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Does corruption affect FDI inflow in Visegrad countries? A Panel Data Analysis

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In Prague on 07/2024 Yinyong Dong

References

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Abstract

The main objective of this paper is to examine whether corruption affects FDI inflows to Visegrad countries? If yes, in how way does corruption affect FDI inflows in Visegrad countries? This paper collects information on FDI inflows for four countries - Czech Republic, Hungary, Poland and Slovakia - for the period 2000-2022. An empirical analysis is conducted conditional on time fixed effects, individual fixed effects and control variables. The results demonstrate that the corruption perception index (CRP) has a significant positive effect on FDI inflows in the V4 countries, i.e., countries with lower levels of corruption tend to have higher FDI inflows. The analysis also proves that corruption not only affects FDI inflows directly, but also indirectly through other channels. Specifically, an increase in the level of corruption not only directly affects the reduction of FDI, but also reduces FDI inflows by affecting the appreciation of the exchange rate. In addition, after dividing the Visegrad countries into two groups according to high and low urbanization rates, this paper finds that the impact of corruption on FDI will be significant in countries with high urbanization rates and insignificant in countries with low urbanization rates.

Abstrakt

Hlavním cílem tohoto článku je zjistit, zda korupce ovlivňuje příliv přímých zahraničních investic do zemí Visegrádské skupiny. Pokud ano, jakým způsobem ovlivňuje korupce příliv PZI do zemí Visegrádu? Tento článek shromažďuje informace o přílivu PZI pro čtyři země – Českou republiku, Maďarsko, Polsko a Slovensko - za období 2000-2022. Empirická analýza je provedena za podmínky časově fixních efektů, individuálních fixních efektů a kontrolních proměnných. Výsledky ukazují, že index vnímání korupce (CRP) má významný pozitivní vliv na příliv PZI v zemích V4, tj. země s nižší mírou korupce mají tendenci k vyššímu přílivu PZI. Analýza rovněž dokazuje, že korupce neovlivňuje příliv PZI pouze přímo, ale také nepřímo prostřednictvím dalších kanálů. Konkrétně zvýšení úrovně korupce nejen přímo ovlivňuje snížení přílivu PZI, ale také snižuje příliv PZI tím, že ovlivňuje zhodnocení

směnného kurzu. Navíc po rozdělení zemí Visegrádské skupiny do dvou skupin podle vysoké a nízké míry urbanizace tento článek zjistí, že vliv korupce na PZI bude významný v zemích s vysokou mírou urbanizace a nevýznamný v zemích s nízkou mírou urbanizace.

Keywords

Corruption; Foreign Direct Investment; Panel Data; Visegrad Country; Determinants

Klíčová slova

Korupce; přímé zahraniční investice; panelová data; země Visegrádu; determinanty

Title

Does corruption affect FDI inflow in Visegrad countries? A Panel Data Analysis

Název práce

Ovlivňuje korupce příliv přímých zahraničních investic v zemích Visegrádské skupiny? Analýza panelových dat

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Introduction

This paper focuses on the relationship between corruption and FDI inflows in visegrad countries (comprising the Czech Republic, Hungary, Poland and Slovakia, also known as the V4 countries). This is a topic that has received a lot of attention. There are many studies made by scholars to analyze the impact of corruption on FDI (e.g., Wei (1999), Lambsdorff and Cornelius (2000)). Some studies have found that corruption negatively affects investment because it increases additional operating costs and is accompanied by uncertainty of returns, leading to lower expected returns and ultimately less investment. However, there are also studies that argue that corruption can have a facilitating effect on FDI, especially in relation to import and export licenses. Therefore, it is still not possible to have uniform conclusions and views on this.

This article uses a fixed effects model to explain the impact of corruption on FDI inflows in the V4 countries. The model covers 92 observations for four countries - Czech Republic, Hungary, Poland and Slovakia - over the period 2000-2022. The fixed effects model estimation shows that FDI inflows increase significantly as the corruption perception index increases (i.e., corruption decreases) under year and country fixed effects.

The contribution of this paper to the existing literature is to explore some of the mechanisms by which corruption affects FDI inflows in V4 countries. Specifically, the paper finds that corruption not only affects FDI inflows directly but also indirectly through other factors by mediation effect analysis and heterogeneity test. Meanwhile, among V4 countries, corruption has different impacts on FDI inflows in countries with high and low urbanization rates. Compared with the existing literature, this paper extends the analysis of the mediating effect of corruption on FDI impact. It provides more insights into the mechanism analysis and path test of the impact of corruption on FDI.

The rest of the paper is structured as follows. Chapter 1 focuses on a review of the theoretical and empirical literature on FDI and corruption, with an emphasis on

definitions and linkages. Chapter 2 presents the data and variables. Chapter 3 presents the methodology of the thesis. Chapter 4 analyzes the regression results of the paper. The last chapter is a summary.

1 Literature reviews

1.1 The Visegrad countries group

The Visegrad Group, comprising the Czech Republic, Hungary, Poland, and Slovakia, was formed on February 15, 1991, in the Hungarian town of Visegrad. The formation of this alliance, also known as the Visegrad Four (V4), was driven by a shared history, geographic proximity, and common goals of transitioning from centrally planned economies to market-oriented systems and integrating into European and transatlantic structures such as the European Union (EU) and NATO. The choice of Visegrad as the meeting place was symbolic, referencing a historical summit held in 1335 where the kings of Bohemia, Poland, and Hungary met to forge an alliance. This historical context underlined the new Visegrad Group's commitment to regional cooperation and unity. The primary motivations for forming the V4 included fostering cooperation and mutual support during economic transitions, coordinating policies for EU and NATO membership, enhancing regional stability and security, and leveraging cultural and political alliances. These countries' strategic location, skilled labor force, and economic reforms further contributed to their attractiveness as investment destinations.

The Visegrad Group has achieved significant success in promoting regional cooperation and achieving broader international objectives. One notable achievement is their collective advocacy for EU enlargement, which played a crucial role in the accession of Central and Eastern European countries to the EU in 2004. This advocacy helped to stabilize the region politically and economically by integrating it into the broader European framework. Additionally, the V4 has initiated numerous joint projects and programs aimed at enhancing infrastructure, energy security, and environmental sustainability. For example, the North-South Gas Corridor project is a significant initiative aimed at diversifying energy sources and reducing dependency on Russian gas, thereby enhancing regional energy security.

Furthermore, the V4 countries have collectively advanced politically and

economically through various collaborative efforts. In the political realm, the V4 has successfully coordinated positions within the EU, often acting as a bloc to influence EU policies, particularly those related to regional development, agriculture, and cohesion funds. Economically, the V4 countries have significantly benefited from mutual trade and investment initiatives. The creation of the Visegrad Patent Institute in 2016, which facilitates patent protection within the region, has boosted innovation and cross-border business activities. Additionally, joint efforts in digital transformation, such as the Digital Visegrad initiative, have propelled the member states towards becoming leaders in digital economy and cybersecurity within Europe.

The V4's collaborative efforts have significantly contributed to the successful integration of its member states into the EU and NATO, fostering economic growth, political stability, and security cooperation. The Visegrad Group's success in promoting regional cooperation and achieving broader international objectives serves as a compelling case study in the importance of strategic alliances (Vachudová 2005; Dangerfield 2008).

1.2 Foreign Direct Investment

1.2.1 Definition of Foreign Direct Investment

Foreign Direct Investment (FDI) is defined as international investment conducted by a resident entity of one economy into the business operations of an entity in a different economy, aiming to establish lasting interests (IMF, 1993). According to the World Trade Organization (1996), FDI happens when an investor from one country (the home country) acquires assets in another country (the host country) with the intention to manage those assets. This management aspect sets FDI apart from portfolio investments in foreign stocks, bonds, and other financial instruments. Alternatively, FDI can be described as holding 10 percent or more of the ordinary shares or voting stock of an enterprise, which is typically seen as indicating 'significant influence' by an investor (IMF, 2000). This definition can vary by country and may be influenced by national policies, some of which limit foreign shareholdings in local companies. The

World Bank (2004) characterizes FDI as foreign investment that establishes a lasting interest or effective management control over an enterprise. In its publication on The Benchmark Definition of FDI, the OECD (2008) defines FDI as net inflows of investment aimed at acquiring a lasting management interest (10% or more of the voting stock) in a firm operating in any economy other than the investor's home country. The 10% threshold is emphasized to ensure statistical consistency across countries (UNCTAD, 2009). Lipsey et al. (1999) stated that this 'lasting interest' implies a long-term relationship between the direct investor and the firm, as well as significant influence on the management of the firm.

1.2.2 The origins and development of FDI theories

Despite numerous attempts by various schools of thought to explain the phenomenon of FDI, its origins remain complex and not fully understood. There is no consensus on a single superior or universally accepted theory.

The foundations of Foreign Direct Investment (FDI) theory can be traced back to the early works of Adam Smith and David Ricardo. Adam Smith's theory of absolute advantage, as presented in his seminal work in 1776, suggested that trade between two nations would occur if one country could produce and export goods using a given amount of capital and labor more efficiently than its competitors. However, Smith's theory did not address the scenario where one country was not engaged in production, leaving gaps in the explanation of international trade and investment (Smith 2002).

David Ricardo's theory of comparative advantage, introduced in 1817, sought to explain international trade dynamics more effectively. Ricardo posited that even if a country lacked an absolute advantage, it could still benefit from trade by specializing in the production of goods where it had a relative efficiency. However, Ricardo's theory was limited by its assumptions of two countries, two products, and perfect factor mobility, which did not adequately justify international capital movements (Ricardo 2024).

Charles P. Kindleberger (1988) argued against the existence of FDI in a perfectly competitive world, suggesting that if markets were efficient and without barriers,

international trade would be the primary mode of global market participation. This notion laid the groundwork for more comprehensive theories.

Stephen Hymer, in his 1960 doctoral thesis published in 1976, significantly advanced FDI theory. Hymer's analysis showed that FDI was driven by the need to reduce or eliminate competition among firms and the desire of multinational corporations (MNCs) to capitalize on unique advantages to increase their returns. This perspective marked a departure from previous theories that did not account for the strategic motivations behind FDI (Hymer 1960).

Robert A. Mundell (1957) further contributed to the understanding of FDI with his sectoral models of international capital flows. Mundell's model suggested that capital flows could act as substitutes for international trade, leading to factor price equalization between countries.

Mundell (1957) built upon Ricardo's theory of comparative advantage by developing a model that included two countries, two products, two factors of production, and two identical production functions in both countries (Denisia 2010). This model aimed to provide a more comprehensive understanding of international economic dynamics. However, Mundell's model was more focused on short-term, international portfolio investments rather than Foreign Direct Investment (FDI), and thus it fell short in explaining international production through FDI.

Many early FDI theories were predominantly centered on the contexts of the United States and Europe, which limited their applicability to other regions. To address the limitations of Mundell's model, Kojima and Ozawa (1984) developed a theory contextualized in Japan. They argued that FDI occurs when a country has a comparative disadvantage in producing a certain product, whereas international trade is driven by comparative advantage.

Kojima and Ozawa's model was significant as it offered an alternative perspective on FDI, highlighting the role of comparative disadvantage in driving investment flows. This approach contrasted with the earlier theories that primarily focused on comparative advantage and market imperfections.

In summary, while Mundell's (1957) model extended the understanding of

international economic interactions, it was limited in scope regarding FDI. Kojima and Ozawa (1984) provided a valuable contribution by incorporating the concept of comparative disadvantage, thereby broadening the theoretical framework of FDI.

The trend of post-Second World War investments by US firms in Western Europe from 1950 to 1970, which saw a shift from exporting to Foreign Direct Investment (FDI), can be elucidated using Vernon's (1966) Product Life Cycle (PLC) theory. This theory posits that firms progress through four stages: innovation, growth, maturity, and decline. The principles underlying this theory are technological innovation and market expansion. While technology enables the development and conceptualization of new products, the size of the market influences the scale and type of international trade.

In the initial stage, companies invent, produce, and sell new products within their domestic markets. If the product proves successful, production scales up, leading to market penetration and the development of exports. This transition marks the shift from the growth stage to the maturity stage. During maturity, competitors start to emerge, prompting the original producer to establish production facilities in foreign markets to meet increasing demand. At this point, product standardization occurs, and investments are made in global locations with the lowest input costs. Eventually, the product is exported back to the country of origin, transitioning from an exporter to an importer as per the PLC, and is gradually phased out. To overcome the decline phase, the firm must innovate again, thus beginning a new product life cycle (Nayak and Choudhury 2014).

This scenario precisely unfolded when European firms began to replicate American products that were being exported to them. Consequently, US firms had to establish production facilities within local European markets to retain their market share and competitive position (Denisia 2010).

Similar to other FDI theories, the Product Life Cycle (PLC) theory has its shortcomings. Boddewyn (1985) highlighted that the PLC theory is fundamentally theoretical and lacks extensive empirical validation. Furthermore, the PLC theory does not encompass all factors influencing FDI decisions. For example, it explains the location choices for manufacturing infrastructure but overlooks the ownership structures, such as whether the manufacturing is licensed or handled through

subsidiaries. The PLC theory simplifies the decision-making process by assuming a straightforward and sequential path without obstacles, which is often not the case in real-world situations. This limitation makes it more relevant to industries where growth is driven by technological innovation (Buckley et al. 1991). Furthermore, the PLC theory has been criticized for failing to explain why pursuing FDI would be more profitable for a firm than continuing with its exporting strategy, and it does not address the timing of when to invest internationally (Nayak and Choudhury 2014).

As highlighted by Boddewyn (1983), during the early 1980s, numerous researchers, including Casson (1991), Calvet (1981), Grosse (1992), and Rugman (1980), proposed their unique theories of Foreign Direct Investment (FDI). While these scholars made significant attempts to integrate various elements—such as capital, location, industrial organization, firm growth, market failure, foreign exchange parity, investment portfolios, and product lifecycle theories—into comprehensive frameworks to explain FDI motivations and patterns, Dunning's eclectic paradigm received the most recognition (Boddewyn 1983). Introduced in 1977, John Dunning's Eclectic Paradigm, also known as the OLI model, posits that FDI arises when firms benefit from ownership, locational, and internalization advantages (Dunning, 1977).

1.2.3 The types of FDI theories

Denisia (2010) explains that, from a macroeconomic viewpoint, FDI represents a form of cross-border capital flow between the home and host countries, recorded in the balance of payments statements of nations. The focus is on capital flows and stocks, as well as revenues generated from these investments. Conversely, the microeconomic perspective focuses on the reasons behind investments across borders from the investor's perspective. Santos (2023) reviewed the literature on foreign direct investment (FDI), productivity, and technology upgrading, focusing on macroeconomic and microeconomic models. She highlighted that macroeconomic determinants include factors such as market size, economic stability, and infrastructure quality, which are crucial for FDI inflows. On the microeconomic side, firm-specific advantages like technological capabilities and organizational practices play a significant role in

attracting FDI. Santos emphasized the need for comprehensive models that account for the dynamic and complex nature of FDI and its impacts on local productivity (Santos 2023). Caves (1971) identified examples of these characteristics, including product differentiation, technology, the product life cycle, and firm size as measured by sales or asset value. Another scholar, Gray (1981), also classified FDI theories from macro and microeconomic perspectives. According to Gray, macroeconomic FDI theories focus on country-specific factors and are closely related to trade and international economics, while microeconomic theories are firm-specific, dealing with ownership and internalization benefits, and are inclined towards industrial economics and market imperfections.

