 nearest neighbors. Second, the radius method (Dehejia and Wahba, 2002) matches ITers with non-ITers located at a certain distance based on propensity scores. I retain the small (R = 0.005), the medium (R = 0.01) and the wide (R = 0.05) radius. Third, the Kernel method (Heckman et al., 1998) matches each ITer with a weighted average of all the non-ITers, the weights being inversely proportional to the gap between the propensity scores of ITers and non-ITers. Four, the Local Linear Regression (Heckman et al., 1998) method matches ITers with non-ITers, such as Kernel Matching, but uses a linear factor in the weighting function.

From the propensity scores of the baseline model reported in column [1] of Table 1, I estimate the effect of IT on private domestic investment by computing ATTs. The results of the baseline model using the conservative dates are reported in column [1] of Table 2. The estimated coefficients are positive and significant, with a magnitude varying between 1.17 (Kernel Matching) and 2.69 (N-nearest-Neighbors Matching) percentage points. Therefore, these results suggest that IT adoption has increased private domestic investment in targeting countries compared to non-targeting countries. Furthermore, since these coefficients represent between 19% and 45% of the standard deviation of the private investment variable (equal to 5.89, see Table B2), these coefficients are economically meaningful.

Table 2 – The effect of IT on private domestic investment in %GDP (using conservative starting dates)

Treatment Variable: Hard IT	N-nearest-Neighbors Matching			Radius Matching			Kernel Matching	Local linear regression
	N=1	N=2	N=3	r=0.005	r=0.01	r=0.05		
Baseline model [1] ATT	2.6930***	2.3695***	2.3199***	2.2149***	2.2602***	2.2317***	1.1725**	2.0514***
	(0.7418)	(0.6230)	(0.5574)	(0.4727)	(0.4344)	(0.4211)	(0.4838)	(0.4138)
Treated observations	249	249	249	249	249	249	249	249
Control observations	1111	1111	1111	1111	1111	1111	1111	1111
Total observations	1360	1360	1360	1360	1360	1360	1360	1360
Robustness check								
[2] Excluding year 1990	2.3498***	2.4478***	2.4845***	2.1483***	2.0585***	2.2007***	2.1747***	2.0350***
	(0.7169)	(0.6546)	(0.5852)	(0.4592)	(0.4600)	(0.4198)	(0.4146)	(0.3929)
[3] Excluding hyperinflation episodes	2.2198***	2.4332***	2.4487***	2.0627***	1.9772***	2.1871***	2.1623***	2.0329***
	(0.7064)	(0.6314)	(0.6056)	(0.4656)	(0.4249)	(0.4047)	(0.4024)	(0.3864)
[4] Excluding financial crises	1.6608**	1.8617***	1.9262***	2.1234***	2.0793***	2.2010***	2.2083***	2.0363***
	(0.7771)	(0.6456)	(0.6050)	(0.4761)	(0.4859)	(0.4425)	(0.4483)	(0.4344)
[5] Excluding monetary union,dollarization, de facto peg, currency- board	2.3009***	2.1188***	2.1714***	2.0774***	2.1424***	2.4304***	2.4367***	2.4872***
	(0.7278)	(0.6733)	(0.6602)	(0.5177)	(0.5261)	(0.4419)	(0.4433)	(0.4476)
[6] Including unemployment rate	1.7894***	2.3785***	2.0966***	2.2159***	2.1679***	2.3039***	2.2999***	2.0665***
	(0.6920)	(0.6162)	(0.5865)	(0.4974)	(0.4750)	(0.4109)	(0.3885)	(0.3963)
[7] Including tax revenues	2.4737***	2.4306***	2.5358***	2.2310***	2.1152***	2.1376***	2.1641***	2.1969***
	(0.7728)	(0.6957)	(0.6861)	(0.5699)	(0.5258)	(0.4765)	(0.4501)	(0.4489)
[8] Including public debt	1.5823**	1.4725**	1.6528***	1.4531***	1.3092***	1.4319***	1.4461***	1.2875***
	(0.7309)	(0.6400)	(0.5815)	(0.4772)	(0.4285)	(0.4049)	(0.4340)	(0.4493)
[9] Including public investment	2.6642***	2.1956***	2.3129***	2.1052***	2.2663***	2.6245***	2.6203***	2.6652***
	(0.6913)	(0.5999)	(0.5833)	(0.4812)	(0.4395)	(0.4167)	(0.4300)	(0.4370)
[10] Including FDI	2.3708***	2.1538***	2.1558***	1.6611***	1.5887***	1.8555***	1.8152***	1.7431***
	(0.7766)	(0.6976)	(0.6396)	(0.5007)	(0.4720)	(0.4399)	(0.4491)	(0.4635)
[11] Including Governors' turnovover	2.1525***	2.4479***	2.3306***	1.9879***	2.1455***	2.1800***	2.1976***	2.0790***
	(0.6798)	(0.6493)	(0.5927)	(0.4579)	(0.4654)	(0.4548)	(0.4215)	(0.4340)
[12] Including government stability	1.9976***	1.7562***	1.8062***	1.9999***	1.8865***	1.9398***	1.9322***	1.8493***
	(0.6730)	(0.6471)	(0.5920)	(0.4643)	(0.4642)	(0.4111)	(0.4080)	(0.4166)
[13] Excluding new ITers	2.7571***	2.4119***	2.5023***	2.0013***	2.0538***	2.1835***	2.1783***	2.0475***
	(0.7155)	(0.6462)	(0.5997)	(0.4847)	(0.4746)	(0.4085)	(0.4385)	(0.4248)
[14] Excluding CEECs	2.4107***	2.4559***	2.4140***	2.5537***	2.2165***	2.4413***	2.3980***	2.3078***
	(0.7505)	(0.6929)	(0.6307)	(0.4912)	(0.4989)	(0.4611)	(0.4508)	(0.4366)
Quality of the matching								
Pseudo R^2	0.008	0.004	0.004	0.003	0.002	0.002	0.001	0.008
Rosenbaum bounds sensitivity tests	1.9	1.8	1.9	2.2	2.1	2.2	2.1	2.1
Standardized bias (p-value)	0.528	0.826	0.841	0.922	0.986	0.986	0.993	0.528

Bootstrapped standard errors based on 500 replications reported in brackets. *** p<0.01, ** p<0.05, * p<0.1

6 Sensitivity analysis

First, I test the robustness of the main results in Subsection 6.1. Next, I test potential heterogeneities of the effect of IT on private domestic investment in Sub-section 6.2.

6.1 Robustness

6.1.1 Alternative samples and control by additional variables

In columns [2]-[13] of Table 1, I test the robustness of the propensity scores of the baseline model (column [1]) using alternative specifications of the propensity scores.

First, I estimate new propensity scores using different subsamples (columns [2]-[7]). In column [2] (Table 1), I ignore the year 1990, which marks the start of the adoption of IT. Next, since 16 countries in the sample experienced at least one episode of hyperinflation from 1990-2017, such extreme values could bias the estimations. Consequently, in column [3] (Table 1), I exclude from the sample any episode of hyperinflation, defined as an annual inflation rate equal to or higher than 40% (Lin and Ye, 2009). For the same reasons, in column [4], I ignore years marked by financial crises. In column [5], I exclude from the sample countries with a fixed de facto exchange rate or currency boards, countries belonging to a monetary union or dollarized countries, insofar as these monetary regimes are not compatible with the adoption of an inflation targeting policy. In column [6], I exclude new ITers from treated countries, with reference to Apeti et al. (2020). Indeed, countries that have recently adopted IT are unlikely to have a sound fiscal policy that can enhance the credibility and effectiveness of the targeting policy. Therefore, excluding these countries from the sample allows me to avoid a possible bias in my results, due to the potential absence of a situation of fiscal dominance among the new ITers. Between 1990 and 2017, Central and Eastern European Countries (CEECs) implemented a wave of reforms, including financial openness, that have significantly reduced the gap in their economic performance with the EU average. In addition, these countries have experienced massive FDI inflows, which could have a significant effect on domestic investment. Therefore, in column [7], I exclude these countries from the sample.