According to Lipsey (2004), from a macroeconomic perspective, Foreign Direct Investment (FDI) represents a specific type of capital flow crossing national borders from home countries to host countries, recorded in the balance of payments statistics. These flows result in capital stocks in host countries, signifying the value of investments from the home country in entities—typically corporations—either controlled by a home-country owner or where the home-country owner holds a significant share of voting rights. Lipsey (2004) further elaborates that the critical variables of interest include the flow of financial capital, the accumulated value of capital stocks from investing firms, and the income generated from these investments. Key macro-level determinants influencing a host country's ability to attract FDI encompass market size, GDP, economic growth rate, infrastructure, natural resources, and institutional factors like political stability.

Lipsey (2004) also outlines the microeconomic perspective, which focuses on the motivations behind FDI from the investor’s viewpoint, similar to a firm-level or industry-level perspective in decision-making. This microeconomic approach evaluates the consequences for the investor and the home and host countries resulting from the operations of multinationals or their affiliates created by these investments. The emphasis is on trade, employment, production, and the flows and stocks of intellectual capital, which are measured by capital flows and stocks in the balance of payments. Some proxies for intellectual capital flow are included in the current account (Lipsey

2004). According to Huang (2017), microeconomic FDI theories seek to explain why multinational corporations (MNCs) choose specific locations for their subsidiaries and why they target particular markets. Many of these theories hinge on the existence of imperfect markets.

Hymer's (1976) firm-specific advantage theory posits that an MNC's decision to invest abroad is based on particular advantages it holds, such as access to raw materials, economies of scale, labor availability, low transaction costs, and intangible assets like brands and patents. This decision is firm-specific rather than driven by the capital market. Hymer's theory, foundational in explaining international production, is supported by other scholars, including Kindleberger's (1969) imperfect markets model, Knickerbocker's (1973) oligopolistic reaction theory, Buckley and Casson's (1991) internalization theory, and Dunning's (1974) eclectic paradigm. These theories share a common principle—the existence of imperfect markets influences firm behavior. Therefore, except for Dunning's eclectic theory, these will not be further discussed as they are encompassed within Dunning's OLI paradigm.

In summary, Lipsey (2004) distinguishes between macroeconomic and microeconomic perspectives on FDI. The macroeconomic view treats FDI as a cross-border capital flow, focusing on financial capital flows, capital stock values, and investment-generated income. It highlights macro-level determinants like market size, GDP, growth rates, infrastructure, natural resources, and political stability that influence a host country's ability to attract FDI. Conversely, the microeconomic perspective considers FDI motivations from the investor's point of view, examining the effects on the investor and both home and host countries due to multinational operations. It emphasizes firm-specific advantages and market imperfections, explaining why MNCs choose specific investment locations.

1.2.4 The determinants of FDI

Determinants of FDI inflows are characterized by various attributes of a host country that influence investors' decisions to allocate their investments. These factors include the market size and characteristics, accessibility to new markets, production

costs, regulatory environment, investment incentives, and other relevant aspects. Investors analyze these determinants to maximize potential profits, as these factors significantly impact the decision-making process regarding the selection of the host country, as well as the volume, form, and timing of the investment.

Typically, firm characteristics and their associated resources are considered internal determinants; while the economic, cultural, social and legal environments of home and host countries are considered external determinants. However, economic and non-economic factors are also a way of classifying the determinants of FDI inflows.

Market determinants, distance-related determinants and factor-related determinants are also among the ways to differentiate FDI inflows (Borrmann, Jungnickel, and Keller 2005). Gross national product (GNP) of the host country and GDP of the neighboring country, population and level of development of the host country belong to the first group of determinants. Distance-related determinants usually include tariff rates, common language, openness rates, and other factors of trade relations. In contrast, the quality of labor, productivity, level of technology, and so on of the host country are determinants related to factors of production.

1.2.4.1 Inflation

Faroh and Shen (2015) examined the economy of Sierra Leone from 1985 to 2012 and found that inflation rate had a weak negative correlation with FDI inflows, while interest rates were found to have no significant effect. Additionally, their study indicated that exchange rate stability and greater trade openness were strong and significant attractors of FDI. Conversely, research conducted by Omankhanlen (2011) on FDI inflows into Nigeria during the period 1980–2011 concluded that inflation had no discernible effect on FDI inflows. Similarly, in a study conducted by Xaypanya et al. (2015), the factors influencing foreign direct investment (FDI) in the ASEAN region were examined over a span of eleven years (2000-2011). The study revealed that the inflation rate had a detrimental effect on FDI, whereas infrastructure facilities and the level of openness had a notable positive impact on FDI inflows into the ASEAN region.

1.2.4.2 Exchange

Abbott et al. (2012) examined the relationship between exchange rate mechanisms and the dynamics of foreign direct investment (FDI) inflows within a cohort of 70 developing economies over the period 1985–2004. The empirical evidence garnered from their analysis indicates that economies characterized by fixed or intermediate exchange rate regimes have exhibited a markedly superior capacity to attract FDI inflows, as compared to those economies with a flexible exchange rate arrangement. Similarly, Alba, Wang, and Park (2010) examined the impact of exchange rates on FDI inflows and found that there is a positive and significant effect of exchange rates on FDI inflows under a favorable FDI environment.

In a rigorous economic analysis conducted by Ang (2008), the Malaysian economy was scrutinized, leading to the endorsement of a hypothesis that posits a correlation between currency devaluation and an escalation in foreign direct investment (FDI) inflows. In addition, Wafure (2010) indicated that the depreciation of the exchange rate is a significant factor influencing foreign direct investment (FDI) in Nigeria. Xing and Wan (2006) suggested that the depreciation of the yuan enhanced China's ability to attract foreign direct investment (FDI) from Japan by increasing its competitiveness.

Walsh and Yu's (2010) scholarly work elucidates the interplay between exchange rate fluctuations and the inflow of foreign direct investment (FDI) into recipient nations. The authors propose that within the context of a capital market characterized by imperfections, a devaluation of the host nation's currency exerts a positive influence on the influx of FDI, attributable to the diminished valuation of the host's assets, thereby making them more attractive to foreign investors. In contrast, Lily et al. (2014), in their empirical investigation of the dynamics of Foreign Direct Investment (FDI) into the ASEAN region over the period 1970 to 2011, employed the Auto Regressive Distributed Lag (ARDL) modeling technique. Their analysis unearthed a significant enduring association between exchange rate movements and the trajectory of FDI inflows. Notably, the study identified a negative coefficient associated with the exchange rate, which implies that an appreciation of the host country's currency is correlated with a reduction in the inflow of FDI, suggesting a deterrent effect on foreign

investment.

1.2.4.3 Openness

Jordaan (2005) contends that the influence of trade openness on foreign direct investment (FDI) is contingent upon the nature of the investment. Market-seeking investments can be positively influenced by trade restrictions, leading to less openness. This occurs when foreign enterprises, looking to cater to local markets, choose to establish subsidiaries in the host nation due to the challenges of importing their products. Conversely, multinational enterprises that focus on export-oriented investments are more likely to be attracted to economies with higher degrees of trade openness, given that trade protectionism can escalate the costs associated with exporting goods. In the manufacturing sector, Wheeler and Mody (1992) discovered significant evidence supporting this idea, but in the electronics sector, they found a less pronounced negative association. Lipsey et al. (1999) and Edwards (1990) discovered significant and favorable impacts of openness on foreign direct investment (FDI), but Chakrabarti (2001) noted a less pronounced but nonetheless positive connection. According to the Overseas Development Institute in London, the importance of accessing certain markets, which is determined by their size and growth, is significant. However, local market considerations are not as vital for international companies who focus on exporting. Surveys suggest that economies that are characterized as "open" have a higher probability of attracting international investment.

Kosekahyaoglu's (2006) empirical inquiry into the Turkish economy delineated a unidirectional causality from foreign direct investment (FDI) to trade openness, thereby suggesting that FDI is an antecedent factor that propels trade openness without the reciprocal effect. Subsequent scholarly discourse has posited the presence of either complementary or substitutive dynamics between trade openness and FDI inflows. The intricacies of this interplay are contingent upon the type of goods—intermediate or final—highlighted in the analysis by Temiz and Gökmen (2011). The majority of research suggests a mutually supportive relationship (Holtbrügge and Kreppel 2012). In conclusion, most evidence supports that trade openness favors increased FDI inflows,

although some studies have indicated the existence of substitution and complementary effects between them.

1.2.4.4 GDP and GDP per capita

In the literature, there is often confusion between Gross Domestic Product (GDP) and GDP per capita, with many papers using these terms interchangeably. According to Callen (2012), GDP refers to the total value of all market and some non-market goods and services produced within a country's geographical borders and serves as an indicator of the size of the economy. On the other hand, the gross domestic product (GDP) per capita is an economic indicator that reflects the average income level within a nation, thereby providing an approximate gauge of the economic prosperity and the purchasing capacity of its populace. The delineation between this metric and others is imperative, as it enables a more nuanced understanding of the potential for attracting Foreign Direct Investment (FDI). Such a distinction allows policymakers and investors to discern the underlying economic conditions that may influence the inflow of FDI, thus facilitating informed decision-making processes.

According to Chakrabarti (2001), a bigger market in the country where foreign direct investment (FDI) is taking place leads to more prospects for FDI inflows. This is because a large market is needed to effectively use resources and take advantage of economies of scale. Similarly, Ang (2008) found that GDP significantly positively impacts FDI. In his 2005 study, Jordaan (2005) observes that foreign direct investment is inclined to gravitate towards nations characterized by extensive and burgeoning marketplaces, coupled with enhanced consumer purchasing power, thereby promising elevated financial returns for the investing entities.

Edwards (1990) utilized the inverse of income per capita as a proxy for the return on capital and concluded that real GDP per capita is inversely related to the FDI/GDP ratio. However,

other research conducted by Schneider and Frey (1985), Tsai (1994), and Asiedu (2002) has discovered a favorable correlation between these factors. This implies that a greater GDP per capita signifies improved opportunities for foreign direct investment

(FDI) in the country where it is hosted.

In their 2010 study, Azam and Lukman (2010) examined the countries of India, Indonesia, and Pakistan over the period of 1971 to 2005. They identified several important factors that influenced foreign direct investment (FDI) coming into these countries. These factors included market potential, which was measured by GDP per capita, as well as foreign debt, domestic investment, trade liberalization, and infrastructure. In a more recent study, Kurecic et al. (2015) investigated the mutual reliance between GDP per capita and FDI in the transitioning economies of Central and Eastern Europe. Their research, conducted from 1994 to 2013, examined 20 states grouped into three geopolitical categories. They discovered a correlation between foreign direct investment (FDI) and gross domestic product (GDP) per capita in 14 of the 20 states.

1.2.4.5 Infrastructure

Soft infrastructure encompasses institutions and governance frameworks that are market-oriented, whereas hard infrastructure consists of tangible components like highways, telecommunications, airports, rapid distribution systems, power grids, and railways. Ahmad (2015) highlighted the significance of infrastructure in attracting FDI to Malaysia by emphasizing how robust infrastructure development has played a critical role in boosting foreign investment inflows, particularly in sectors like manufacturing and technology. Similarly, Chatterjee (2013) investigated the determinants of inter-state variations in FDI inflows in India and concluded that states with better infrastructure attracted more FDI, reinforcing the significance of infrastructure development in regional FDI distribution.

Behname (2012) conducted a study on the correlation between infrastructure and foreign direct investment (FDI) in nations located in Southern Asia. The study studied data from 1980 to 2009 and found that there is a positive association between urban infrastructure and FDI. Abu Bakar et al. (2012) examined the role of infrastructure in attracting FDI to Malaysia and discovered that both soft and hard infrastructure significantly boost FDI inflows, with soft infrastructure showing a relatively higher

influence on attracting foreign investments.

Khadaroo and Seetanah (2009) studied data from Mauritius between 1981 and 2005 to explore the connection between physical infrastructure and FDI in the manufacturing and services sectors. The results indicated that manufacturing sector investors prioritize physical infrastructure, while services sector investors do not. Kurul and Yalta (2017) investigated the relationship between institutional factors and FDI flows in developing countries and found that high-quality institutions significantly attract FDI inflows, highlighting the importance of good governance and strong institutional frameworks. Rehman et al. (2011) conducted a study on the influence of infrastructure on foreign direct investment (FDI) in Pakistan from 1975 to 2008. The study revealed a positive correlation between infrastructure and market size with FDI, both in the short term and long term. Conversely, the exchange rate was found to have a negative effect on FDI. Asiedu (2002) conducted a study on 70 developing nations, specifically 35 in Sub-Saharan Africa, between 1988 and 1997. The study emphasized the significance of infrastructure development and economic openness in attracting foreign direct investment (FDI).

Calderón and Servén (2004) analyzed the effects of infrastructure development on economic growth and income distribution, finding that both physical and soft infrastructure significantly enhance FDI inflows, with infrastructure improvements fostering a conducive environment for investment and economic expansion. Babatunde (2010) conducted a study using panel data from Sub-Saharan African countries spanning the years 1980 to 2003. The study revealed that infrastructure, trade openness, and GDP per capita play a vital role in attracting foreign direct investment (FDI). In a study conducted by Wheeler and Mody (1992), the researchers analyzed the investment location choices made by American companies in 42 developing nations between 1982 and 1988. The study revealed that the investment levels in these countries were highly influenced by the quality of energy, communication, and transportation infrastructure, which had a favorable impact.

1.2.4.6 Other factors related to economy

In their 2006 research, Fedderke and Room delineated a spectrum of policy and non-policy elements that propel the cross-border movement of foreign direct investment (FDI). Among the policy factors are the categorization of market regulations for products, the structuring of labor markets, the rates of corporate taxation, the degree of openness to international trade, the presence of trade obstacles, the quality of infrastructure, and restrictions imposed on FDI. Concurrently, they recognized non-policy elements such as the scale of the market, quantified by gross domestic product (GDP), the expenses associated with transportation, the availability of production factors, and the steadiness of political and economic conditions. A plethora of research has been dedicated to examining the role of taxation in the attraction of FDI. Notably, Karkinsky and Riedel (2012), along with Becker et al. (2012), utilized panel data from corporations spanning multiple nations in their investigations. Their conclusions suggest that the host country's corporate tax regime exerts a significant negative effect on the influx of FDI. Conversely, the research by Jones and Temouri (2016) revealed no considerable influence of corporate taxes on the flow of FDI.

Sekkat and Veganzones-Varoudakis (2007) examined the determinants of FDI inflows, categorizing them into basic economic factors, trade and exchange market policies, and other aspects of the investment climate, such as foreign exchange policy regime, trade liberalization, and exchange rate volatility. Their findings indicated that the business climate of the host economy, including infrastructure, availability of skilled labor, incentive factors, political risk, economic factors, social factors, political stability, and institutional roles in law and order enforcement, are crucial drivers of FDI. In their 2014 study, Siddiqui and Aumeboonsuke (2014) examined the influence of interest rates on foreign direct investment (FDI) in five Asian economies. They concluded that political stability plays a crucial role in attracting FDI. They proposed that a low level of political risk signifies a government's dedication to safeguarding the interests of investors, which in turn has a positive impact on FDI inflows. Anyanwu's (2006) study emphasized that investment in Africa is frequently discouraged by regimes with low transparency, unstable policies, religious and ethnic disputes, and

wars, all of which intimidate potential investors. This underscores the importance of political stability and clear, consistent policies in attracting FDI.

In summary, a universal agreement on how inflation affects the attraction of foreign direct investment (FDI) remains elusive among scholars. While inflation may act as a reflection of a nation's economic strategies on a broader scale, investors are more inclined to focus on the enduring economic outlook, which hinges on elements such as geographical positioning, the expanse of the market, the level of earnings, and the availability of natural resources. Empirical studies suggest that in emerging economies, currency devaluation is favored by investors as it boosts the relative purchasing power of their capital in comparison to indigenous asset valuations. On the flip side, within advanced economies, there is a preference for currency appreciation, which implies the possibility of achieving greater financial gains upon the repatriation of investments to their original currency.

Empirical studies generally support the notion of trade openness, but its benefits are subject to the intentions and goals of the investors involved. The openness to international trade tends to benefit export-driven FDI more significantly than market-access seeking FDI. The overall market size, reflected by the Gross Domestic Product (GDP) in real terms, is crucial for signaling the scope for development, expansion, and efficient resource allocation. The per capita income, represented by the real GDP per person, is an indicator of the populace's ability to purchase goods and services, which aids in strategizing the optimal approach for FDI entry in a targeted market. The presence of both intangible and tangible infrastructure is vital for the attraction of a heightened volume of FDI, with their importance varying based on the particular endeavors of the investors. Additionally, ancillary factors including the tax regime, the level of political instability, and the societal context significantly influence the inflow of FDI.

1.3 Corruption

Corruption has gained escalating prominence in recent decades. According to a

research by "World Speaks" in 2011, corruption was a more commonly discussed topic compared to topics such as poverty, unemployment, and security. The increased attention is partially attributed to the growing acknowledgment of the significant expenses linked to corruption. Corruption is believed to deplete approximately 5% of the global GDP on an annual basis, from an economic standpoint. From a societal perspective, it affects the allocation of resources, making inequality, poverty, and widespread suffering worse (P. M. Heywood 2014). Within academic circles, there has been a significant increase in the focus on corruption. Over the past 25 years, there has been a substantial increase in the number of published articles on this subject. By 2010, the total number of articles had exceeded 6000 (P. Heywood 2015).

Corruption has become increasingly prevalent in recent decades. A 2011 study conducted by "World Speaks" revealed that corruption was a more frequently discussed topic than unemployment, destitution, and security. The increased attention is partly due to the growing acknowledgment of the significant expenses linked to corruption. It is estimated that corruption depletes approximately 5% of the global GDP annually, from an economic perspective. From a societal perspective, it affects the allocation of resources, making inequality, poverty, and widespread suffering worse (P. M. Heywood 2014). Within academic circles, there has been a substantial rise in the focus on corruption. The number of articles published on this topic has increased significantly over the past 25 years. P. Heywood (2015) reported that the total number of articles had surpassed 6000 by 2010.

Despite the considerable focus it receives, researchers continue to engage in ongoing discussions over the core definitions of corruption, resulting in its status as a concept that is subject to debate. Therefore, it is essential to establish a precise definition of corruption in order to ensure the credibility and accuracy of this theory.

1.3.1 Definition of Corruption

Corruption is a multifaceted concept and phenomenon that is understood differently across various eras, regions, and cultures. This diversity in meaning adds

complexity to achieving consensus and measurement in the social sciences, making it a still contentious concept (Kurer 2015). In order to attain the utmost level of conceptual measurement validity, Adcock and Collier (2001) suggest the use of an abstraction ladder that classifies concepts into various levels. The highest level of abstraction is the underlying concept, which delves into the wide-ranging ramifications associated with the notion of corruption.

Traditionally, corruption in Western societies has been associated with the concepts of deterioration or defect, implying that it indicates a failure to achieve its intended purpose or function, leading to a decline from its original state. These broad interpretations have been categorized as corruption. Corruption in political science pertains to the inability of political institutions, decision-makers, and processes to meet their functional and ethical standards (Philp 2015). Defining political corruption, sometimes known as corruption, mostly relies on our comprehension of politics and its operations.

It is crucial to recognize that political systems and structures can have an influence on this process, and they are not consistent worldwide in a globalized society. For example, the interplay between democracy and autocracy, along with diverse cultural norms and values, has a substantial impact. Corruption is not limited to institutions that lack strength. Corruption refers to the actions or attitudes in which individuals use their position, knowledge, or contacts for personal benefit in violation of social norms or the law. This definition provides a fundamental understanding of the underlying notion.

Adcock and Collier's ladder of abstraction indicates that the subsequent stage entails establishing a clear definition of the systematized idea. Prior to exploring the details of conceptualization, it is essential to establish the framework within which the concepts are being used. Goertz classifies concepts into two primary categories: the required and sufficient category and the family resemblance category. In order for a notion to be applicable, it is necessary and sufficient for all defined indications to be present. In contrast, family resemblance concepts include of specific indications, albeit not all of them are required for the concept to be correctly applied (Goertz and Gary 2005). An exemplary instance is the notion of democracy, which can be defined

utilizing either framework. According to Alvarez et al. (1996), democracy can be described using a framework that requires certain signs to be present. These indications include the chief executive being chosen through public election and a change in power under the same electoral norms. A democracy is only recognized as such if all indicators are present. On the other hand, some people use the family resemblance framework to evaluate democracy. Based on this concept, the quality of democracy improves as it attains higher ratings on indicators such as political rights, civil rights, political freedom, and the extent of political competition. The presence of low or zero scores in certain indicators is inconsequential (Goertz and Gary 2005). To better understand the concept of corruption, I will use an approach based on the similarities between different instances of corruption, similar to how family members share certain traits.

Nye was one of the first researchers to provide a systematic definition of corruption. According to Collier and Adcock, a systematized thought is characterized by a distinct definition, which sets it apart from a background concept by being more precise and narrower in scope. Several individuals have utilized and modified Nye's all-encompassing concept as a foundation for their own future conceptions (Kurer 2015). "Corruption is behavior which deviates from the normal duties of a public role because of private-regarding (personal, close family, private clique) pecuniary or status gains; or violates rules against certain types of private-regarding influence" (Nye 1967).

Due to the lack of clarity surrounding the concept of corruption, other definitions have been proposed to elucidate behaviors that diverge from the anticipated responsibilities of public positions. It should be emphasized that this setting does not take into account corruption that occurs between private entities. This thesis specifically examines the public-to-private aspect of corruption, based on the data that is currently accessible.

The legal definition of corruption offers several benefits, such as clear boundaries, ease of operationalization, and straightforward measurement of corrupt acts. However, it has notable drawbacks. Legal definitions are subject to change over time and vary across different regions. Which laws should be applied in such cases? In addition, actions that are not overtly prohibited are not seen as corrupt. For instance, a

government could legalize practices such as bribery, nepotism, and collusion, so making them compliant with legal requirements, even though they are commonly perceived as corrupt actions. Several activities in the banking and finance industry during the 2007 financial crisis were lawful, however they are widely seen as unethical by a significant number of people. The public-interest definition prevails in cases where the legal definition is inadequate, as it encompasses such eventualities. This expanded definition would encompass behaviors like as bribery, nepotism, or collusion, even if they are legally permitted.

However, the notion of public-interest also has its constraints. It presupposes that the societal consequences of corruption are unfavorable, which poses a challenge as several researchers contend that corruption can yield beneficial outcomes. Furthermore, it requires a universally accepted definition of public interest, which is inherently varied and controversial. The existence of diversity is a fundamental factor contributing to the existence of politics.

Although the public's understanding of corruption may seem attractive in terms of democracy, it is criticized for its lack of stability and reliability as a definition. The perception of corruption is subject to significant fluctuations in accordance with changes in public opinion (Kurer 2015). Notably, the majority of combined assessments of corruption are obtained from surveys and interviews conducted with the general people. Nevertheless, current research supports the use of these combined metrics by proposing that the core notion of corruption is widely accepted worldwide. According to the World Values Survey, the majority of countries in its sample strongly disapprove of bribery, with minimal variation.

1.3.2 The types of corruption

Corruption takes on several tangible manifestations. Given the broad and open nature of the systematized concept, this diversity is expected. Often, corruption is discussed in specific terms, such as the transfer of benefits in public projects, electoral fraud, or obtaining benefits through insider trading or the disclosure of sensitive information. These specific actions all fall under the umbrella of corruption because

they represent the misuse of public office for private gain, as outlined by Adcock and Collier's conceptualization ladder.

Tina Søreide contends that corruption may take on several manifestations, often resembling extortion or collusion. She points out that the issue with much of the previous literature on corruption is the assumption that it is a one-dimensional phenomenon. Given the various forms of corruption, the findings of a study can vary depending on which specific act of corruption is being examined (Søreide 2014).

Corruption can take on several forms and can be classified based on kind, which includes a wide range of corrupt behaviors. Bureaucratic corruption, often known as corruption at the public servant or institutional level, is a common occurrence. This include scenarios in which illicit payments are made to facilitate procedures, obtain a competitive edge in acquiring goods or services, or obtain access to services offered by governmental organizations. Corruption of this nature tends to be methodical and foreseeable. This type of corruption bears resemblance to what Karklins referred to as low-level administrative corruption and the act of officials stripping assets for their own benefit (Karklins 2002).

Political corruption refers to the occurrence of corruption among elites, elected officials, or leaders of political institutions. This form of corruption can occur in diverse contexts, which not only undermines procedures but also generates fundamentally corrupt structures. The potential benefits of engaging in political corruption are frequently greater, but they come with an elevated level of risk and uncertainty (Ackerman 2013; Amundsen 1999; Dahlström, Lindvall, and Rothstein 2013). Karklins' third form of corruption, known as state capture, is intricately linked to political corruption. State capture, a concept frequently employed by researchers, commonly arises from political corruption and undermines the core function of the state.

Corruption can be categorized into two distinct types: political corruption and bureaucratic corruption. According to Ackerman (2013), these phenomena can have distinct origins, take place in various environments, and result from different causal processes. Thus, it is logical to infer that their effects are also separate, despite the fact that they both belong within the broader category of corruption. Investors' reactions

would probably vary between a nation with a track record of capricious, corruption-prone political leaders and a nation recognized for widespread bribery within its bureaucracy. Bureaucratic corruption usually manipulates rules within existing frameworks, but political corruption has the ability to fundamentally change the whole system. Part of the debate about the “grease” and “sand” perspectives on corruption and foreign direct investment (FDI) can be clarified by this distinction.

It is worth noting that although the two types of corruption can be differentiated, they typically exist together. Corrupt political leaders in a country often lead to a corrupt bureaucracy system. On the other hand, a corrupt bureaucracy often suggests a greater extent of corruption, particularly if the wrongdoing is deeply ingrained and persists over a long period. Nevertheless, there are instances in which bureaucratic and political corruption manifest autonomously, without suggesting that the entire political elite or bureaucracy is corrupt. Instances of corrupt conduct among bureaucrats can be seen in nations that have high rankings on Transparency International's Corruption Perceptions Index (CPI). Nevertheless, this does not imply that political leaders are inherently corrupt or that individuals may pay bureaucracy in order to obtain building permits. Measuring the differences between the two types of corruption is difficult due to their coexistence, which results in many variables.

1.4 Corruption and FDI

1.4.1 Theoretical research

The relationship between corruption and foreign direct investment (FDI) has been extensively examined in theoretical research. However, a conclusive conclusion on the impact of corruption on FDI has not been reached. Therefore, it is important to differentiate between corruption that has a negative social impact (referred to as the 'grabbing hand') and corruption that may have a positive social impact (referred to as the 'helping hand').

The "Grabbing hand" theory of corruption posits that Corruption can negatively affect economic growth and investment flows by increasing transaction costs and

creating uncertainty (Sekkat, 2007). This theory suggests that corruption diminishes FDI inflows and attracts lower-quality investments. According to a 2008 survey by Transparency International, corruption raised the cost of investing by more than ten percent (Transparency International 2009). High levels of corruption can lead to reduced government revenue, resulting in poor infrastructure, which is unattractive to foreign investors (Egger and Winner 2005). This type of corruption might attract investors who do not necessarily fulfill their obligations. Even if the host economy disapproves of the investor's eventual undesirable economic behavior, the government's ability to act is compromised due to bribes accepted at the beginning of the investment.

China, as one of the world's leading economies, has experienced a substantial increase in foreign direct investment (FDI) inflows, leading UNCTAD to predict it will become the most favored destination for FDI. This phenomenon can be explained by the 'helping hand' theory of corruption. Some scholars suggest that corruption can serve as a "helping hand" by facilitating business operations in the absence of robust legal and regulatory frameworks, thereby achieving Pareto efficiency (Bardhan 1997).Tullock (1996) posits that corruption can stimulate economic growth in emerging markets because bribes supplement low wages, enabling administrations to maintain low tax burdens. Economists like Lui (1985) argue that corruption can act as effective 'lubrication' for rigid economic regulations and bureaucratic red tape. By bribing the host government, multinational corporations (MNCs) can circumvent regulations and red tape, securing significant benefits such as lucrative contracts and advantageous market access that are not achievable through exporting alone. This additional motivation can drive MNCs to engage in FDI. Despite the facilitation of investments through corruption, it is recognized that the resultant investments can still benefit the economy.

1.4.2 Empirical research

In terms of empirical research, previous studies on the impact of corruption on various economic factors have expanded considerably over the past two to three decades. Nevertheless, a lack of studies exploring the different ways in which

corruption interacts with certain economic parameters can still be identified in the existing literature. This is especially true in the study of the relationship between corruption and foreign direct investment (FDI), and there is not much literature and research on the impact of corruption on FDI inflows in the Visegrad countries, thus accentuating the significance of the research in this thesis.

Wei (1999)found that corruption, much like taxes, acts as a deterrent to foreign direct investment (FDI). Drury, Krieckhaus, and Lusztig (2006)explored the impact of corruption on FDI and found that higher corruption levels deter foreign investment, thus hindering economic growth. Their study emphasizes the need for effective anti-corruption measures to foster a conducive environment for FDI and sustainable economic development. Similarly, Abed and Davoodi (2000) observed that in transition economies, corruption significantly reduces FDI. Habib and Zurawicki (2002) suggested that foreign investors generally avoid corrupt environments as they can lead to operational inefficiencies.