The new propensity scores obtained are globally comparable to those of the baseline

model (column [1], Table 1), even if the sign of the real GDP per capita growth is sometimes ambiguous. From the new scores obtained in columns [2]-[7] of Table 1, I compute the new ATTs that I report in columns [2]-[5] and [13]-[14] of Table 2. The new results obtained are comparable to the ATTS of my baseline model reported in column [1] of Table 2.

Secondly, I augment my baseline equation estimated from a probit model by controlling by several additional variables likely to be positively or negatively correlated both with IT and the outcome variable (columns [8]-[14], Table 1). These variables are respectively: the unemployment rate, the lagged tax revenue, the lagged public debt, the lagged public investment, foreign direct investment, the independence of the central bank (proxied by the variable "Governors' turnover", which is a dummy equal to 1 if the change of central bank governor occurs informally before the end of his mandate, and zero otherwise), and government stability. These variables are not introduced ad-hoc since each of them has an economic justification.

The unemployment rate influences the conduct of inflation targeting policy due to the problem of time inconsistency. Apeti et al. (2020) explain that in the presence of a high unemployment rate, the central bank will not focus exclusively on price stability. It can then adopt an accommodative policy by considering that it cannot ignore the labor market situation, which can affect the probability of adopting IT. However, one can consider that countries with high unemployment rates could also adopt IT in the hope of improving the labor market situation, given the beneficial externalities of this monetary policy framework. Thus, the effect of the unemployment rate on the probability of adopting IT could be ambiguous.

Referring to the Unpleasant Monetarist Arithmetic theory, one can consider that good fiscal discipline reduces the likelihood of the government exerting pressure on the central bank to finance its deficits, thereby increasing the probability of adopting IT. Therefore, tax revenues should be positively correlated with IT, while public debt and public investment signs should be negative. However, given the positive effect of IT on fiscal discipline, it is also plausible to think that poor fiscal discipline can also encourage the central bank to adopt IT to promote fiscal discipline. The expected effect of fiscal discipline on the likelihood of adopting IT could therefore be ambiguous.

FDI could stimulate tax revenue collection by broadening the tax base through the entry of new firms. By positively affecting fiscal space, FDI should thus reduce the likelihood of the government exerting pressure on the central bank to finance its deficits. I then expect a positive effect of FDI on the probability of adopting IT.

Frequent changes of central bank governors may reflect weak independence of monetary institutions vis-à-vis the government and, therefore, a low central bank's capacity to implement a credible targeting policy. Thus, weak central bank independence should reduce the likelihood of adopting IT.

Finally, good government stability characterized by a low level of political risk reflects good governance, strengthens investor confidence in the country, and reduces sovereign bond yield spreads. Government stability should improve sovereign debt ratings and promote access to financial markets for developing countries (Sawadogo, 2020). In doing so, government stability should increase the likelihood of adopting IT.

The new estimated scores reported in columns [8]-[14] remain qualitatively comparable to those obtained previously and similar to the results obtained for my baseline model (column [1], Table 1). Additionally, the results corroborate most of my assumptions. The unemployment rate, tax revenues, FDI, and government stability are positively correlated with the probability of adopting IT. However, public debt, public investment, and frequent changes of central bank governors (weak central bank independence) are negatively correlated with the probability of adopting IT.

From the estimated propensity scores in columns [8]-[14] of Table 1, I recompute the ATTs reported in columns [6]-[12] of Table 2. The new coefficients remain qualitatively and quantitatively comparable to the baseline model results (column [1], Table 2).

6.1.2 Alternative definition of the treatment variable (Soft IT)

I analyze the sensitivity of my various baseline results in another way, using an alternative definition of the treatment variable. I refer to the default starting dates or informal IT (Soft IT). Indeed, as mentioned previously, under a Soft IT regime, the central bank's reaction to an inflation deviation from the target is slower than its reaction under a Hard IT regime. Soft IT, therefore, refers to the date declared by the central bank itself.

In contrast, Hard IT refers to the date declared by academics, considered the effective date from which the central bank operates under the inflation targeting regime. The results of the propensity scores and ATTs are reported in Tables C1 and C2. The new propensity scores are qualitatively comparable to those obtained in Table 1 when I refer to conservative starting dates (Hard IT). Likewise, the new ATTs computed from the new propensity scores are positive and significant, with an amplitude varying between 1.63 (Local linear regression) and 2.58 (N-nearest-Neighbors Matching) percentage points for the baseline model (column [1], Table C2).

I reproduce the same tests described in Subsection 6.1 using the new definition of the treatment variable. The results are reported in columns [2]-[14] of Tables C1 and C2. In column [8] of Table C2, 7 out of 8 ATTs are positive, significant, and qualitatively comparable to those obtained by referring to Hard IT. In column [10] of Table C2, 5 out of 8 ATTs are positive and significant, with a magnitude varying between 1.49 (Kernel Matching) and 0.89 (Radius Matching) percentage points. Overall, I can conclude that my main findings are robust to the alternative definition of the treatment variable.

6.1.3 Alternative estimation method

I perform another robustness test by changing my identification strategy. I use the Inverse Probability Weighting (IPW) estimator. Indeed, although the estimation of ATTs from propensity scores makes it possible to correct the potential self-selection bias in the policy adoption, this estimator may have limits, especially in the presence of a severe lack of data. The IPW estimator uses propensity scores by giving more weight to observations that are similar to each other in their observable characteristics, allowing a good pairing even in the presence of missing data. The results of the estimates are reported in Tables C3 and C4, using the two definitions of the treatment variable (Hard IT and Soft IT) respectively. My results are robust to the use of this estimation method, insofar as the new ATTs are qualitatively comparable to those of the baseline model obtained from propensity scores matching.

6.1.4 Assessing the quality of the matching method

The matching from propensity scores should eliminate significant differences in observables between inflation targeting and non-targeting countries. First, I test the quality of the matching by referring to the Pseudo R^2, as suggested by Sianesi (2004). Caliendo and Kopeinig (2008) hold that a good quality adjustment must be associated with « fairly low » Pseudo-R^2. All of the pseudo-R^2 in my main estimates are less than 0.01 (see Table 2), suggesting that the matching provided balanced scores. Consequently, my estimates are robust with regard to the hypothesis of common support.

Secondly, I verify the Conditional Independence Assumption (CIA), both concerning observables and non-observables. Regarding observables (see Rosenbaum, 2002), the standardized bias test which evaluates the mean difference between the characteristics of ITers and non-ITers supports the absence of statistical differences between the two groups of countries after matching. Regarding unobservables, I test to what extent the existence of unobserved that simultaneously affect the assignment to treatment and the outcome variable could bias my results. The cutting points from Rosenbaum sensitivity tests at 5% significance hover between 1.8 and 2.2 (see Table 2), comparable with existing studies for which the cutting point tends to range between 1.1 and 2.2 (see e.g. Aakvik, 2001 or Rosenbaum, 2002 page 188). Thus, I can conclude that my different estimates obtained are also robust with respect to the CIA.

6.2 Heterogeneity

This section explores heterogeneity in the effect of IT on private domestic investment to learn more about the underlying mechanism. Subsection 6.2.1 assesses the effectiveness of the inflation targeting regime by looking at deviations of the effective inflation rates from the targets announced by central banks. Subsection 6.2.2 focuses on the role of institutional quality. In subsection 6.2.3, I analyze the effectiveness of the monetary regime in the presence of fiscal institutions, notably fiscal rules. Finally, some interactions are explored in the last subsection.

6.2.1 Do the deviations from the targets matter ?

Credibility, usually proxied by deviations from inflation targets, is a crucial factor in the success of the targeting regime. Indeed, by reaching or approaching the targets, central banks influence public expectations, thus creating a decision-making framework that increases the credibility of the monetary policy. This credibility would imply a lower effort by the central bank to achieve the inflation target, thus promoting the effectiveness of the policy. Referring to Ogrokhina and Rodriguez (2018), I calculate deviations from the target as the difference between realized inflation and the inflation target for each target country over the period 1990-2017.[5] I report an average deviation of 0.8 percentage points among the targeting countries, and a median of zero.