In their 2004 study, Voyer and Beamish (2004) examined how corruption affects Japanese foreign direct investment across 59 nations. They found that a lack of robust legal and regulatory systems in emerging economies tends to deter foreign capital inflows. The researchers highlighted the importance of assessing the level of corruption as a critical step for executives considering overseas investments. On the other hand, Larraín B. and Tavares (2004) found that FDI, as part of GDP, is significantly linked to lower corruption levels, regardless of import intensity. The impact of FDI on corruption was found to be quantitatively similar to that of GDP per capita.

Javorcik and Wei (2009) demonstrated empirically that corruption diminishes FDI and shifts ownership structures towards joint ventures. They noted that technologically advanced firms are less inclined to form joint ventures.In their 2009 research, Woo and Heo (2009) investigated the correlation between the degree of corruption and the appeal of foreign direct investment in eight Asian countries that are not members of the OECD over a 20-year period from 1984. Their findings indicated that higher levels of corruption were associated with a diminished appeal for foreign investment. Helmy investigated the effect of corruption on FDI in MENA countries,

finding that a decrease in corruption levels significantly boosts FDI inflows, highlighting the critical role of anti-corruption measures in enhancing foreign investments.

Mauro (1995) concluded that high levels of corruption lead to reduced foreign investment. Denolf (2008) suggested that lower corruption levels enhance FDI inflows, indicating that controlling corruption is essential for boosting FDI. Buchanan (2012) found that the effect of corruption on FDI is significantly negative and strong, supporting the "grabbing hand" hypothesis. Similarly, Zangina and Hassan (2020) explored the relationship between corruption control and FDI inflows in Nigeria, finding that improvements in corruption control significantly encourage FDI inflows in the long run. Their study emphasizes that reducing corruption is crucial for enhancing the attractiveness of Nigeria's business environment for foreign investors. Al-Sadig (2009) confirmed previous findings, showing a negative relationship between corruption levels and foreign investment inflows. Freckleton, Wright, and Craigwell (2012) suggested that corruption is now recognized as a policy variable affecting both social and economic aspects. Habib and Zurawicki (2002) found that foreign companies avoid corruption because it leads to inefficiency. Wright, and Craigwell (2011) indicated that sufficient institutional frameworks are necessary in emerging economies to combat corruption and attract foreign investment.

Conversely, some studies emphasize the type of FDI as a crucial factor in relation to corruption. For example, Brouthers, Gao, and McNicol (2008) distinguished between market-seeking FDI and resource-seeking FDI. Their study revealed that market-seeking FDI is less sensitive to corruption, while resource-seeking FDI is more affected by corruption levels. The study concluded that despite having attractive resources, high corruption levels reduce FDI inflows.

Castro and Nunes (2013) examined the correlation between corruption and FDI inflows in 73 countries over a 10-year period from 1998 in 2013. They find that countries exhibiting lower levels of corruption tend to attract more FDI. The researchers suggest that curbing corruption may be an important strategy for increasing foreign capital inflows. Similarly, Freckleton, Wright, and Craigwell (2012) examined the

impact of corruption on FDI and economic growth across developed and developing countries. Their findings indicate that lower levels of corruption significantly enhance the positive impact of FDI on economic growth, underlining the critical need for anti-corruption measures to maximize FDI benefits.

Belgibayeva and Plekhanov (2019) found that host countries that are better able to curb corruption are more likely to promote investment flows from countries with lower levels of corruption compared to countries with higher corruption rates. They also noted that this shift in investor profiles can further strengthen the political and economic institutions responsible for corruption control.

Gasanova et al. (2017) indicated that nations with lower corruption rates and a more favorable business environment are more likely to attract substantial FDI. Conversely, countries characterized by high levels of corruption and a less compelling economic landscape typically see reduced FDI. Nevertheless, the study acknowledged that there are notable exceptions, such as the BRIC nations, which draw significant FDI inflows despite their high corruption levels, attributed to factors like extensive domestic markets, inexpensive labor, and rich natural resources. Further research by Zeneli (2016) determined that the presence of corruption has a detrimental effect on the appeal of foreign direct investment in the Western Balkans from 1992 to 2012.

Türedi (2018) analyzed the effects of corruption and country risk on FDI inflows in developing countries, finding that higher corruption levels deter FDI significantly, especially in countries with high political and economic risks, highlighting the importance of anti-corruption measures for attracting foreign investments. Daude and Stein (2007) argue that while controlling corruption is important for attracting FDI, the quality of state institutions such as regulatory quality and government effectiveness plays a more significant role in enhancing FDI inflows. Their findings suggest that strong institutions create a stable and predictable environment for investors, which is crucial for attracting foreign investments.

Egger and Winner (2005) argued that corruption is a significant obstacle to FDI in developed countries but not in less developed ones. Teksöz (2006) asserted that while corruption generally negatively affects FDI inflows, corruption related to import/export

licenses can have a significantly positive impact on FDI.

In 2015, Iloie conducted an analysis of the interplay between corruption, FDI, and risk perceptions in the Central and Eastern European regions yet observed no uniform correlation among these factors. Later, in 2008, Denolf concluded that the influence of corruption on foreign direct investment decisions is relatively negligible. The researcher suggested the need for additional studies to explore the effects of legal actions against foreign investors and local corruption levels on their investment choices and business activities.

In an intriguing conclusion, Melo and Quinn (2015) observed that FDI inflows reduce corruption in recipient countries, except for major oil producers. Their study suggests that FDI can contribute to lowering corruption levels, provided the country is not heavily dependent on oil revenues.

Yi et al. (2019) investigated the influence of corruption and institutional factors on foreign direct investment (FDI) at different investment stages, concluding that corruption can act either as an obstacle ("sand") or a facilitator ("grease") for FDI. In 2020, Beloucif conducted a study analyzing the correlation between the levels of corruption and the influx of foreign direct investment in South Asian nations over a period of 12 years from 2002. The research indicated that an increase in FDI is observed when investors view the corruption environment in these countries as conducive to making investments.

In 2019, Ertz and colleagues conducted case studies with professionals from Canadian multinational mining companies in Africa, uncovering that misconduct in business (MIB), particularly bribery, is shaped by personal, corporate, and societal factors. The interplay of these factors indicates the substantial influence of institutional and cultural elements on the prevalence of bribery. Meanwhile, Asghari's (2013) research on the effects of FDI and corruption on environmental health in the Middle East and North Africa (MENA) over a period of 17 years from 1990 corroborated the "pollution haven" theory. This theory posits that industries generating pollution from more advanced countries are increasingly moving to developing countries that have less stringent environmental policies.

In 2021, Hanousek et al. (2021) established a conceptual model for making investments in environments rife with corruption, integrating insights from real options theory and the role of institutions, focusing on private enterprises across 13 European nations over a period of 13 years from 2001. Their findings indicated that both the uncertainty associated with corruption and the extent of corruption itself do not substantially affect the investment activities of multinational enterprise (MNE) subsidiaries. In contrast, when they scrutinized domestic firms, a discernible adverse impact on investment was noted, predominantly attributed to the unpredictability of corruption rather than the severity. Additionally, the research revealed that domestic investments, similar to those of subsidiaries, are swayed not by corruption itself but by the associated financial and legal instabilities.

Krifa-Schneider et al. (2022) applied smooth transition regression and GMM models to a panel of 80 advanced and emerging economies from 2003 to 2019. Their findings indicated that for MNE subsidiaries, corruption uncertainty and corruption levels do not significantly impact investment. However, for domestic companies, investment was negatively affected primarily by corruption uncertainty. Furthermore, the research indicated that the investment decisions of domestic firms, when congruent with those of their subsidiary counterparts, are more significantly influenced by the uncertainties in the financial and legal sectors, as opposed to the direct impact of corruption.

Guenichi and Omri's research from 2024 suggests that a reduction in corruption in advanced economies is associated with an increase in FDI, but only if the level of corruption exceeds a specific threshold. Conversely, in less developed economies, the severity of corruption is deemed less pivotal, as there is a general higher level of acceptance towards it. In another study, Li et al. (2021) scrutinized the correlation between the digital media environment within a host country and the FDI entry tactics of multinational firms. Utilizing FDI figures from Chinese manufacturers during the period 2010 to 2016, their findings indicate that increased freedom in digital media significantly bolsters the inclination towards establishing wholly-owned subsidiaries as an FDI entry strategy. Moreover, the study highlights that this correlation is positively

strengthened by the host country's external efforts to curb corruption.

In 2021, Moustafa (2021) conducted a retrospective analysis of the evolving connection between perceived levels of corruption and foreign direct investment (FDI) in Egypt, over a 50-year period since 1970. Employing a back-casting approach, the research uncovered a correlation between the two, with the positive link being ascribed to the symbiotic relationship between rent-generating assets and the presence of both corruption and foreign capital. The study leveraged FDI figures derived from balance of payments data, underscoring the rise in financial transactions and the phenomenon of phantom FDI.

Some evidence suggests that corruption can facilitate business operations rather than hinder them. Egger and Winner (2005) identified a strong positive correlation between corruption and FDI inflows. Similarly, Hines (1995), using fixed effects estimation, also observed a positive link between FDI levels and corruption. Helmy (2013) found that the impact of the degree of democracy is uncertain and may increase openness and transparency, thereby attracting more FDI.

1.5 Hypotheses

Based on the collection and analysis of the above literature, the hypotheses proposed in this paper are as follows:

1. The corruption perception index (CRP) has a significant positive effect on FDI inflows to V4 countries, i.e., countries with lower levels of corruption tend to have higher FDI inflows.

2 Data and Variables

This chapter will provide a comprehensive review and offer a thorough explanation of the data utilized. The report will present the methodology used to measure the selected variables and evaluate the consistency between the theoretical concepts underlying the measurements and the actual results. Additionally, it will assess the appropriateness of the measurement procedures employed.

2.1 Data source

In this paper we will study the impact of corruption factors on FDI inflows in four countries - Czech Republic, Hungary, Poland, and Slovakia - from 2000 to 2022, for a total of 23 years and 92 observations.

The dataset utilized in this research comprises three distinct databases.1. the United Nations Conference on Trade and Development (UNCTAD) database. The FDI data used in this paper comes from this database.2 The Transparency International database. This is the database from which the core variable of this paper, the corruption perception index, is derived. 3. the World Bank database. It contains most of the variables needed for this paper. The UNCTAD and World Bank databases are used by several scholars in various fields and are considered to be of high quality. And The Transparency International database is one of the most frequently cited databases by scholars in the field of FDI to study corruption factors. Therefore, the data sources for this paper are of high quality and highly reliable.

2.2 Variables

2.2.1 The dependent variable

The main focus of this analysis is the yearly inflow of foreign direct investment (FDI), categorized by nation and year. The study employs data on worldwide foreign direct investment (FDI) inflows into the Czech Republic, Hungary, Poland, and Slovakia from 2000 to 2022. This data has been acquired from the World Bank database. This selection is strategic, as the GDP data for this study is also sourced from the World Bank, which allows for subsequent robustness checks by using FDI inflows as a percentage of GDP. The World Bank, a United Nations entity, is a reputable source frequently cited by experts in this domain.

Both FDI inflows and FDI stock are used interchangeably in academic literature to represent foreign direct investment, though inflow data is predominantly favored. This study prefers FDI inflows due to their direct measurement of a country's

attractiveness to foreign investors. FDI stock data does not offer as comprehensive coverage as inflow data because stock changes depend not only on the investment decisions of multinational enterprises but also on factors like revaluation, reinvested earnings, and write-offs. Therefore, FDI inflow serves as a more precise indicator of investment activity within a specific year, summing up quarterly data to produce an annual figure (Wacker 2013).

The dependent variable in this analysis is measured in millions of US dollars. It is common in literature to apply a logarithmic transformation to FDI (Al-sadig 2009; Busse and Hefeker 2007; Cuervo-Cazurra 2008; Egger and Winner 2005; Gani 2007; Kolstad and Wiig 2013). The rationale behind this is that FDI inflows often contain extreme outliers due to specific circumstances, resulting in a skewed distribution rather than a normal one. Econometric literature recommends log-transforming such variables, and this approach is widely adopted in FDI studies. Therefore, I initially chose to log-transform the dependent variable.

Nevertheless, this effort faced substantial obstacles. From a mathematical standpoint, it is not feasible to apply a logarithmic transformation on negative numbers. Regarding the inflow of foreign direct investment (FDI), it is worth noting that there might be extreme values that deviate significantly from the average, and these values can be either exceptionally high or exceptionally low. FDI inflows experience a decline in situations characterized by significant events such as wars, civil conflicts, or financial crises. Significant negative numbers may also suggest the occurrence of business sector restructuring. Therefore, these figures cannot be read immediately. Within the scope of my research, there are a total of 92 instances where values are negative out of the observations made between the years 2000 and 2022. Specifically, there are six observations that fall into this category. In order to prevent the loss of these observations, the study preserves the original values instead of applying a logarithmic transformation on them.

2.2.2 The independent variable

This section describes the measures used for the core and control variables in this thesis, as well as their sources and rationale.

2.2.2.1 Corruption

Probing into corruption within nations poses considerable difficulties because of its clandestine essence, which complicates the process of pinpointing the individuals responsible for causing substantial damage to the nation. Individuals involved in corrupt practices aim to keep their activities hidden to avoid legal prosecution and societal condemnation. Often, these corrupt individuals are influential members of society who take measures to avoid detection and prosecution. Corruption measurement models are largely based on the perceptions of specific population groups regarding the prevalence of corruption within their society. While these models are not entirely precise, they still provide a useful indication of corruption levels.

This paper will employ the Corruption Perceptions Index (abbreviated as CRP to avoid confusion with the Consumer Price Index, which will also be discussed in this paper) to evaluate corruption among government officials and politicians. The CRP, developed and published by Transparency International, gathers data from various sources and independent organizations. To be included, specific methodological criteria must be met: surveys must measure "overall levels of corruption," In order to assess a country, it is necessary to analyze it based on a minimum of three separate surveys. Each survey should be carried out in several countries, using a standardized technique. The CRP generates a score ranging from 0 to 100, where 100 signifies no corruption and 0 indicates a completely corrupt society. These indicators are updated annually, making them suitable for use in academic research.

It is significant to be aware that several other corruption measures are available in the literature.

The Control of Corruption (CoC) is an index that is part of the Worldwide Governance Indicators dataset published by the World Bank. This corruption metric was partially created in reaction to criticisms of the CRP. The CoC, similar to the CRP,

can be characterized as a compilation of multiple surveys, and both indexes share a multitude of sub-indices. Nevertheless, the CoC asserts that it offers superior measurements, including a broader spectrum of corruption variances. The CoC, or Control of Corruption, is specifically crafted to assess the "perceptions of the degree to which public power is utilized for personal benefit, encompassing both minor and major manifestations of corruption". This fits with the concept of corruption employed in this particular study. Its increased emphasis on minor misconduct is what allegedly makes it a superior indicator of corruption.

The Global Corruption Barometer (GCB) is a study done by Transparency International that has a wider range of topics than the CRP. The survey queries participants regarding their present and past perspectives on corruption, their opinions on patterns, the probability of bribery, and accomplishes this by scrutinizing certain establishments. The GCB, in contrast to the CRP, is a specific survey conducted directly by different chapters of Transparency International, rather than combining several surveys. Although the GCB and the CRP have a similar understanding of corruption because they both originated from Transparency International, the GCB's measurements are consistent with the definition of corruption used in this work (Transparency International, D 2016). Nevertheless, the GCB's methodology and scope have undergone substantial modifications since its establishment in 2003, making it difficult to compare data over time.

Institutional Profiles is a state-funded institution specializing in development. Initially conceived as a research endeavor to assist in the formulation of policies for the French government, it subsequently transformed into a project that yielded outcomes that were accessible to the general public. The database is constructed by aggregating data from a survey in which experts and citizens evaluate the institutions of their country. The survey has been done in four rounds, with published data available for the years 2001, 2006, 2009, and 2012. It covers 51 base nations and represents 80% of the world's Gross Domestic Product (GDP). Transparency International has employed this data, so confirming the database's reliability. The database is valuable since it collects perceptions on two distinct forms of corruption—political and bureaucratic—that are

in line with the conceptual framework of corruption in this study. This allows for the examination of a substantial hypothesis concerning the influence of various forms of corruption. The data from these four papers were compiled manually, creating panel data, which was then merged with two additional datasets.

However, the Corruption Perceptions Index (CPI) is still used in this paper mainly because, apart from special requests, the CRP is still the most dominant indicator used to measure the level of corruption.

Besides, there are limitations in the measures of corruption levels.

Perception-based surveys and expert interviews have been the main approach for assessing corruption since the 1990s. The CRP, GCB, IPD, and CoC utilize perception-based methodologies as the foundation for their major indices. However, these methods have been heavily criticized since they have intrinsic inherent prejudice and are not sufficient to be reliable measures of actual levels of corruption (P. Heywood 2015). Several experts observe that the aggregating techniques used in these two indices, which were designed to reduce bias, rather amplify it. Contrary to Kaufmann's assertion of random errors, P. Heywood in 2015 that these faults are in fact systematic. Furthermore, the perception of corruption sometimes arises from a nation's previous record of corruption rather than its current levels. This occurs due to individuals' inherent memory bias, which can lead to the development of cynicism. Contributing to relevant policy making by measuring corruption is a major dilemma (Rose 2014). Also, inaccurate measurement of these data can lead to bias in linear regression.

Some may argue that multinational corporations' ability to observe reality is similar to that of ordinary individuals. Consequently, their decisions could be influenced by the same flawed measures of corruption that affect the general public's perception, rather than by actual corruption levels. From a post-positivistic ontological perspective, this assumption is not entirely unrealistic (Guba, Lincoln, and others 1994). People's perceptions of the world are imperfect, and the reality they perceive is shaped by various factors, including published corruption measures and results. When using perception-based data to estimate the impact on decision-making, such as cross-country investment decisions, this data might not be as flawed as it seems. However, it is crucial

to acknowledge that corruption measures can have systematic bias, and this must be considered when interpreting the results.

To address the criticism of perception-based corruption data, one of the main solutions is to develop more refined indices. However, this task is highly complex and can give rise to further objections surrounding the selection process. An alternative approach involves constructing an index that relies on documented instances of corruption. However, it is important to acknowledge that this method may be subject to bias, as corruption is frequently concealed and not generally considered illegal. Alternatively, one could opt to perform qualitative investigations, which would involve sacrificing generalizability in favor of validity (P. Heywood 2015). Therefore, there is no universally applicable method for quantifying corruption, although reaching agreement on the definition would undoubtedly be advantageous.

2.2.3 Control variables

Aside from the previously mentioned dependent and core factors, this paper will use the following control variables: Market size, Labor cost, Trade openness, Infrastructure, Skilled labor, Macroeconomic stability and Research & Technology. technology.

2.2.3.1 Market size

In this paper, market size is expressed in terms of GDP per capita and denoted by the abbreviation GDP.

Using GDP per capita to represent market size in empirical analyses of Foreign Direct Investment (FDI) has distinct advantages over using total GDP.

GDP per capita serves as a metric for gauging the mean income earned by individuals in a nation, offering a more precise measure of the populace's economic capacity to purchase goods and the latent market capacity that is attractive to international investors.This metric is particularly useful in assessing the economic environment and understanding the potential for demand-driven growth.

Research highlights that GDP per capita is a more accurate proxy for market size when evaluating FDI determinants. It captures the economic well-being and spending

capacity of the population, offering a nuanced view that total GDP might obscure. For instance, Chowdhury and Arthanari (2016) emphasize that rising GDP per capita signals market expansion and increased purchasing power, making it an attractive metric for investors assessing market potential in India . Additionally, Economou et al. (2017) demonstrate that GDP per capita provides insights into individual economic conditions and market attractiveness, particularly in large countries with significant income disparities .

By considering income distribution and economic disparities, GDP per capita offers a more detailed understanding of market conditions, making it a preferred metric in many FDI studies.

2.2.3.2 Labor cost

In this paper, the total labor is used to denote labor cost and is denoted by the abbreviation LC.

Using the total labor force as a proxy for labor cost in empirical analyses of Foreign Direct Investment (FDI) can be justified by its reflection of the labor market's availability and potential supply. This approach captures the broader context of labor availability, which is crucial for labor-intensive industries. Studies have shown that a large labor force can signal lower average labor costs due to increased competition for jobs among workers, attracting FDI by ensuring that multinational enterprises have access to a sufficient and potentially cost-effective labor pool.

For example, a study by Dang and Nguyen (2021) on FDI inflows into Vietnam identified unit labor cost as a significant factor affecting FDI, indicating that labor cost considerations are crucial for foreign investors. Countries with larger labor forces could attract more FDI due to the availability of labor resources, which is a critical determinant for foreign firms when deciding on investment locations. Additionally, Kheng, Sun, and Anwar (2017) supported the importance of labor market variables, including the total labor force, in influencing FDI inflows into developing countries.

These studies collectively underscore that using the total labor force as a proxy for labor cost is a reasonable and empirically supported method in FDI research.

2.2.3.3 Trade openness

Trade openness (OPEN) is a calculated indicator, specifically based on a country's total exports and imports of goods and services divided by its GDP.

Using the ratio of a country's total trade (sum of exports and imports of goods and services) to its GDP as a measure of trade openness is widely accepted in empirical research. This ratio effectively captures the degree to which a country engages in international trade relative to the size of its economy.

Trade openness, measured as total trade over GDP, is beneficial for several reasons. It provides a standardized way to compare trade integration across countries of different sizes and economic structures. Higher ratios indicate a greater reliance on international trade, which is often associated with economic benefits such as increased efficiency, access to a larger market, and enhanced competition. This measure is commonly used in studies to assess the impact of trade policies and economic openness on various economic outcomes, including FDI.

For instance, the World Bank and OECD use this ratio to compile international trade data and analyze global economic integration trends. The metric is recognized for its simplicity and ability to reflect the overall trade policy environment and economic openness of a country. Studies have shown that countries with higher trade-to-GDP ratios tend to attract more FDI due to the perceived stability and openness of their economies.

2.2.3.4 Infrastructure

Expressing the Infrastructure （INFRA） variable in terms of the number of post-paid subscribers (per 100 people) for the fixed-line and mobile phones is a frequently used method in empirical analyses.

This measure captures the extent of communication infrastructure, which is crucial for business operations and overall economic development.

The rationale for using these metrics is that they provide a quantifiable indicator of a country's telecommunication capacity and connectivity. Higher numbers of fixed and mobile subscriptions indicate better infrastructure, facilitating communication,

reducing transaction costs, and improving the efficiency of business operations. This is particularly important for foreign investors who seek reliable and extensive communication networks to support their activities.

Studies have shown that robust communication infrastructure positively impacts FDI. For instance, research by Farhadi, Ismail, and Fooladi (2012) found that information and communication technology (ICT) infrastructure, including mobile and fixed telephone subscriptions, significantly influences economic growth and FDI inflows. Similarly, a study by the International Telecommunication Union (ITU) highlighted that regions with higher mobile and fixed-line penetration rates tend to attract more foreign investment due to better connectivity and operational efficiency.

By using the number of fixed telephone and mobile subscriptions per 100 people, researchers can effectively gauge a country's infrastructure quality, providing a reliable proxy for analyzing its impact on FDI.

2.2.3.5 Skilled labor

In this paper, the tertiary enrolment rate has been chosen to replace the percentage of population ages 25 and over that attained or completed Bachelor's or equivalent. as a measure of the skilled labor （EDU) variable. The tertiary enrolment rate had to be used mainly because of the large number of missing data for the latter in the World Bank database, which seriously compromised the completeness of the data.

Barro and Lee (2013) highlight the importance of educational attainment and its direct impact on economic growth and productivity, which are critical factors for attracting FDI. They argue that the tertiary enrolment rate effectively indicate the development of a skilled workforce, making it a reliable proxy when specific attainment data is unavailable. Additionally, Campos and Kinoshita (2002) support using enrollment rates as they reflect a country's commitment to investing in human capital, which is essential for fostering a skilled labor force and enhancing economic performance.

Similarly, the World Bank frequently utilizes the tertiary enrolment rate in its analyses to assess the educational quality and labor market potential of different

countries. This approach provides a forward-looking indicator of the potential availability of skilled labor, which is crucial for multinational companies making investment decisions.

In summary, the tertiary enrolment rate serves as a valid and practical proxy for skilled labor in FDI studies due to their correlation with future skilled labor availability and overall economic growth.

2.2.3.6 Macroeconomic stability

In this paper consumer price index (CPI) will be used to measure Macroeconomic stability (MS) variable. it is an informed approach.

CPI reflects changes in the general price level of goods and services over time, providing a clear indicator of price stability or volatility, which is critical for investors assessing the economic environment of a potential host country.

Price stability, as indicated by CPI, is a crucial factor for FDI because high and unpredictable inflation rates can erode the value of returns on investment and increase the cost of doing business. Investors prefer stable macroeconomic environments where inflation is controlled, as this stability reduces uncertainty and risks associated with long-term investments. Research has consistently shown that lower and stable inflation, as measured by CPI, is associated with higher FDI inflows. For instance, studies by Hassan (2022) and Saini and Singhania (2018) have demonstrated the negative impact of high inflation on FDI, reinforcing the importance of CPI as a proxy for macroeconomic stability.

In summary, using CPI to measure macroeconomic stability provides a reliable and accessible way to gauge the economic environment's predictability and attractiveness for foreign investors, making it a standard practice in FDI research.

2.2.3.7 Research & technology

Research & development expenditure as a percentage of GDP will be used to measure the research & technology (RT) variable in this paper

This metric is widely recognized for capturing the intensity of a country’s investment in innovation and technological advancement.

R&D expenditure as a percentage of GDP reflects the financial commitment of a nation to research and innovation activities. High levels of R&D spending indicate robust innovation ecosystems, which can enhance productivity and economic growth. This, in turn, makes the country more attractive to foreign investors looking for innovative environments and cutting-edge technologies.

According to the OECD, investment in research and development (R&D) plays an essential role in propelling technological advancements and stimulating economic expansion. The OECD's Frascati Manual defines R&D as creative work undertaken systematically to increase the stock of knowledge and devise new applications, covering basic research, applied research, and experimental development. This comprehensive definition underscores the importance of R&D in fostering innovation and supporting economic development.

Furthermore, studies have shown a positive correlation between R&D intensity and FDI inflows. For example, research by Boschma (2015) highlights that regions with higher R&D investments experience significant productivity gains and are more likely to attract foreign investment due to the availability of advanced technologies and a skilled workforce.

In summary, R&D expenditure as a percentage of GDP is a robust and reliable indicator of a country's research and technological capabilities, providing valuable insights for FDI studies.

3 Methodology

This chapter will describe and discuss the regression methods, data types, and estimation techniques used in this paper.

3.1 The linear regression

Linear regression models seek to identify the optimal fit for a line that characterizes variations in a target variable by utilizing a collection of explanatory variables. However, merely determining the most suitable linear line from the data is

usually inadequate. The objective is to deduce conclusions from the sample that can be applied to a larger population or cosmos. This necessitates establishing a basic correlation between the variables of interest, rather than relying on a historical or context-specific happenstance. Regression analysis depends on statistical theory to allow for the generalization of findings, provided that the results are correct. The essential base of a model often consists of the following information:

$$\gamma = \beta_1 + \beta_2 X_2 + \cdots + \beta_K X_K + \varepsilon \qquad (1)$$

Equation 1 establishes the correlation between the reliant variable γ and the autonomous variables X. The variable γ is considered the dependent variable, while β1 represents the intercept term or the constant value of γ. The other β's represent the coefficients of the independent variables X, which are speculated to account for the variations seen in γ. The symbol ε denotes the error, which includes any deviations in γ that are not accounted for by the independent variables included in the analysis. For this model to be meaningful beyond the sample data, certain statistical theory assumptions must be met. If these assumptions hold, the results can be generalized to the broader population from which the sample is drawn. These assumptions also confer desirable properties to the regression model, specifically the Best Linear Unbiased Estimates (BLUE) (Gujarati 2021). Econometrics texts often distinguish between parameters, symbolized by β, and estimators, denoted by b. In this thesis, unless specified otherwise, equations and symbols used represent the estimator.

The initial assumption is that the parameters of the model are linear. However, if the actual connection between Y and X in the population is nonlinear, employing the coefficients (β) from a linear regression model will not be sufficient to precisely capture the relationship between Y and X. Consequently, it is crucial to ensure that the model is correctly formulated (Gujarati 2021). Model misspecification can occur through various means, such as the omission of a pertinent variable, the inclusion of an irrelevant variable, the use of an improper functional form, or flaws in the measurement process.

With respect to the model employed in this thesis, it is crucial to recognize and mitigate any evident flaws, if feasible. While the estimation incorporates the frequently

utilized factors for explaining FDI, there is a considerable likelihood that several pertinent variables have been omitted. The presence of a correlation between the deleted relevant variables and the estimators (β) can cause the estimators to be skewed, resulting in omitted variable bias and unobserved heterogeneity. Although the omitted variable may not have any association with the other independent variables, it can still have an impact on the variability in the estimation. The probability of Type II errors increases due to inflated standard errors. (Gujarati 2021). The chosen variables for this estimation have robust theoretical and empirical basis, as previously stated. They possess significant theoretical value in the field of Foreign Direct Investment (FDI) and have been leveraged in prior research, which has produced significant findings. Therefore, there is no reason to believe that the model is influenced by the interference of unrelated variables. Furthermore, the vast majority of control variables consistently retain their relevance across most models.

Regarding measurement inaccuracies, the model faces difficulties due to certain specific elements. These issues have been previously discussed in relation to the variables being studied. The variables most prone to errors are those derived from subjective data sources, such as perceptions of corruption, expert assessments, and survey responses regarding the quality of institutions, which are susceptible to inaccuracies or may harbor systematic biases. Moreover, any measurement inconsistencies can be ascribed to the error component, potentially creating a spurious correlation with the independent variable. This challenge is prevalent in the domain of social science research and warrants careful attention when interpreting coefficients and making inferences. Errors in measurement can distort the estimates, as they do not accurately reflect the actual population characteristics. Additionally, the dataset exhibits a considerable number of missing entries for various variables. Such a challenge is common when working with large datasets, especially those compiled from diverse sources.