As can be seen in Figure 3, which plots the kernel density of deviations, most target countries do not deviate from their announced targets, resulting in a distribution of deviations concentrated around zero. The long tail is explained by a small number of countries with large deviations. For example, in 2015, Russia recorded the most significant deviation from the target, with a gap of 11.5 percentage points. This is due to the country's gradual transition to full inflation targeting, officially introduced in 2015. Russia is followed by Kazakhstan, which recorded a deviation from the target of about 10.5 percentage points in 2015, when the targeting regime was adopted.

To capture potential heterogeneity in the regime's effectiveness concerning these deviations, I interact my binary variable with the squared deviation of inflation from the target, as these deviations can also be negative. The results of the estimations are reported in Table 3. Since no average effect is significant, albeit positive, I conclude that deviations from the target do not significantly affect the regime's effectiveness. To say it differently, the inflation targeting regime significantly improves private domestic investment, both for countries that are close to the announced targets and for countries that deviate from them. Moreover, it should be noted that this result is because very few countries in the sample deviate from the announced targets, as mentioned above, so that overall in my sample I can consider that I have countries with a credible targeting regime.

[5]Data on inflation targets are extracted from Ciżkowicz-Pękała et al. (2019) and the central bank publications of each country.

Figure 3 – Distribution of deviations of realized inflation from the target

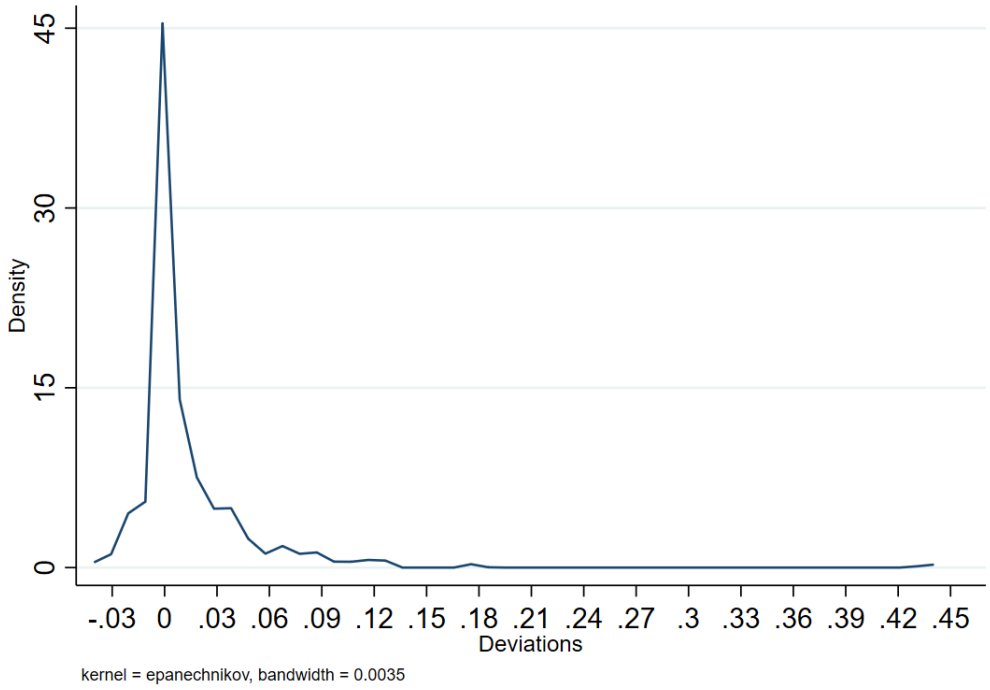

Table 3 – Heterogeneity: Do the deviations from the targets matter ?

	N-nearest-Neighbors Matching			Radius Matching			Kernel Matching	Local linear regression
	N=1	N=2	N=3	r=0.005	r=0.01	r=0.05		
IT * Sq.dev.	1.7463	1.3900	1.6931	0.8312	1.2071	1.5279	1.5006	1.1044
	(6.2866)	(4.9468)	(4.5692)	(3.5993)	(3.3528)	(2.8761)	(2.9768)	(2.8698)
Observations	1362	1362	1362	1362	1362	1362	1362	1362

Bootstrapped standard errors based on 500 replications reported in brackets. *** p<0.01, ** p<0.05, * p<0.1

6.2.2 The role of institutions

Institutions have an essential role in the conduct and effectiveness of economic policies. To the extent that central bank independence is a necessary condition for the success of the targeting regime, one can argue that this policy is more likely to be effective in countries with good institutions or have implemented sound institutional reforms.

I re-estimate my main equation to test this hypothesis, distinguishing between different political regimes. In a first step, I distinguish between weak and strong democracies based on the median value of the Polity 5 democracy score. The results are reported in columns [1] and [2] of Table 4 (Panel A). Although the average effects for weak democracies are positive, they are not significant.

Table 4 – Heterogeneity: the role of institutions

		N-nearest-Neighbors Matching			Radius Matching			Kernel Matching	Local linear regression
Panel A: Hard IT		N=1	N=2	N=3	r=0.005	r=0.01	r=0.05		
[1] **Good democratic governance** :	ATT	1.9932**	1.9523**	1.7946**	1.6328***	1.4838**	1.6631***	1.6862***	1.7000***
		(0.8944)	(0.8251)	(0.8144)	(0.6332)	(0.6187)	(0.6059)	(0.5899)	(0.6121)
	Observations	702	702	702	702	702	702	702	702
[2] **Poor democratic governance** :	ATT	2.4702	2.3717	1.9618	3.4650	1.4362	0.6234	0.7226	1.8279
		(3.2598)	(2.9291)	(2.7119)	(2.4676)	(2.4717)	(2.2982)	(2.3726)	(2.2022)
	Observations	571	571	571	571	571	571	571	571
[3] **Autocracies** :		2.9456	1.7288	2.5405	3.3627	2.8328	1.3258	1.2009	1.5106
		(3.0696)	(2.9419)	(2.5964)	(2.2549)	(2.1927)	(2.0975)	(2.0591)	(2.0726)
	Observations	633	633	633	633	633	633	633	633
[4] **Full Democracies** :	ATT	1.2721	1.5585**	1.6378**	1.7264***	1.6036***	1.4892**	1.5098**	1.7311***
		(0.7995)	(0.7868)	(0.7328)	(0.5978)	(0.5482)	(0.5943)	(0.5950)	(0.5366)
	Observations	730	730	730	730	730	730	730	730
Panel B: Soft IT									
[1] **Good democratic governance** :	ATT	1.8064**	1.4165*	1.9660***	2.0212***	1.7040***	1.5648***	1.5988***	1.5585***
		(0.7856)	(0.7556)	(0.7006)	(0.6451)	(0.5792)	(0.5636)	(0.5747)	(0.5592)
	Observations	702	702	702	702	702	702	702	702
[2] **Poor democratic governance** :	ATT	0.9912	1.1381	0.4793	3.1563	1.2400	0.3539	0.1526	0.3083
		(2.9737)	(2.8235)	(2.4404)	(2.6001)	(2.5567)	(2.2401)	(2.2585)	(2.1144)
	Observations	571	571	571	571	571	571	571	571
[3] **Autocracies** :	ATT	0.0193	1.7561	2.2760	3.3743	3.1978	1.1326	1.0636	1.4945
		(3.2105)	(2.7183)	(2.5710)	(2.3583)	(2.0281)	(2.1276)	(2.2559)	(1.9615)
	Observations	633	633	633	633	633	633	633	633
[4] **Full Democracies** :	ATT	1.5984*	1.5682**	1.5802**	1.9259***	2.0729***	1.6592***	1.7259***	1.3188**
		(0.8362)	(0.6695)	(0.7365)	(0.6043)	(0.5715)	(0.5451)	(0.6305)	(0.5517)
	Observations	730	730	730	730	730	730	730	730

Bootstrapped standard errors based on 150 replications reported in brackets. *** p<0.01, ** p<0.05, * p<0.1

In columns [3] and [4] of Panel A, I distinguish between two types of political regimes using the democracy score from the OWiD (Our World in Data) database : autocracies (including semi-democracies) and full democracies. The results obtained are qualitatively comparable to those of the first two columns. Finally, as a robustness check, I replicate the tests performed in Panel A using the alternative definition of the treatment variable (Soft IT). The results reported in Panel B remain robust, and significant for countries with good institutions.