The second assumption is that the independent variables (X) have no association with the error component, ε. Reliably estimating unbiased coefficients becomes impractical when the independent variable is correlated with the error term.

$$E(X_K, \varepsilon) = 0$$

They are commonly known as exogenous when the independent variables are unrelated to the error term. Conversely, they are called endogenous when they are connected to the error term. Endogeneity, as described in the field of econometrics, pertains to a situation in which the independent variables are linked with the error term and consequently, with the dependent variable (Wooldridge 2010). According to Bell and Jones (2015), a number of political scientists have established a direct connection between endogeneity and the concepts of reverse causality and simultaneity. Hence, in all subsequent sections of this thesis, econometric concerns are denoted by their most explicit designations (such as unobserved heterogeneity, measurement error) rather than being identified as types of endogeneity. The primary difficulties addressed in this study are unobserved heterogeneity, measurement error, and simultaneity, which are of particular significance and relevance to the studies conducted.

Unobserved heterogeneity refers to any relevant variable that is not accounted for in the model. These variables are considered part of the error term, denoted as ε, which is calculated as the difference between the parameter γ and the estimated γ. This can lead to the problem of unobserved heterogeneity, which in turn can cause biased estimators. Unobserved heterogeneity is a prominent subject of discourse due to its considerable ramifications for the estimating technique. Typical approaches to address this issue involve utilizing a fixed effects model or applying instrumental variables (Wooldridge 2010).

A measurement discrepancy arises when crucial details that are instrumental in accounting for the dependent variable are omitted from the measurement of a variable. Here, the omitted details are regarded as an element of the error term. If the omitted data correlates with the variable that has been inaccurately measured, the independent variable included in the model will show a correlation with the error term (Wooldridge 2010).

The normal distribution of the error term is the third prerequisite for optimal linear unbiased estimation, i.e., the expected mean of the error term ε is equal to zero. When this condition is not satisfied, it can lead to bias in the calculation of standard errors

$$E(\varepsilon) = 0$$

The error term being homoscedastic is the fourth prerequisite for optimal linear unbiased estimation. When this condition is met, it means that the distribution of the variance of all observations is symmetrical with the mean as the axis of symmetry. (Gujarati 2021).

$$\text{var}(\varepsilon_i) = \sigma^2$$

Heteroscedasticity is a commonly seen phenomenon in cross-sectional data, as widely recognized in the field of econometrics. When examining the impact of personal disposable income on saves behavior, it is not reasonable to expect that individuals with different levels of wealth will have the same degree of variation in their savings. Affluent persons have the capacity to save a greater amount, leading to increased variability, whereas less affluent individuals would encounter greater challenges in saving (Gujarati 2021). Heteroscedasticity frequently occurs when using countries as the unit of measurement, primarily due to variations in scale. For example, the disparity in GDP between the US and Norway is primarily due to the US having a far larger economy. Various approaches can be employed to tackle heteroscedasticity. An effective strategy involves employing methods that enable a variance-stabilizing transformation, such as weighted least squares. Another approach involves applying a logarithmic transformation on the variable in question.

Assumption number five asserts that there should be no autocorrelation between the error terms of different observations. This implies that there should be no dependency or structural relationship between the values of a given variable across time and space.

$$\text{cov}(\varepsilon_i, \varepsilon_j) = 0$$

Where “i” and “j” indicate two different observations on the same unit.

Heteroscedasticity is a typical occurrence in cross-sectional data, but autocorrelation is frequently observed in time series data. This is a reasonable conclusion considering the characteristics of time series measurements. For example, if there is no correlation between two GDP observations, it would mean that GDP might

have any number, rather than indicating a percentage change from the prior observation. Usually, changes in GDP are affected by the previous number with a specific percentage increase, showing a strong connection between these changes and their associated errors. The phenomenon is commonly known as inertia or sluggishness (Gujarati 2021). Autocorrelation, like heteroscedasticity, causes estimators to be inefficient, resulting in biased estimates that can be either negative or positive. This leads to incorrect standard errors and t-scores (Gujarati 2021). Differential modeling can be used to deal with autocorrelation. It centers on changing the variables to eliminate the correlation between the values of the variables. One way to solve the autocorrelation problem is to change the variables to eliminate the correlation between their values. Typically, these transformations entail determining the relationship between a value and its previous value and then removing that effect. Another approach is the use of robust standard errors, which are designed to address heteroskedasticity and autocorrelation (Gujarati 2021).

Stationarity may become an issue to be dealt with in panel data with time dimension. A time series is considered stationary when its statistical properties such as the mean, variance, and autocorrelation are stable over time. Once there is a trend in the series, it indicates a non-stationarity, which leads to a class of errors.(Gujarati 2021).

The ultimate assumption is the lack of multicollinearity. Collinearity pertains to the degree to which specific variables capture the identical variance. The presence of a strong collinearity significantly impacts the estimators, resulting in elevated standard errors. Moreover, it leads to significant multicollinearity when the independent variables interact with each other.

High levels of multicollinearity elevate the probability of making a type two error (Gujarati 2021). This implies that a crucial factor, which greatly accounts for the variation in the outcome variable, may lose its significance because it is highly correlated with another independent factor, even if both factors are of substantial importance. The Variance Inflation Factor (VIF) test should be used to assess multicollinearity. Although there is no precise economic guideline that establishes a specific tolerance threshold for VIF values, it is generally considered worrisome when

the VIF number reaches or exceeds 10. Nevertheless, if the VIF test reveals a high degree of multicollinearity and the results continue to show statistical significance, it is still advisable to have confidence in these findings. O'Brien (2007) asserts that if the Variance Inflation Factor (VIF) surpasses 20 and the results remain statistically significant, the slight disparity in variance between the two variables must be of great significance and should not be disregarded.

When all preconditions are met, it is possible to calculate the standard error of the estimator. These estimators will be Best Linear Unbiased Estimators (BLUE), which will enable accurate hypothesis testing. Hypothesis testing yields outcomes that determine the extent to which the conclusions derived from a sample can be reasonably generalized to the broader population (Gujarati 2021).

3.2 Panel data

Incorporating a time dimension is beneficial for accurately assessing the influence of corruption on the inflow of foreign direct investment (FDI). This enables the examination of the impacts of alterations in variables over a period of time. Hence, employing time series cross-sectional data, also known as panel data, is suitable. Verbeek (2017) states that panel data allows for the development of more advanced and realistic models compared to models based only on cross-sectional or time series data. Comparative political economics and political science have seen a rise in the usage of this data type, making it the most often employed one (Beck and Katz 2011). Panel data possess certain advantages, including enhanced explanatory capability and a larger number of observations. However, they also pose special issues that are associated with the main assumptions mentioned earlier.

Panel data allows for a substantial increase in observations, as it enables the observation of one unit across many time periods. The total number of observations will be equal to the product of the number of units (n) and the number of time periods (T). For example, if the analysis encompasses one hundred countries over a span of ten years, the total number of observations would amount to one thousand, rather than just

one hundred or ten. In regression analysis, often a larger sample size allows for more accurate regression results. Panel data analysis enables the investigation of the impact of variables at several time points, so mitigating the possibility of reverse causality. This approach yields more reliable outcomes and reduces the chances of erroneous correlations. In addition, panel data provides a more extensive and accurate depiction of the reality being assessed by encompassing both time and space dimensions. Nevertheless, the most significant advantage of panel data is its capacity to account for unobserved variability. It contradicts the basic premise that the independent variable is independent of the error term when there is unobserved heterogeneity.(Verbeek 2017).

Fixed and random effects play an important role in addressing unobserved heterogeneity in panel data.

$$\gamma_{it} = \beta_1 + \beta_2 X_{2it} + \cdots + \beta_K X_{Kit} + \varepsilon_{it} \qquad (2)$$

$$\varepsilon_{it} = \mu_{it} + \alpha_i \qquad (3)$$

Where i represents the cross-sectional observations and t represents the time-series observations. The error component μ_{it} is the stochastic error term. The error component α_i accounts for unit-specific unobserved variance that remains constant over time. Independent or explanatory variables frequently exhibit a certain level of correlation with other independent variables. Unobserved heterogeneity emerges when a variable that is not included in the model is connected with another variable that is included. This phenomenon arises due to the fact that the unaccounted-for factor's influence is incorporated into the residual term, which is not expected to have any correlation with the included independent variable.

As a result, estimates are subject to biased and inconsistent results due to the inability to distinguish between the effects of the error term and the effects of the dependent variable of interest. Bell and Jones (2015) contend that the use of fixed and random effects may effectively tackle the problem of unobserved heterogeneity by grouping and sub-timing, hence fulfilling the necessary assumptions.

3.3 Fixed effects and random effects

Due to its simplicity and excellent controls, the fixed effect model is commonly considered the benchmark for researchers utilizing econometrics, frequently referred to as the gold standard. By generating individual group unit intercepts, each country, such as Czech, Hungary, Poland and Slovak, will have its own intercept. These specific intercepts capture all the group-specific variation that is constant, thereby controlling for any unobserved group-specific variables and effects that influence the dependent variable and the included independent variables, if present in the error term. Thus, the equation becomes:

$$\gamma_{it} = \beta_1 + \beta_2 X_{2it} + \cdots + \beta_K X_{Kit} + \varepsilon_{it} \qquad (4)$$

$$\varepsilon_{it} = (\mu_{it}) \qquad (5)$$

It solves for each group-specific intercept α_i by fixed-effects estimation. Therefore, we derive a "within effects" estimate, which only takes into account the effects that are not distinctive to a particular group and remain constant, but fluctuate within a group over time (Wooldridge 2010). In a fixed effect regression, a variable that is time-invariant (meaning it does not change over time but changes between groups) will be excluded from the model if it is theoretically significant for the study. This is because the variable is specific to certain groups and does not vary over time. This strategy has clear trade-offs. Furthermore, if there is a bias resulting from unobserved heterogeneity induced by the exclusion of certain factors that account for within-group effects and are incorporated into the error term, the application of fixed effects does not resolve this issue (Bell and Jones 2015).

By retaining variables in the random effects model, the model incorporates more information, enhancing its capacity to make generalizations and improving the validity and accuracy of the model and its coefficients. This enables a broader spectrum of components to clarify occurrences. The citation "Bell and Jones 2015" refers to a publication by Bell and Jones (2015) in the year 2015. But random effects (RE) models are not sufficient to effectively manage unobserved variability between and within

groups. Random effects models presuppose that between-group effects are random, which may not always be true because countries are often individual and unique. Thus, the presence of unobserved heterogeneity is a major concern when using random effects estimation. Furthermore, the aggregated error terms can show clear patterns of autocorrelation or interdependence. This problem can be solved by generalized least squares (GLS). Estimating generalized least squares (GLS) requires knowledge of the actual variance in the population, which cannot be determined from the sample alone. Feasible generalized least squares (FGLS) is employed by incorporating supplementary assumptions. If these assumptions are valid in the sample and are verified through statistical tests, the aggregate will possess unbiased and efficient random effects coefficients that elucidate the variability of a variable (Verbeek 2017). The RE estimator incorporates both the within-group and between-group variances, resulting in a coefficient for a variable that represents the overall or "net" effect. The between and within components can vary greatly, emphasizing the significance of distinguishing between the within and between impacts unless a net effect is explicitly desired. In such instances, utilizing random effects can yield an appropriate estimation. However, it is still vulnerable to unobserved heterogeneity at the group level due to the omission of certain variables.

Hausman devised a test to assess the correlation between X_{2it} and a_i in order to determine whether fixed effects or random effects estimation should be used. The test is designed to determine whether the hypothesis that a_i is uncorrelated with the dependent variable and thus avoids heterogeneity bias holds. If the hypothesis does not hold, the test indicates that the fixed effects estimate is more reliable since it is not affected by the correlation between X_{2it} and a_i. The null and alternative hypotheses are therefore shown below:

$$H_0: Cov(a_i|X_{2it}) = 0 \qquad H_1: Cov(a_i|X_{2it}) \neq 0$$

If the null hypothesis is valid and there is no heterogeneity bias caused by a_i, the estimators for the random and fixed effects models will exhibit similarity. Nevertheless, in the presence of heterogeneity bias, the estimators will vary, hence requiring the null hypothesis to be rejected. It is crucial to acknowledge that additional specification

concerns and measurement error, can also result in the null hypothesis being rejected.

Finalizing the choice between fixed or random effects relies on more than just the Hausman test. Also, the test will become meaningless if both estimates are to be used.(Bell and Jones 2015). The distinction between fixed effects and group-specific factors is vital because it allows us to consider significant variance and potentially valuable information that would otherwise be missed. This leads to a deprivation of potentially significant information, especially when characteristics peculiar to a particular group or variants are crucial in elucidating the dependent variable (Bell and Jones 2015). In addition, a variable is much less effective in explaining the dependent variable if its change is primarily due to between-group differences.

Verbeek's (2017)proposal advocates utilizing a random effects model to split the variable into two parts representing the within-group variance and the between-group variance. This allows for more accurate estimation, especially when the focus is not exclusively on within-, between-group, or net effects, but simply maintains the significance of the statistical results. There is no need to attempt to combine these two effects into a single coefficient. Bell and Jones (2015) claim to have addressed the problem of bias due to heterogeneity in their study with a random effects model.

Verbeek describes this method of estimation, which involves using panel data as internal instruments for endogenous regressors, as an internal instrumental approach. Verbeek (2017) argues that by transforming the original variables in a model, it is possible to make them unrelated to the error term but still connected to the explanatory variables. This eliminates the requirement for external instruments. According to Verbeek and Wooldridge (2017, 2010), the instrumental variables technique is highly effective in correcting bias. However, it is difficult to discover an exogenous variable that may be used as an instrument. As a result, a suitable instrumental variable often requires a great deal of experimentation and checking during the actual research process.

Therefore, the estimation would be:

$$\gamma_{it} = \beta_1 + \beta_2(X_{it} - \overline{X}_\iota) + \beta_3\overline{X}_\iota + \varepsilon_{it} \qquad (6)$$

In equation 4, $\beta_2(X_{it} - \overline{X}_\iota)$ represents a variable with within effects that vary over

time (indicated by it), and $\beta_3\overline{X}_i$represents a variable with between or constant unit-specific effects (indicated by only i). These variables will not be biased by unobserved heterogeneity from the group-specific effects because the group means of the variables themselves are used as instruments. This enables the estimate of data in a secure manner, while yet taking into account the variation peculiar to each group (Verbeek 2017). Bell and Jones (2015) describe this as the act of explicitly representing the diversity or variation inside a system.