One might think that this effect could be biased by an imbalance of observations between the two samples. However, as the observations reported for the different sub-groups of countries seem comparable, I can rule out this hypothesis. Similarly, over the period 1990-2017, I identified six countries with weak institutions among the target countries, representing a quarter of the treated countries in the sample. Thus, I can conclude that institutions have an essential role in the effectiveness of the targeting regime.

6.2.3 Combined inflation targeting with fiscal rules

In the spirit of Combes et al. (2018) who highlight some complementarity between inflation targeting and fiscal rules, I assess the effectiveness of the monetary regime in the presence of these fiscal institutions. In column [1] of Table 5, I cross my treatment variable with another binary variable (FR) equal to 1 if a fiscal rule is effective, for a given country, in a given year, and zero otherwise. The positive and economically meaningful average effects suggest that inflation targeting is most effective in increasing domestic investment when implemented jointly with fiscal rules, thus corroborating the findings of Combes et al. (2018). This result is explained by the positive effect of fiscal rules on fiscal discipline, limiting the monetary financing of fiscal deficits and promoting the effectiveness of the monetary regime.

In columns [2]-[4], I distinguish between Debt (DR), Balanced Budget (BBR) and Expenditure (ER) Rules, respectively. The results in columns [2] and [3] are consistent with those in column [1], suggesting that debt and balanced budget rules appear to be complementary to inflation targeting. However, the joint effect of IT and ER is not significant(column [4]). This result can be explained by an inverse effect of ER on domestic investment. Indeed, ER may induce the government to reduce public spending, which would penalise private investment in the presence of a complementary relationship between public and public investment.

Table 5 – Heterogeneity: combined inflation targeting with fiscal rules

	N-nearest-Neighbors Matching			Radius Matching			Kernel Matching	Local linear regression
Panel A: Hard IT	N=1	N=2	N=3	r=0.005	r=0.01	r=0.05		
[1] IT * FR : ATT	2.2710***	2.2477***	2.3205***	2.0535***	2.1655***	2.1535***	2.1734***	2.3491***
	(0.8439)	(0.8662)	(0.8257)	(0.6213)	(0.5214)	(0.4844)	(0.4929)	(0.5201)
[2] IT * DR : ATT	3.3442***	3.5735***	3.2132***	3.3638***	3.3660***	3.4076***	3.3752***	3.5447***
	(1.1980)	(1.0016)	(0.9533)	(0.6871)	(0.7609)	(0.6732)	(0.6927)	(0.6580)
[3] IT * BBR : ATT	2.5954**	2.6134**	2.5755***	2.1666***	2.3292***	2.5001***	2.5170***	2.5835***
	(1.0290)	(1.0304)	(0.8791)	(0.6829)	(0.5760)	(0.7106)	(0.6944)	(0.5876)
[4] IT * ER : ATT	1.5425	1.1273	0.7774	0.8221	0.8142	0.6224	0.6322	0.8626
	(1.1693)	(0.9281)	(0.8604)	(0.7327)	(0.6471)	(0.4984)	(0.5766)	(0.5966)
Panel B: Soft IT								
[1] IT * FR : ATT	2.5043***	2.3499***	2.2729***	2.1688***	2.2033***	2.1115***	2.1349***	2.3088***
	(0.7111)	(0.7359)	(0.7273)	(0.5715)	(0.4861)	(0.4448)	(0.5500)	(0.4109)
[2] IT * DR : ATT	3.3442***	3.5735***	3.2132**	3.3638***	3.3660***	3.4076***	3.3752***	3.5447***
	(1.2762)	(1.1402)	(1.2526)	(0.8082)	(0.7454)	(0.5846)	(0.6831)	(0.8141)
[3] IT * BBR : ATT	1.3818	2.1072*	2.2713***	2.0773***	2.1192***	2.4564***	2.4864***	2.5627***
	(1.0468)	(1.0765)	(0.8322)	(0.6368)	(0.6392)	(0.5702)	(0.6004)	(0.5592)
[4] IT * ER : ATT	0.8135	0.9644	0.9841	0.1115	0.2064	0.5597	0.5892	0.8403
	(1.1679)	(1.0889)	(0.9505)	(0.4982)	(0.6592)	(0.5535)	(0.5409)	(0.5279)

Bootstrapped standard errors based on 500 replications reported in brackets. *** p<0.01, ** p<0.05, * p<0.1

6.2.4 Exploring conditional effects

By referring to Lin and Ye (2009), I explore conditional effects using a Control function regression approach. In the first column of Table 6, I estimate the effect of IT on the outcome variable using OLS estimators. The results in column [1] suggest that adopting IT increases domestic investment by an average of 3.25 percentage points. In column [2], I include the estimated propensity score (Pscore) for my baseline model as a control function. The coefficient of the propensity score is positive and significant, suggesting the presence of a selection bias. The coefficient of the treatment variable remains positive and significant, with a magnitude of approximately 2.12 percentage points.

In columns [3] and [4], I assess the impact of IT on domestic investment in the presence of trade openness and the unemployment rate. The results suggest that the positive effect of IT on domestic investment seems to be attenuated in the presence of high trade openness or high unemployment. Indeed, trade openness is negatively correlated with the probability of adopting IT because of the incompatibility between the flexible exchange rate regime and trade openness (Brenner and Sokoler, 2010). Likewise, when the labor market situation deteriorates, the central bank may adopt an accommodative policy during fiscal stimulus packages, aligning itself with the government's budgetary objectives and focusing less on its inflation-targeting framework, reducing its credibility.

In columns [5] and [6], I explore a potential heterogeneity of the monetary regime in the presence of fiscal discipline. The variables "Debt Dummy 1" and "Debt Dummy 2" respectively capture countries with a debt level below the median and the first quartile of the sample (as a percentage of GDP). The results in column [7] suggest that inflation targeting is most effective in countries with very tight fiscal discipline, with a debt level below or equal to the first quartile of the sample (around 30% of GDP), as opposed to the median (around 43% of GDP).

In column [7], I cross IT with financial crises. As IT fosters the accumulation of external reserves (Rose, 2007; Lin and Ye, 2007; Lin, 2010), it can contribute to narrowing the current account deficit in times of crisis, for example, by ensuring essential imports and thus promoting the resilience of certain production sectors which depend on specific imports (Fouejieu, 2013). According to the results of column [7], no heterogeneity of IT seems to emerge in the presence of financial crises because although the coefficient of the interaction is positive, it is not significant.

Finally, column [8] tests a potential heterogeneity of the effect of IT in the presence of natural resources. The variable "Resource-rich countries" is a binary equal to 1 when the country i is highly endowed with natural resources (share of resources in GDP greater than the sample mean), and zero otherwise. The interactive term is positive and significant, suggesting that the inflation targeting regime is more beneficial for investment as it characterizes countries richly endowed with natural resources. This result is reminiscent of the famous "Dutch disease" that supports the idea that the increase in export earnings from natural resources compromises the development of the manufacturing sector due to the appreciation of the real exchange rate it induces. Indeed, an appreciation of the exchange rate leads to a loss of competitiveness of national products. Domestic firms, therefore, see their activity slow down, which reduces domestic investment, especially in the presence of a more pronounced slowdown of the economy. By stabilizing the real exchange rate, IT would limit the negative externalities of natural resources on domestic investment, especially in countries exposed to "Dutch disease."

Table 6 – Heterogeneity in the treatment effect

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Hard IT	3.2525***	2.1236***	4.4875***	4.3285***	1.4058***	1.6166***	2.0487***	1.3466***
	(0.3807)	(0.4213)	(0.9179)	(0.6525)	(0.4968)	(0.4399)	(0.4400)	(0.4751)
Pscore		6.0636***	5.4435***	7.7622***	7.2853***	7.1178***	6.0347***	5.6069***
		(1.3142)	(1.2985)	(1.3695)	(1.3520)	(1.3375)	(1.3151)	(1.3174)
Trade openness			0.0351***					
			(0.0050)					
Hard IT * Trade openness			-0.0355***					
			(0.0120)					
Unemployment rate				0.0762**				
				(0.0334)				
Hard IT * Unemployment rate				-0.2880***				
				(0.0647)				
Debt Dummy 1					1.1430***			
					(0.3482)			
Hard IT * Debt Dummy 1					-0.3236			
					(0.8149)			
Debt Dummy 2						0.5876		
						(0.4166)		
Hard IT * Debt Dummy 2						1.5522*		
						(0.9139)		
Financial crises							-0.4371	
							(0.4594)	
Hard IT * Financial crises							0.4997	
							(1.4291)	
Resource-rich countries								-0.5928*
								(0.3560)
Hard IT * Resource-rich countries								3.3449***
								(0.9314)
Constant	12.3117***	11.8625***	9.6068***	11.0432***	11.7330***	11.8156***	11.9405***	12.1586***
	(0.1530)	(0.2725)	(0.4165)	(0.3770)	(0.2869)	(0.3456)	(0.2841)	(0.3082)
Observations	1703	1360	1360	1360	1178	1178	1360	1360

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

7 Concluding remarks

Numerous studies analyze the effect of inflation targeting on macroeconomic performance by focusing on macroeconomic stability or fiscal discipline. In this paper, I assess the impact of inflation targeting as a monetary policy framework to increase private sector investment in developing countries.

My data covers a large panel of 62 developing countries from 1990-2017. To address the self-selection bias in the policy adoption, I use a variety of propensity score matching methods to pair inflation targeting countries with comparable non-targeting countries based on their observable characteristics.

My results suggest that inflation targeting has led to an increase in private domestic investment from 1.17 to 2.69 percentage points in targeting countries compared to non-targeting countries. This economically meaningful effect is robust across multiple alternative specifications and econometric tests.

Finally, I highlight several heterogeneities in the effect of inflation targeting, depending

on various factors. First, my results suggest that inflation targeting seems to be effective only in countries with good institutions, thus highlighting the role of institutional reforms in the effectiveness of the targeting regime. Second, inflation targeting appears to be more beneficial when implemented with fiscal rules, highlighting the complementarity between the two institutions. However, as the results are is nuanced in the presence of expenditure rules, governments that have adopted these fiscal institutions should also be concerned with the economic environment, ensuring a minimum of favorable conditions for private investment. Third, inflation targeting seems less effective in countries that are very open to international trade or countries with high unemployment rates. However, inflation targeting seems to be more effective in countries with tight fiscal policies. Finally, IT is all the more advantageous for investment as it characterizes countries richly endowed with natural resources or exposed to "Dutch disease." This result has an important implication: by reducing price and real exchange rate volatility, inflation targeting would thus help limit the perverse effect of natural resource abundance in developing countries.

My findings contribute to the literature on the benefits of adopting inflation targeting in developing countries and provide some food for thought in the literature devoted to the identification of policies likely to stimulate private domestic investment decisions in developing countries. The results have a crucial implication. In addition to promoting macroeconomic stability, inflation targeting could help reduce the private domestic investment gap in developing countries and therefore help increase private-sector contributions to achieving sustainable development goals. Therefore, this paper can be extended by examining the effect of inflation targeting on the volatility of domestic investment, the volatility of foreign direct investment flows, the occurrence of sudden stops, or the performance of domestic firms and the banking sector in developing countries.

Finally, even if no heterogeneity in the effectiveness of inflation targeting in the presence of financial crises seems to emerge in this paper, this question deserves more detailed examination by distinguishing the effects according to the magnitude of the crises and possibly by examining the role of macroprudential standards.

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Appendix A Data and sample

Table A1 – List of countries

Inflation targeting countries (treatment group)		
	Soft IT (default starting dates)	Full-fledged IT (conservative dates)
Brazil	June 1999	June 1999
Chilie	January 1991	August 1999
Colombia	September 1999	October 1999
Dominican Republic *	2011	2012
Ghana	January 2007	January 2007
Guatemala	January 2005	January 2005
Hungary	June 2001	August 2001
Indonesia	July 2005	July 2005
Kazakhstan *	August 2015	August 2015
Mexico	January 1999	January 2001
Paraguay *	May 2011	May 2011
Peru	January 2002	January 2002
Philippines	January 2002	January 2002
Poland	September 1998	September 1998
Romania	August 2005	August 2005
Russia *	2014	2015
Serbia	September 2006	September 2006
South Africa	February 2000	February 2000
Thailand	May 2000	May 2000
Turkey	January 2006	January 2006
Uganda #	June 2011	June 2011
Ukraine *	2015	2017
Uruguay *	2002	2007
Non-targeting countries (control group)		
Algeria	Bangladesh	Nicaragua
Belarus	Bolivia	Bulgaria
Burkina Faso	Cameroon	China
Costa Rica	Croatia	Ivory Coast
Ecuador	Egypt	El Salvador
Honduras	Iran	Jordan
Kenya	Madagascar	Malaysia
Morocco	Nigeria	Pakistan
Saudi Arabia	Sudan	Sri Lanka
Tanzania	Togo	Tunisia
Vietnam	Zambia	Senegal
Guinea	Haiti	Mali
Lao P.D.R	Myanmar	Ethiopia

Sources: Rose (2007); Roger (2009); Tapsoba (2012); Jahan and Sarwat (2012) and Ciżkowicz-Pękała et al. (2019).
*ITers considered as controls in Lin and Ye (2009); Lin (2010); Tapsoba (2012) and Lucotte (2012).
#Countries absent in Lin and Ye (2009); Lin (2010); Tapsoba (2012); Lucotte (2012).
Note: The classification of developing countries comes from the IMF's Fiscal Monitor database

Table A2 – List of variables and their sources

Variables	Nature	Sources
Dependent variable		
Private domestic investment (% GDP)	Continuous	IMF Investment and Capital Stock dataset
Treatment variable		
Full-fledged Inflation Targeting (Hard IT)	Dummy	Rose (2007); Roger (2009); Tapsoba (2012); Jahan and Sarwat (2012); Ciżkowicz-Pękała et al. (2019)
Informal Inflation Targeting (Soft IT)	Dummy	
Baseline model control variables		
Inflation, one-year lag	Continuous	Author's calculations based on WEO database, IMF
Real GDP per capita growth	Continuous	WDI, World Bank
Trade openness	Continuous	WDI, World Bank
Financial development		
(Domestic credit to private sector, in % of GDP)	Continuous	WDI, World Bank
Control of corruption	Score between 0 and 6	ICRG
Fixed exchange rate	Dummy	Ilzetzki et al. (2017)
Additional control variables		
Unemployment rate	Continuous	WDI, World Bank
Lagged tax revenues	Continuous	Author's calculations based on WDI database, World Bank
Lagged public debt	Continuous	Author's calculations based on WEO database, IMF
Lagged public investment	Continuous	Author's calculations based on IMF Investment and Capital Stock dataset
Foreign direct investment	Continuous	WDI, World Bank
Governors' turnover	Dummy	Sturm and De Haan (2001); Dreher et al. (2008); Dreher et al. (2010)
Government stability	Score between -2.5 to 2.5	ICRG
Fiscal Rules	Dummy	IMF Fiscal Rules Dataset
Financial crises	Dummy	Laeven and Valencia (2012)
Resource-rich countries	Dummy	Author's calculations based on WDI database, World Bank

Appendix B Summary statistics

Table B1 – Comparison test of average investment rates between treated and non-treated countries, before treatment

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	262	12.88538	0.3556822	5.757219	12.18501	13.58575
1	893	12.48148	0.1955236	5.842851	12.09774	12.86522
Combined	1155	12.5731	0.1713539	5.823513	12.2369	12.9093
diff		0.4039045	0.4091706		-0.3988979	1.206707

diff = mean(0) - mean(1) t = 0.9871

Ho: diff = 0 degrees of freedom = 1153

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.8381 Pr(|T| > |t|) = 0.3238 Pr(T > t) = 0.1619