4 Results

4.1 empirical specification

Based on the analysis in the previous chapter, the baseline regression in this paper can be written as the following specification:

$$Y_{it} = \alpha + \beta X_{it} + \delta Z_{it} + \varepsilon_{it} \qquad (7)$$

where Y_{it} is the amount of FDI inflows to country i in year t; X_{it} is the level of perceived corruption; $Z_{it}$is a set of control variables including: market size, labour size, trade openness, infrastructure, skilled labour, macroeconomic stability and research & technology; ε_{it}denotes the error term

In order to explore the impact of corruption factors on foreign direct investment (FDI) inflows more deeply, this paper will add individual fixed effects and time fixed effects to the basic panel data linear regression model. This approach will significantly improve the accuracy and explanatory power of the model.

$$Y_{it} = \alpha + \gamma_i + \lambda_t + \beta X_{it} + \delta Z_{it} + \varepsilon_{it} \qquad (8)$$

where $\gamma_i$denotes the fixed effect of country i for controlling for individual traits that do not vary over time, and λ_t denotes the time fixed effect for controlling for temporal traits that do not vary over time with the individual.

First, individual fixed effects can control for heterogeneous factors that do not change over time and are specific to each country or region. These factors may include countries' geographic locations, legal systems, cultural traits, and levels of economic

development over time. For example, Treisman (2000) notes that geographic location and cultural traits have a significant effect on the level of corruption, and that these factors are relatively stable in the short run. By introducing individual fixed effects, we can effectively isolate the impact of these factors and thus more accurately estimate the net effect of corruption factors on FDI inflows. In addition, Rose-Ackerman (2016) emphasizes that there are significant differences in attracting FDI across countries' legal systems and levels of economic development, and by controlling for these individual traits that do not vary over time, the accuracy of the model will be improved.

Second, time fixed effects can control for heterogeneous factors that do not vary with individuals and are specific to individual points in time. These factors may include the global economic cycle, changes in the international political situation, global economic policy adjustments, and general technological advances. For example, Campos and Kinoshita (2002) found that changes in the global economic cycle and international political situation have a significant impact on FDI flows. These time-specific factors affect the FDI inflows of all countries or regions at the same point in time, and by introducing time fixed effects, the impact of these factors can be effectively isolated, thus providing a clearer view of the role of corruption factors on FDI inflows at different times. Rodrik (1998) further points out that global economic policy adjustments and technological advances are also important influences on FDI inflows factors, and controlling for these factors through time-fixed effects can improve the explanatory power and robustness of the results.

By introducing individual fixed effects and time fixed effects into the model, we are able to control unobserved heterogeneity factors more effectively and improve the accuracy of the model. This approach not only identifies more accurately the true impact of corruption factors on FDI inflows, but also improves the robustness and credibility of the results, providing a more reliable empirical basis for policy formulation.

4.2 Descriptive statistics

The descriptive statistics of this paper are shown in table1. It is clear from table1 that this is a balanced panel data with a total of 92 observations. There are no missing observations for each variable. Balanced panel data has significant advantages in panel data regression analysis. First, balanced panel data makes the estimates more reliable because each individual has observations at each time period, reducing the problem of bias and imprecise estimates due to missing data. Second, balanced panel data simplifies the computation and interpretation of the model, avoids complex interpolation and extrapolation methods, and improves the stability and consistency of the model. In addition, balanced panel data are easier to analyze with dynamic panel data, which can better capture the dynamics of time effects and individual effects. Baltagi (2021) points out that balanced panel data have higher statistical efficiency and credibility in applying statistical methodology.

As mentioned earlier, since there are negative values for FDI, this paper does not consider taking logarithms and will use the original values directly.

4.3 correlation analysis

In empirical research, correlation test is an important step in the preliminary analysis. Firstly, correlation test can reveal the potential linear relationship between variables and provide a solid foundation for subsequent causal analysis and regression model construction. By measuring the strength and direction of the relationship between two variables, it is possible to initially identify which variables are significantly correlated with each other, and thus decide the direction of further in-depth analysis. Second, the correlation test helps to identify the problem of multicollinearity. Multicollinearity refers to the existence of a high degree of correlation between independent variables, which can affect the accuracy and robustness of regression analysis. Through the correlation test, highly correlated pairs of variables can be identified and appropriately handled during model construction to improve the credibility and explanatory power of the regression results. In addition, correlation tests

allow for initial screening and validation of data to ensure consistency and reliability. Correlation analyses are a fundamental step in understanding the characteristics of the data and the relationships of the variables, and help to improve the precision and reliability of econometric analyses.

The correlation between variables as shown in table 2, most of the variables in this paper are significant at 1% level of significance. And there is a significant positive correlation between the dependent variable FDI and the core independent variable CRP with the correlation coefficient significant at 1% level of significance. This indicates that countries with higher corruption perception index (lower level of corruption) usually have higher FDI inflows.

4.4 Multicollinearity tests

According to table 2, it can be found that the correlation coefficient between GDP and MS variables reaches 0.7, and the correlation coefficient between LC and OPEN variables reaches -0.8, all of which are strong correlations, and all of which are significant at the 1% significance level. As mentioned above, in order to avoid the errors caused by multicollinearity on the subsequent empirical analysis, this paper did multicollinearity detection with inflated variance factor (VIF). The results of multicollinearity between variables are shown in table 3.

Through table 3, it can be found that the VIF value of LC is 10.59, which is more than 10, indicating that there is multicollinearity between this variable and other variables. The VIF values of OPEN and MS variables are 7.99 and 5.94 respectively, which are lower than 10, indicating that the problem of multicollinearity between these two variables is not serious. Overall, the average VIF value of 5.01 indicates that the multicollinearity problem is within acceptable limits, but further treatment of the LC variable is needed.

There are three main ways to deal with multicollinearity: 1. Highly covariate variables: If a variable has an exceptionally high VIF value, consider deleting that variable. 2. Correlated variables: If two or more variables are highly correlated,

consider combining them into a single composite indicator. 3. Regularization methods: Using a regularization method, such as Ridge Regression or Lasso regression. These methods add a penalty term to the regression process to mitigate the problem of multicollinearity.

In this paper, the first method, i.e., deleting the LC variable, is chosen to deal with the multicollinearity problem. The results are clear that in table 3, the VIF values of all variables have decreased after deleting the LC variable, and the VIF values of the OPEN and MS variables have decreased most significantly, indicating that they are most affected by the LC variable. Overall, after deleting the LC variable, the average VIF value is 2.60. This indicates that the problem of multicollinearity of the variables in the current model is mild and within the controllable range, which does not seriously affect the regression results, and it can be continued to carry out further regression analyses and interpretations.

4.5 Hausmann tests

It is only after ensuring that there is no serious multicollinearity in the variables that this paper can conduct a Hausman test to determine whether the empirical model should use fixed or random effects. In panel data analysis, choosing the right model is crucial to ensure the accuracy and reliability of the results. The Hausman Test is a commonly used method for choosing between a Fixed Effects Model (FEM) and a Random Effects Model (REM). The main purpose of the Hausman Test is to test whether there is a systematic difference between the estimates of the Fixed Effects Model and the Random Effects Model. If there is a significant difference between the two, it indicates that the assumption of the Random Effects Model (i.e., that individual effects are not related to the explanatory variables) is not valid, and then the Fixed Effects Model should be chosen because its estimates are consistent. Although the fixed effects model provides consistent estimates when individual heterogeneity exists and these heterogeneities are associated with the explanatory variables, it is less efficient in its estimation because it loses information on cross-individual variation. In contrast, the

random effects model provides higher estimation efficiency when the hypothesis is valid. Therefore, the Hausman test can help this paper to make a scientific choice between consistency and efficiency. With the Hausman test, it can ensure that the model choice has a solid theoretical and statistical foundation, thus improving the scientific validity and credibility of the study.

The results of the Hausman test are shown in table 4. By comparing the estimates of the random effects model and the fixed effects model, it can be seen that the chi-square statistic is 18, which corresponds to a p-value of 0.004. this indicates that there is a systematic difference between the coefficient estimates of the random effects model and the fixed effects model. The original hypothesis is rejected as the p-value is less than 0.05 significant at 1% level of significance. This means that the assumption of the random effects model (that individual effects are independent of the explanatory variables) is not valid and therefore this paper chooses to use the fixed effects model.

4.6 Robustness tests

The main purpose of robustness testing is to verify the consistency of regression results under different assumptions and model settings, thus ensuring that the results are not affected by specific model choices or data outliers. Through robustness testing, researchers can confirm that their findings have broad applicability and are not solely dependent on a particular statistical method or data treatment.

The importance of robustness testing is also reflected in the confirmation of external validity. Different datasets, time periods, or combinations of variables may affect the robustness of the results, and therefore, by having multiple robustness tests, the researcher can increase confidence in the results. For example, Leamer (1983) pointed out that robustness testing is an important means of preventing false conclusions resulting from "data mining", i.e., the results should not depend solely on a particular data processing or modeling set, but should be consistent across different contexts.

In addition, robustness testing can help to reveal potential model misspecification

problems such as omitted variable bias, multicollinearity or heteroskedasticity. By using alternative variables, different regression models, or adjusting the sample range, researchers can identify and correct these potential problems, thus improving the explanatory and predictive power of regression analysis.

Therefore robustness testing is not only necessary in empirical research, but also an essential step to ensure the reliability of results and the validity of conclusions.

Some of the commonly used robustness tests in empirical studies are: 1. Alternative Model Specifications; 2. Alternative Variables; 3. Subsample Analysis; 4. Heterogeneity Tests; 5. Robust Standard Errors; 6. Resampling Techniques.

This study will employ alternative variables to test the robustness of the core variables using FDI inflows as a percentage of GDP. The results of the robustness test will be displayed in table 7.

Table 7 demonstrates the results of the robustness tests, where Model 1 is the baseline regression and Model 2 uses the proxy variable, FDI inflows as a percentage of GDP, as the dependent variable for the robustness test. The results show that CRP maintains a significant positive effect in both models. In Model 1, the regression coefficient of CRP is 293.543, which is significant at the 5% significance level ($p < 0.05$), while in Model 2, the regression coefficient of CRP is 0.002, which is also significant at the 5% significance level ($p < 0.05$). This proves that the original model is robust.

4.7 Endogeneity tests

In empirical research, endogeneity problems are usually caused by omitted variable bias, simultaneity bias and measurement error. When endogeneity exists, the independent variables in the regression model are correlated with the error terms, which can lead to bias and inconsistency in the estimated coefficients. These biases can affect the credibility of research findings and the validity of policy recommendations (Wooldridge 2010). For example, Leamer (1983) pointed out that if the endogeneity

issue is ignored, research findings may mislead policy makers and practical applications, leading to incorrect decisions and resource allocation. Therefore, endogeneity test is an essential step in any empirical research to ensure the scientific validity and credibility of the findings.

Commonly used endogeneity testing methods include Instrumental Variables Method, Difference-in-Differences Method and System Generalized Method of Moments. Instrumental variable method eliminates endogeneity bias by finding instrumental variables that are related to the endogenous variables but not related to the error term, the advantage is that it can solve the endogeneity problem effectively, but it is very difficult to find the appropriate instrumental variables and has a large impact on the results (Staiger and Stock 1994). The difference-in-differences method controls the endogeneity problem by comparing the difference between the treatment and control groups before and after the treatment, which can effectively control the unobservable time-invariant individual effects, but requires a strict parallel trend assumption (Angrist and Pischke 2009). The system generalized method of moments combines level and difference equations while using lagged values of endogenous variables as instrumental variables for dynamic panel models, which has the advantage of effectively solving the endogeneity problem but requires larger sample sizes and multiple time periods of data (Arellano and Bover 1995). By analyzing these methods in detail, this paper chooses to use the instrumental variable method to test the model.

Based on the results of the instrumental variables regression analysis, the p-value for the underidentification test is 0.0000, indicating that the model is identified and the instrumental variables are statistically relevant. The Cragg-Donald Wald F statistic for the weak identification test is 59.807, which is higher than the Stock-Yogo critical values of 16.85, 10.27, and 6.71, suggesting that the instrumental variables are not weak. Furthermore, the p-value for the Sargan statistic is 0.1239, indicating that we cannot reject the null hypothesis that the instrumental variables are uncorrelated with the error term, further supporting the validity of the instrumental variables. Therefore, considering these test results, we can conclude that the instrumental variables used are effective.

4.8 Baseline regression

Table 5 shows the regression results of different models. In panel data analysis, fixed effects (FE) models have significant advantages over ordinary least squares (OLS) base regression models. First, fixed effects models are able to control for individual heterogeneity that does not vary over time, i.e., fixed idiosyncrasies across countries (e.g., culture, institutions, etc.), thus providing more consistent estimates (Wooldridge 2010). In contrast, OLS models fail to control for these individual idiosyncrasies, which may lead to biased coefficient estimates. The regression results in Table 5 show that there is a significant change in the significance of the explanatory variables INFRA and RT in the fixed effects models (Models 2 and 3) compared to the OLS model (Model 1). This suggests that the fixed effects model is more effective in capturing the true impact of these variables on FDI.

Further, the inclusion of a time fixed effects model (Model 3) has an additional advantage over a model that only fixes country effects (Model 2). Time fixed effects are able to control for common shocks across time and time-specific unobserved factors such as global economic cycles, technological advances, and international policy changes (Baltagi 2021). These dual fixed effects model captures the complex heterogeneity in the panel data more comprehensively, thereby improving the explanatory power and robustness of the model. The results in Table 5 show that the significance of the variables INFRA and RT is further enhanced with the inclusion of time fixed effects, and the R-squared value of the model is significantly higher (from 0.145 to 0.595), which suggests that the dual fixed effects model can more accurately capture the complex heterogeneity in the panel data, thus enhancing the explanatory power and robustness of the model. This indicates that the double fixed effects model can more accurately explain the changes in FDI inflows.

It is worth noting in table 5 that the core variable CRP is not significant. Therefore, this paper adopts the method of adding variables step by step to determine the best model. The stepwise addition of variables and the results are shown in table 6.

The table 6 shows the stepwise process of adding variables in different models and

its effect on the core variable CRP on the basis of fixed time and city effects. The CRP variable was significant at the 10% significance level ($p < 0.1$) in the initial fixed-effects models (Models 1 and 2), but after the addition of more control variables, CRP reached the 5% significance level ($p < 0.05$) in Models 4 and 5, and further increased its significance in Model 6.

The stepwise approach to adding variables helps to understand the independent contribution of each control variable to the effect of the core variables and ensures the explanatory power of the model. The addition of the education variable (EDU) and infrastructure variable (INFRA) in Model 4 resulted in an increase in the significance of the coefficients of the CRP variables, along with a significant increase in the R-squared value from 0.399 to 0.539, indicating the contribution of these variables to the explanatory power of the model. This strategy of gradually adding variables not only ensures the robustness of the core variables, but also helps to select the optimal model by comparing the R-squared values and significance levels of different models.

Through this approach, this paper finally identifies Model 6 as the best model, where the CRP variable is significant at the 5% significance level ($p < 0.05$) and has the highest R-squared value of 0.544, indicating strong explanatory power and robustness of the model.

According to the regression results in Table 6, the level of corruption perception (CRP) consistently exhibits a significant positive effect on FDI in all models, especially in Model 6, where the CRP is significant at the 5% level of significance ($p < 0.05$), with regression coefficients of 293.543, respectively. This suggests that, as the corruption perception index increases (i.e., as corruption decreases), there is a significant increase in the inflow of FDI. That is, for every unit increase in CRP, FDI inflow increases by 293.543 units. This result is consistent with the study of (Habib and Zurawicki 2002), who found that lower levels of corruption can increase investor confidence and reduce investment risk, thus promoting an increase in FDI.