Figure B 1 – Representation of the common support

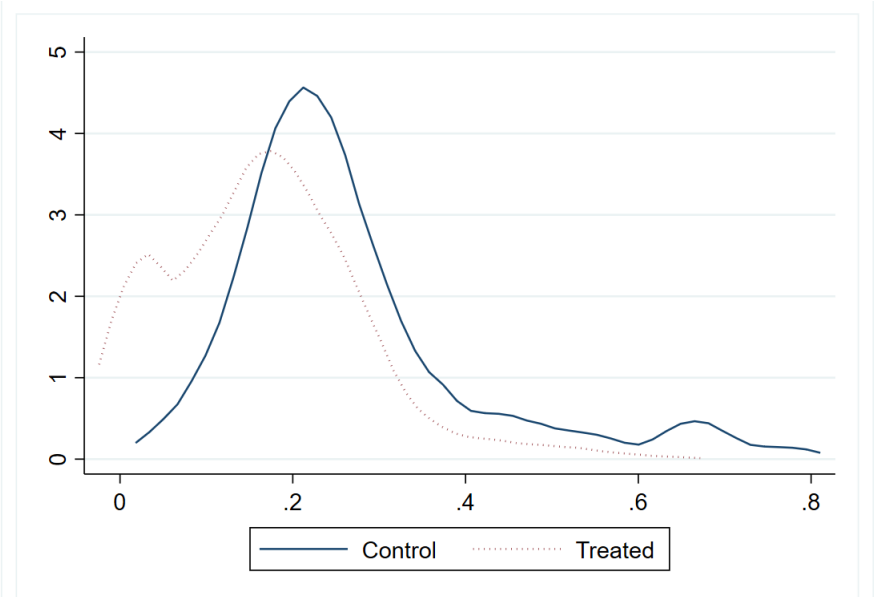

Table B2 – Summary statistics for all variables

	Variables	Obs.	Mean	Sd	Min	Max
Total sample						
	Private domestic investment	1731	12.86411	5.891054	0.4236544	37.33381
	Inflation, one-year lag	1633	34.42448	263.5837	-8.484249	7481.664
	Real GDP per capita growth	1746	2.370773	3.995968	-22.5514	13.69319
	Trade openness	1709	66.56564	32.16683	0.1674176	220.4068
	Control of corruption	1672	2.495963	0.8997682	0	5
	Financial development	1633	35.209	31.22738	0	165.72
	Fixed exchange rate dummy	1701	0.8689006	0.3376082	0	1
	Full-fledged Inflation Targeting	1736	0.1658986	0.3720968	0	1
	Informal Inflation Targeting	1736	0.1768433	0.381646	0	1
	Unemployment rate	1701	7.325755	5.35077	0.398	33.473
	Lagged tax revenues	1475	22.00659	9.444048	4.971286	56.48156
	Lagged public debt	1250	50.74015	35.97489	0.071	495.201
	Lagged public investment	1670	4.285747	3.079542	0.1644941	22.65612
	Governors' turnover	1721	0.1406159	0.347726	0	1
	Government stability	1692	-0.4903109	0.7624882	-2.810035	1.261184
	Foreign direct investment	1,718	3.001961	3.901106	-15.74502	54.23906
	Fiscal Rules	1,953	0.2565284	0.4368287	0	1
	Debt Rules	1,482	0.1862348	0.3894275	0	1
	Budget Balance Rules	1,482	0.2165992	0.4120662	0	1
	Expenditure Rules	1,482	0.0614035	0.24015	0	1
	Financial crises	1,764	0.1428571	0.3500263	0	1
	Resource-rich countries	1,953	0.4208909	0.4938285	0	1
ITers						
	Private domestic investment	275	15.56419	4.589993	5.077262	37.33381
	Inflation, one-year lag	288	5.495393	3.688121	-1.544797	19.25072
	Real GDP per capita growth	288	2.820176	2.746663	-6.674167	11.31545
	Trade openness	288	67.63233	31.89054	20.98217	168.4897
	Control of corruption	283	2.523557	0.7591442	1	5
	Financial development	286	49.86247	36.53732	11.70667	160.1248
	Fixed exchange rate dummy	265	0.8867925	0.3174459	0	1
	Full-fledged Inflation Targeting	288	1	0	1	1
	Informal Inflation Targeting	288	1	0	1	1
	Unemployment rate	288	8.453677	6.568709	0.489	33.473
	Lagged tax revenues	276	25.47759	9.177985	10.98042	48.62605
	Lagged public debt	283	39.82616	17.28573	3.879	81.176
	Lagged public investment	275	3.412934	1.398304	1.153574	9.02424
	Governors' turnover	285	0.077193	0.2673669	0	1
	Government stability	288	-0.3022234	0.7970534	-2.374467	1.261184
	Foreign direct investment	287	4.069247	5.745146	-15.74502	54.23906
	Fiscal Rules	288	0.5555556	0.4977689	0	1
	Debt Rules	243	0.3127572	0.4645733	0	1
	Budget Balance Rules	243	0.436214	0.4969382	0	1
	Expenditure Rules	243	0.2798354	0.4498448	0	1
	Financial crises	288	.0729167	.2604522	0	1
	Resource-rich countries	288	0.2291667	0.4210283	0	1
Non_ITers						
	Private domestic investment					
	Inflation, one-year lag	1318	39.23843	289.4781	-8.484249	7481.664
	Real GDP per capita growth	1436	2.275103	4.203804	-22.5514	13.69319
	Trade openness	1398	66.12776	32.42675	0.1674176	220.4068
	Control of corruption	1370	2.487409	0.9305774	0	5
	Financial development	1324	31.76149	29.12374	0	165.72
	Fixed exchange rate dummy	1409	0.866572	0.3401574	0	1
	Full-fledged Inflation Targeting	1448	0	0	0	0
	Informal Inflation Targeting	1448	0	0	0	0
	Unemployment rate	1386	6.988699	5.015254	0.398	31.84
	Lagged tax revenues	1174	20.75547	8.869988	4.971286	56.48156
	Lagged public debt	948	54.00032	39.54355	0.071	495.201
	Lagged public investment	1368	4.444891	3.308776	0.1644941	22.65612
	Governors' turnover	1408	0.1541193	0.3611914	0	1
	Government stability	1376	-0.5500345	0.7420256	-2.810035	1.219
	Foreign direct investment	1,408	2.774267	3.390418	-5.007241	39.4562
	Fiscal Rules	1,448	0.1712707	0.3768755	0	1
	Debt Rules	1,213	0.1591096	0.3659292	0	1
	Budget Balance Rules	1,213	0.1739489	0.3792219	0	1
	Expenditure Rules	1,213	0.0156636	0.1242216	0	1
	Financial crises	1,448	0.156768	0.3637075	0	1
	Resource-rich countries	1,448	0.3881215	0.4874909	0	1

Appendix C Robustness checks

Table C1 – The estimation of propensity scores (Soft IT)

Dependent variable : Soft IT														
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
Lagged inflation	-0.0380***	-0.0391***	-0.0359***	-0.0375***	-0.0624***	-0.0435***	-0.0355***	-0.0395***	-0.0388***	-0.0292***	-0.0408***	-0.0388***	-0.0398***	-0.0402***
	(0.0062)	(0.0063)	(0.0066)	(0.0065)	(0.0080)	(0.0069)	(0.0061)	(0.0063)	(0.0068)	(0.0076)	(0.0068)	(0.0064)	(0.0063)	(0.0066)
Real GDP per capita growth	0.0214*	0.0197	0.0243**	0.0201	0.0134	0.0246**	0.0175	0.0251**	0.0444***	0.0097	0.0471***	0.0142	0.0182	0.0147
	(0.0119)	(0.0122)	(0.0122)	(0.0127)	(0.0135)	(0.0122)	(0.0120)	(0.0121)	(0.0135)	(0.0141)	(0.0132)	(0.0122)	(0.0121)	(0.0125)
Financial development	0.0064***	0.0062***	0.0061***	0.0066***	0.0055***	0.0061***	0.0070***	0.0058***	0.0102***	0.0060***	0.0128***	0.0068***	0.0058***	0.0062***
	(0.0014)	(0.0014)	(0.0014)	(0.0015)	(0.0016)	(0.0014)	(0.0014)	(0.0015)	(0.0017)	(0.0016)	(0.0018)	(0.0014)	(0.0014)	(0.0014)
Control of corruption	0.1157**	0.1444***	0.1279**	0.1803***	0.1236**	0.1300**	0.0971*	0.1125**	0.0287	0.2629***	0.0543	0.1102**	0.1378***	0.0561
	(0.0502)	(0.0511)	(0.0504)	(0.0548)	(0.0527)	(0.0512)	(0.0516)	(0.0508)	(0.0569)	(0.0583)	(0.0532)	(0.0511)	(0.0508)	(0.0582)
Trade openness	-0.0042***	-0.0044***	-0.0041***	-0.0044***	-0.0049***	-0.0044***	-0.0048***	-0.0039***	-0.0115***	-0.0061***	-0.0047***	-0.0062***	-0.0039***	-0.0066***
	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0016)	(0.0015)	(0.0015)	(0.0014)	(0.0014)	(0.0015)
Fixed exchange rate dummy	-0.5060***	-0.5458***	-0.5813***	-0.4509**	-0.3913**	-0.5413***	-0.5401***	-0.4469**	-0.2651	-0.6872***	-0.2981	-0.5061***	-0.5188***	-0.5161***
	(0.1738)	(0.1765)	(0.1820)	(0.1881)	(0.1843)	(0.1799)	(0.1724)	(0.1804)	(0.1990)	(0.2016)	(0.1961)	(0.1750)	(0.1744)	(0.1784)
Unemployment rate								0.0149*						
								(0.0079)						
Lagged tax revenues									0.0415***					
									(0.0052)					
Lagged public debt										-0.0107***				
										(0.0020)				
Lagged public investment											-0.1966***			
											(0.0232)			
FDI												0.0434***		
												(0.0098)		
Governors' turnover													-0.3177**	
													(0.1362)	
Government stability														0.2748***
														(0.0652)
Constant	-0.3673	-0.3522	-0.3350	-0.5162**	-0.0056	-0.3043	-0.3211	-0.5157**	-0.9551***	0.1907	0.0946	-0.3549	-0.3343	0.1214
	(0.2241)	(0.2273)	(0.2290)	(0.2414)	(0.2380)	(0.2307)	(0.2251)	(0.2392)	(0.2613)	(0.2707)	(0.2488)	(0.2266)	(0.2250)	(0.2575)
Pseudo R^2	0.0938	0.1355	0.0809	0.1028	0.1355	0.1005	0.1144	0.0973	0.1718	0.1107	0.1770	0.1096	0.0994	0.1121
Observations	1389	1345	1311	1184	1130	1368	1365	1389	1242	1060	1362	1379	1363	1334

Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10

Table C2 – The effect of IT on private domestic investment in %GDP (using default starting dates or Soft IT)

Variable dépendante : Investissement domestique privé	N-nearest-Neighbors Matching			Radius Matching			Kernel Matching	Local linear regression
	N=1	N=2	N=3	r=0.005	r=0.01	r=0.05		
Modèle de base [1] ATT	2.5800***	2.2795***	2.1895***	1.6500***	1.7038***	1.7983***	1.8022***	1.6330***
	(0.6778)	(0.6317)	(0.5727)	(0.4626)	(0.4547)	(0.4449)	(0.4232)	(0.3997)
Treated observations	263	263	263	263	263	263	263	263
Control observations	1099	1099	1099	1099	1099	1099	1099	1099
Total observations	1362	1362	1362	1362	1362	1362	1362	1362
Robustness check								
[2] Excluding year 1990	1.9466***	1.9651***	1.7660***	1.9300***	1.7804***	1.9304***	1.9252***	1.7304***
	(0.7101)	(0.6363)	(0.5982)	(0.4612)	(0.4559)	(0.4085)	(0.4185)	(0.4276)
[3] Excluding hyperinflation episodes	1.9363***	2.3244***	2.1682***	1.7071***	1.7573***	2.0015***	1.9777***	1.7715***
	(0.7260)	(0.6093)	(0.5779)	(0.4609)	(0.4405)	(0.4196)	(0.4205)	(0.4149)
[4] Excluding financial crises	2.5685***	2.0154***	1.9268***	1.8509***	1.8071***	1.9156***	1.8993***	1.6872***
	(0.7127)	(0.6696)	(0.6183)	(0.4980)	(0.5144)	(0.4412)	(0.4519)	(0.4400)
[5] Excluding monetary union,dollarization, de facto peg, currency- board	1.9407***	1.6116**	1.6224***	1.5713***	1.8275***	1.8864***	1.8956***	1.8103***
	(0.7196)	(0.6560)	(0.6268)	(0.5089)	(0.4942)	(0.4317)	(0.4699)	(0.4892)
[6] Including unemployment rate	2.1392***	2.1189***	2.1200***	1.9339***	2.0165***	2.1467***	2.1389***	1.8035***
	(0.6749)	(0.6414)	(0.6032)	(0.4834)	(0.4479)	(0.4152)	(0.4120)	(0.3912)
[7] Including tax revenues	1.3746*	1.5527**	1.5849**	1.4718***	1.8675***	1.9483***	1.9338***	1.9108***
	(0.8040)	(0.6875)	(0.6394)	(0.5361)	(0.5055)	(0.4273)	(0.4752)	(0.4645)
[8] Including public debt	1.0629	1.1427*	1.3496**	1.2516**	1.2244***	1.2102***	1.2259***	1.0556**
	(0.7156)	(0.6556)	(0.6374)	(0.5114)	(0.4497)	(0.4431)	(0.4082)	(0.4506)
[9]Including public investment	1.9908***	2.0846***	2.2438***	1.9926***	2.0097***	2.3364***	2.3444***	2.3647***
	(0.6718)	(0.5955)	(0.5344)	(0.4636)	(0.4261)	(0.3904)	(0.3923)	(0.3988)
[10] Including FDI	0.5936	0.7307	0.7560	0.8962*	1.2838***	1.4936***	1.4968***	1.2902***
	(0.7529)	(0.6939)	(0.6099)	(0.4862)	(0.4644)	(0.4510)	(0.4711)	(0.4439)
[11] Including Governors' turnovover	1.6227**	1.8931***	1.9030***	1.6352***	1.7090***	1.8959***	1.8996***	1.7409***
	(0.6842)	(0.5916)	(0.5824)	(0.4392)	(0.4243)	(0.4160)	(0.3995)	(0.4322)
[12] Including government stability	1.3117*	1.3216**	1.2521**	1.7174***	1.5750***	1.7143***	1.6890***	1.5859***
	(0.7125)	(0.6274)	(0.5815)	(0.5017)	(0.4837)	(0.4235)	(0.4340)	(0.4362)
[13] Excluding new ITers	1.8643***	1.7702***	1.9927***	1.8681***	1.8517***	1.9957***	1.9769***	1.7800***
	(0.6928)	(0.5920)	(0.6203)	(0.4415)	(0.4321)	(0.4102)	(0.3936)	(0.4043)
[14] Excluding CEECs	2.4958***	2.1164***	2.3269***	2.4005***	1.7933***	1.9554***	1.9246***	1.7875***
	(0.8998)	(0.7880)	(0.7169)	(0.5640)	(0.5238)	(0.5517)	(0.5763)	(0.5170)
Quality of the matching								
Pseudo R^2	0.016	0.009	0.008	0.008	0.007	0.009	0.009	0.016
Rosenbaum bounds sensitivity tests	1.9	1.7	1.7	1.7	1.6	1.8	1.8	1.7
Standardized bias (p-value)	0.087	0.353	0.456	0.456	0.555	0.399	0.412	0.087

Bootstrapped standard errors based on 500 replications reported in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table C3 – The effect of IT on private domestic investment in %GDP (using conservative starting dates or Hard IT) - IPW

Dependent variable: Private domestic investment	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
ATT	2.0041***	2.0041***	2.0136***	1.8742***	2.3808***	1.8628***	2.3895***	2.0076***	2.2213***	1.3269***	2.5952***	1.7091***	1.8645***	1.7523***
	(0.4018)	(0.4284)	(0.4207)	(0.4519)	(0.4402)	(0.4079)	(0.5576)	(0.4135)	(0.4236)	(0.4282)	(0.3930)	(0.4369)	(0.3873)	(0.4161)
Lagged inflation	-0.0529***	-0.0529***	-0.0508***	-0.0514***	-0.0910***	-0.0515***	-0.0473***	-0.0542***	-0.0539***	-0.0447***	-0.0566***	-0.0546***	-0.0546***	-0.0512***
	(0.0063)	(0.0063)	(0.0070)	(0.0063)	(0.0111)	(0.0062)	(0.0064)	(0.0066)	(0.0076)	(0.0081)	(0.0072)	(0.0067)	(0.0068)	(0.0068)
Real GDP per capita growth	0.0180	0.0180	0.0168	0.0171	0.0014	0.0167	0.0105	0.0208*	0.0412***	0.0036	0.0434***	0.0091	0.0131	0.0154
	(0.0122)	(0.0124)	(0.0119)	(0.0125)	(0.0151)	(0.0119)	(0.0125)	(0.0118)	(0.0134)	(0.0147)	(0.0128)	(0.0121)	(0.0118)	(0.0126)
Financial development	0.0059***	0.0059***	0.0058***	0.0063***	0.0045***	0.0060***	0.0092***	0.0054***	0.0097***	0.0056***	0.0116***	0.0065***	0.0054***	0.0060***
	(0.0014)	(0.0014)	(0.0014)	(0.0015)	(0.0016)	(0.0015)	(0.0016)	(0.0015)	(0.0016)	(0.0017)	(0.0016)	(0.0015)	(0.0015)	(0.0015)
Control of corruption	0.1125**	0.1125**	0.1085**	0.1688***	0.1153**	0.0961*	0.0287	0.0974*	0.0186	0.2447***	0.0395	0.0970*	0.1253**	0.0760
	(0.0495)	(0.0508)	(0.0476)	(0.0533)	(0.0567)	(0.0501)	(0.0556)	(0.0520)	(0.0561)	(0.0523)	(0.0558)	(0.0552)	(0.0536)	(0.0580)
Trade openness	-0.0041***	-0.0041***	-0.0039***	-0.0045***	-0.0048***	-0.0039***	-0.0104***	-0.0038***	-0.0109***	-0.0060***	-0.0045***	-0.0063***	-0.0038***	-0.0063***
	(0.0015)	(0.0015)	(0.0014)	(0.0016)	(0.0017)	(0.0015)	(0.0016)	(0.0014)	(0.0016)	(0.0018)	(0.0016)	(0.0018)	(0.0014)	(0.0016)
Fixed exchange rate dummy	-0.6607***	-0.6607***	-0.7416***	-0.5756***	-0.5910***	-0.6811***	-0.6309***	-0.5757***	-0.4178**	-0.7519***	-0.4224**	-0.6435***	-0.6599***	-0.6207***
	(0.1687)	(0.1595)	(0.1735)	(0.1754)	(0.1890)	(0.1764)	(0.1742)	(0.1658)	(0.1879)	(0.1918)	(0.1795)	(0.1718)	(0.1750)	(0.1736)
Unemployment rate								0.0163**						
								(0.0082)						
Lagged tax revenues									0.0374***					
									(0.0058)					
Lagged public debt										-0.0094***				
										(0.0016)				
Lagged public investment											-0.1756***			
											(0.0191)			
FDI												0.0441***		
												(0.0121)		
Governors' turnover													-0.3298**	
													(0.1452)	
Government stability														0.2086***
														(0.0730)
Constant	-0.1746	-0.1746	-0.1031	-0.3363	0.3683	-0.1252	0.1491	-0.0174	0.2952	0.2561	-0.1523	-0.1261	-0.1360	0.1308
	(0.2189)	(0.2052)	(0.2064)	(0.2180)	(0.2459)	(0.2002)	(0.2357)	(0.2212)	(0.2516)	(0.2240)	(0.2198)	(0.2165)	(0.2144)	(0.2415)
Observations	1362	1360	1290	1161	1103	1341	(0.2357)	1059	1041	1362	1352	1336	1336	1307

Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10

Table C4 – The effect of IT on private domestic investment in %GDP (using default starting dates or Soft IT) - IPW

Dependent variable: Private domestic investment	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
ATT	1.6870***	1.6870***	1.7133***	1.5507***	2.0181***	1.6719***	1.9973***	1.7007***	1.9206***	1.0660**	2.3850***	1.4233***	1.5546***	1.5470***
	(0.4311)	(0.4196)	(0.4270)	(0.4557)	(0.4588)	(0.3967)	(0.5482)	(0.3854)	(0.4146)	(0.4224)	(0.3741)	(0.4247)	(0.4295)	(0.4452)
Lagged inflation	-0.0373***	-0.0373***	-0.0342***	-0.0360***	-0.0604***	-0.0420***	-0.0313***	-0.0380***	-0.0367***	-0.0271***	-0.0408***	-0.0372***	-0.0383***	-0.0389***
	(0.0072)	(0.0068)	(0.0073)	(0.0072)	(0.0132)	(0.0055)	(0.0061)	(0.0071)	(0.0068)	(0.0093)	(0.0070)	(0.0071)	(0.0073)	(0.0081)
Real GDP per capita growth	0.0202*	0.0202	0.0220*	0.0188	0.0111	0.0223*	0.0125	0.0228**	0.0433***	0.0072	0.0471***	0.0119	0.0160	0.0126
	(0.0114)	(0.0126)	(0.0114)	(0.0125)	(0.0138)	(0.0118)	(0.0129)	(0.0116)	(0.0136)	(0.0144)	(0.0125)	(0.0124)	(0.0117)	(0.0120)
Financial development	0.0065***	0.0065***	0.0064***	0.0069***	0.0058***	0.0064***	0.0097***	0.0061***	0.0104***	0.0064***	0.0128***	0.0071***	0.0061***	0.0065***
	(0.0014)	(0.0014)	(0.0014)	(0.0016)	(0.0017)	(0.0014)	(0.0016)	(0.0014)	(0.0018)	(0.0016)	(0.0016)	(0.0014)	(0.0014)	(0.0015)
Control of corruption	0.1254**	0.1254***	0.1273**	0.1795***	0.1220**	0.1294**	0.0539	0.1123**	0.0330	0.2583***	0.0543	0.1096**	0.1367***	0.0663
	(0.0504)	(0.0480)	(0.0518)	(0.0548)	(0.0553)	(0.0505)	(0.0551)	(0.0516)	(0.0536)	(0.0563)	(0.0497)	(0.0497)	(0.0491)	(0.0549)
Trade openness	-0.0043***	-0.0043***	-0.0043***	-0.0046***	-0.0050***	-0.0046***	-0.0102***	-0.0041***	-0.0113***	-0.0063***	-0.0047***	-0.0064***	-0.0040***	-0.0065***
	(0.0015)	(0.0013)	(0.0015)	(0.0015)	(0.0015)	(0.0015)		(0.0015) (0.0014)	(0.0016)	(0.0017) (0.0016)	(0.0017)	(0.0014)	(0.0017)	
Fixed exchange rate dummy	-0.5414***	-0.5414***	-0.6045***	-0.4731***	-0.4092**	-0.5624***	-0.4983***	-0.4687***	-0.3011*	-0.6922***	-0.2981*	-0.5253***	-0.5406***	-0.5386***
	(0.1734)	(0.1692)	(0.1613)	(0.1683)	(0.1680)	(0.1666)	(0.1626)	(0.1633)	(0.1765)	(0.1756)	(0.1794)	(0.1724)	(0.1647)	(0.1820)
Unemployment rate								0.0144*						
								(0.0076)						
Lagged tax revenues									0.0388***					
									(0.0055)					
Lagged public debt										-0.0099***				
										(0.0016)				
Lagged public investment											-0.1966***			
											(0.0218)			
FDI												0.0438***		
												(0.0118)		
Governors' turnover													-0.2913**	
													(0.1436)	
Government stability														0.2425***
														(0.0697)
Constant	-0.3801*	-0.3801*	-0.3463*	-0.5285**	-0.0273	-0.3161	-0.1077	-0.3199	0.1333	0.0946	-0.3693*	-0.3404	-0.3469	0.0583
	(0.2118)	(0.2107)	(0.2072)	(0.2236)	(0.2323)	(0.2111)	(0.2103)	(0.2315)	(0.2554)	(0.2203)	(0.2174)	0.2152)	(0.2174)	(0.2578)
Observations	1362	1362	1290	1161	1103	1341	1313	1059	1041	1362	1352	1336	1336	1307

Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10