In addition, the effect of RT on FDI shows a significant positive relationship in Model 6 with a regression coefficient of 22,857.405, which is significant at 1% level of significance ($p < 0.01$). This shows that a good research and technology base

significantly contributes to FDI inflows. This is consistent with the finding of (Asiedu 2002) that research & technology is an important factor in attracting FDI.

EDU shows a negative and significant relationship in Model 6 with a regression coefficient of -276.805, which is significant at the 5% level of significance ($p < 0.05$). This suggests that higher levels of education may be associated with some short-term reductions in FDI inflows. This may be due to the fact that labor force with high level of education is more inclined to high value-added industries which have lower FDI demand.

Overall, the optimal model (Model 6), by adding variables in a stepwise manner, shows that the level of corruption perception and research and technology are the key factors contributing to FDI inflows, while the level of education may have a complex effect.

Moreover, although the findings of this paper are consistent with those of previous studies. However, Méon and Sekkat (2005) point out that although corruption is usually considered a negative factor, in some cases it may temporarily facilitate investment flows by "lubricating" cumbersome bureaucratic procedures. However, this relationship does not suggest that the long-term impact of corruption on economic development is positive, but may only reflect the short-term "costs" that investors pay to gain market access or avoid regulation. Moreover, the positive relationship between corruption and FDI may be affected by factors such as data collection and sample characteristics. Therefore, although CRP has a significant positive impact on FDI in this paper, the results should be interpreted with caution and analyzed in depth in the context of the institutional environment of specific countries or regions.

4.9 Mediation effect analysis

In empirical research, mediation effect analysis is a key approach to understanding the impact of independent variables on dependent variables through mediating variables. It helps to reveal underlying causal mechanisms and elucidate the direct and indirect effects of the independent variable on the dependent variable. The study of mediating

effects provides an in-depth understanding of the complex relationships between variables, thus providing a more nuanced and comprehensive explanation, which is important for policy formulation and theory development (Baron and Kenny, 1986). The importance of mediation effects analysis lies in its ability to reveal causal paths, identify and explain how the independent variable affects the path of the dependent variable through the mediating variable, thereby improving the explanatory power of the model and providing more accurate policy recommendations (MacKinnon 2008). In addition, by including mediating variables, potential confounding bias can be controlled to ensure the scientific validity and credibility of research findings (Shrout and Bolger 2002).

Common methods of mediated effects analysis include the Baron and Kenny method, Bootstrap method, and Structural Equation Modeling (SEM).The Baron and Kenny method is the most classical method of mediation effects analysis, which consists of three steps: first, test the total effect of the independent variable on the dependent variable, then test the effect of the independent variable on the mediator variable, and finally, test the mediating variables on the dependent variable's effect on the dependent variable while controlling for the direct effect of the independent variable (Baron and Kenny 1986).The Bootstrap method improves the statistical efficacy of the mediation effect test by estimating the standard error of the mediation effect through repeated sampling, which is particularly suitable for studies with small sample sizes (Preacher and Hayes 2004). Structural equation modeling (SEM) allows for the simultaneous estimation of multiple mediating paths and is suitable for the analysis of mediating effects in complex models, capable of dealing with multiple mediators and latent variables and providing a more refined path analysis (Kline 2023). Through these methods, researchers are able to make precise causal inferences, improve the external validity of findings, identify indirect effects, and provide an important basis for theory development and practical application.

By analyzing the data and literature, this paper employs a three-step approach to analyze the mediating effects of the benchmark model.

Based on the results of the mediation effect analysis, Model 1 shows that the direct

effect of CRP on FDI is significant and positive, indicating that an increase in CRP (i.e., a decrease in corruption) significantly contributes to FDI inflows. Specifically, for every unit increase in CRP, FDI increases by 293.543 units ($p < 0.05$). Model 2 further analyzes the effect of CRP on the logarithmic form of the exchange rate (lnexc) (National currency per US dollar), and the results show that the positive effect of CRP on lnexc is significant at the 10% significance level ($p < 0.1$), suggesting that there is a positive correlation between higher CRP and currency depreciation. Finally, Model 3 considers the effects of CRP and lnexc on FDI at the same time, and the results show that after considering the exchange rate factor, the direct effect of CRP on FDI still exists but is weakened ($p < 0.1$), while the positive effect of lnexc on FDI is significant ($p < 0.1$), indicating that the exchange rate mediates in the relationship between CRP and FDI.

Combining the results of these three models, it can be concluded that CRP has an indirect effect on FDI through the exchange rate, i.e., raising CRP not only directly increases FDI inflows, but also indirectly increases FDI inflows by promoting exchange rate depreciation.

4.10 Heterogeneity tests

In empirical research, heterogeneity tests help researchers identify and understand differences in the characteristics of different subgroups in sample data that may significantly affect the relationship between variables. Heterogeneity tests can reveal subtle effects that are masked in the overall regression analysis, thus improving the accuracy and explanatory power of the findings and helping to identify potential moderating variables, enhancing the external validity and robustness of the model (Hansen 2000). Heterogeneity tests allow the identification of differences in characteristics between different subgroups (e.g., countries, industries, firm sizes, etc.) that may have different impacts on FDI (Caves 1996), improve the explanatory and predictive power of the model (Heckman 1979), and provide more targeted advice for policy formulation. In addition, heterogeneity tests help to confirm the applicability of

findings in different contexts, thereby improving the external validity of the model (Raudenbush and Bryk 2002), and to ensure the robustness of the results by examining and controlling for heterogeneity in the sample and avoiding bias caused by ignoring heterogeneity (White 1980).

The commonly used tests for heterogeneity include grouped regression analysis, interaction term analysis, and quantile regression. Subgroup regression analysis groups sample data into subgroups and performs separate regression analyses to identify differences between subgroups (Angrist and Pischke 2009); interaction term analysis incorporates an interaction term in a regression model to test for interaction effects between the independent and moderator variables (Friedrich 1982); and quantile regression methods test the heterogeneity of a sample of data by identifying the different effects of the independent variable on the dependent variable under different conditions, revealing potential heterogeneity (Koenker and Bassett 1978).

Through an analysis of the literature and data, this paper chooses to use the urbanization rate (i.e., the ratio of urban population to total population) to divide the V4 countries into high and low urbanization groups for the subgroup regressions.

The choice of urbanization rate as an indicator to test heterogeneity has a solid theoretical and empirical foundation in FDI (foreign direct investment) research. Theoretically, areas with high urbanization rates have better infrastructure and public services, higher productivity and larger market size, and can attract more FDI (Porter 2011). In addition, the population concentration effect brought about by urbanization can provide more concentrated labor resources and consumer markets, which is conducive to improving production efficiency and reducing transportation costs (Glaeser and Gottlieb 2009). Empirical studies also support this view. For example, Cheng and Kwan (2000) found that regions with higher urbanization rates in China attracted more FDI, which was associated with improved infrastructure and concentrated labor markets. Zhang and Song (2001) also pointed out that the process of urbanization plays an important role in attracting FDI and promoting exports, especially in rapidly urbanizing developing countries. Therefore, the urbanization rate as an indicator for heterogeneity test is not only reasonable but also has important

application value.

The results of the heterogeneity test are shown in table 10. Based on the results of the heterogeneity test in Table 10, the following conclusions about the impact of CRP on FDI can be drawn: the regression coefficient of CRP on FDI in countries with high urbanization rates is 389.805 and is significant at the 5% significance level (t-value of 2.07), which suggests that an increase in CRP (i.e., a decrease in corruption) significantly contributes to the inflow of FDI. This may be due to the fact that countries with high urbanization rates usually have better infrastructure, more efficient markets and stronger governance, and foreign investors are more willing to invest in these environments because they can expect lower corruption risks and higher returns on their investments. On the contrary, the regression coefficient of CRP on FDI in countries with low urbanization rates is 136.389, which does not reach the level of significance (t-value of 0.54), indicating that the effect of perceived level of corruption on FDI is not significant in these countries. This may be due to the inadequacy of infrastructure and governance capacity in countries with low urbanization rates, leading to the fact that even if corruption decreases, it is not enough to attract FDI significantly. In addition, these countries may rely on other factors (e.g., R&D investment) to attract FDI.

The results of the heterogeneity test reveal different paths and mechanisms of CRP's impact on FDI. In countries with high urbanization rates, the level of corruption perception is an important influence on FDI, and a good governance environment can significantly attract foreign investment because investors have high expectations of transparency and efficiency in the legal system and market operations. In countries with low urbanization rates, while reducing corruption remains important, other factors such as infrastructure improvements, education levels and R&D investment may play a more critical role in attracting FDI. Low urbanization rate countries may need more comprehensive reforms and development strategies to improve their attractiveness to FDI.

In summary, the results of the heterogeneity test indicate that the urbanization rate has a significant moderating effect on the relationship between CRP and FDI. In countries with high urbanization rates, reducing corruption significantly promotes FDI

inflows; whereas in countries with low urbanization rates, reducing corruption does not have a significant effect on FDI, and these countries need to improve the investment climate through other means. This finding underscores the need to consider a country's level of urbanization and specific economic structure when formulating policies to attract FDI. Therefore, countries with high urbanization rates should continue to strengthen anti-corruption measures and upgrade governance, while countries with low urbanization rates need to focus on infrastructure development, upgrading education and increasing investment in research and development in order to create a more attractive investment climate.

Conclusion

The research in this paper focuses on the impact of corruption on FDI inflows in visegrad countries. Although scholars have done many studies, there is still much work to be done. First, visegrad countries are not the subject of many scholars' studies. Although the V4 was established in 1991, it developed in the midst of communism and therefore was not considered attractive by foreign investors. It was only after V4's accession to the EU in 2004 that it gradually gained the attention of foreign investors. Therefore, not much research has been done on visegrad countries in the field of the impact of corruption on FDI inflows. Therefore, the research in this paper complements this field and makes the study of corruption more generally applicable. Second, many scholars have only analyzed the impact of corruption on FDI inflows, but few have analyzed how corruption affects FDI inflows. Therefore, this paper conducts a mediation effect analysis and finds that increased levels of corruption not only directly affect the reduction of FDI, but also reduce FDI inflows by affecting exchange rate appreciation. This reveals to some extent the inner process of the relationship between corruption and FDI, and provides a partial reference for the path analysis therein. In addition, this paper also reveals the different paths and mechanisms of corruption's impact on FDI through the heterogeneity test. After grouping high and low urbanization, this paper finds that the impact of corruption on FDI will be significant in countries

with high urbanization rates and insignificant in countries with low urbanization rates.

However, there are still some limitations to this paper.

In terms of data, firstly, the compilation of the corruption perception index itself has some bias; secondly, the sample size of this research is rather small, which makes it easy to have some errors in estimation. Future research could choose more precise and realistic indicators for measuring corruption levels and expand the sample size of the study to obtain more accurate results.

In terms of research methodology, this paper has only researched the V4 countries as a whole with panel data and has not yet researched the individual countries in the V4 countries in groups to obtain a more detailed research. In the future, V4 countries can be analyzed in more detail through time series data.

Overall, however, the research in this paper succeeds in confirming the previous conjecture that the corruption perception index (CRP) has a significant positive effect on FDI inflows in V4 countries, i.e., countries with lower levels of corruption tend to have higher FDI inflows.

List of References

Abbott, Andrew, David O. Cushman, and Glauco De Vita. 2012. 'Exchange Rate Regimes and Foreign Direct Investment Flows to Developing Countries'. *Review of International Economics* 20 (1): 95–107. https://doi.org/10.1111/j.1467-9396.2011.01010.x.

Abed, George T, and Hamid R Davoodi. 2000. 'Corruption, Structural Reforms, and Economic Performance in the Transition Economies'.

Ackerman. 2013. 'Corruption: A Study in Political Economy - Susan Rose-Ackerman - Google Books'. 2013. https://books.google.co.uk/books?hl=en&lr=&id=RVa0BQAAQBAJ&oi=fnd&pg=PP1&dq=Bureaucratic+Corruption+Ackerman&ots=CSIKwoNfyS&sig=2V_XoVyet6GUHcN5-zuTlY1vM3o&redir_esc=y#v=onepage&q=Bureaucratic%20Corruption%20Ackerman&f=false.

Adcock, Robert, and David Collier. 2001. 'Measurement Validity: A Shared Standard for Qualitative and Quantitative Research'. *American Political Science Review* 95 (3): 529–46. https://doi.org/10.1017/S0003055401003100.

Ahmad, Nor Asma, Normaz Wana Ismail, and NurHaiza Nordin. 2015. 'The Impact of Infrastructure on Foreign Direct Investment in Malaysia'. *International Journal of Management Excellence* 5 (1).

Alba, Joseph D, Donghyun Park, and Peiming Wang. 2010. 'The Impact of Exchange Rate on FDI and the Interdependence of FDI over Time'.

Al-Sadig, Ali. 2009. 'The Effects of Corruption on FDI Inflows'. *Cato Journal* 29 (2): 267–94.

Alvarez, Mike, José Antonio Cheibub, Fernando Limongi, and Adam Przeworski. 1996. 'Classifying Political Regimes'. *Studies in Comparative International Development* 31:3–36.

Amundsen, Inge. 1999. *Political Corruption: An Introduction to the Issues*. Working Paper, WP 1999:7. Bergen: Chr. Michelsen Institute.

Ang, James B. 2008. ‘Determinants of Foreign Direct Investment in Malaysia’. *Journal of Policy Modeling* 30 (1): 185–89. https://doi.org/10.1016/j.jpolmod.2007.06.014.

Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist’s Companion*. Princeton University Press.

Anyanwu, John C. 2006. ‘Promoting of Investment in Africa’. *African Development Review* 18 (1): 42–71. https://doi.org/10.1111/j.1467-8268.2006.00132.x.

Arellano, Manuel, and Olympia Bover. 1995. ‘Another Look at the Instrumental Variable Estimation of Error-Components Models’. *Journal of Econometrics* 68 (1): 29–51. https://doi.org/10.1016/0304-4076(94)01642-D.

Asghari, Maryam. 2013. ‘Does FDI Promote MENA Region’s Environment Quality? Pollution Halo or Pollution Haven Hypothesis’. *International Journal of Scientific Research in Environmental Sciences* 1 (6): 92–100. https://doi.org/10.12983/ijsres-2013-p092-100.

Asiedu, Elizabeth. 2002. ‘On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Di erent?’ *WORLD DEVELOPMENT*.

Azam, Muhammad, and Ling Lukman. 2010. ‘Determinants of Foreign Direct Investment in India, Indonesia and Pakistan: A Quantitative Approach’, no. 1.

Babatunde Thompson, Abimbola. 2010. ‘Trade Openness, Infrastructure, FDI and Growth in Sub-Saharan African Countries’. *International Academy of African Business Development Conference Proceedings*, January.

Bakar, Nor’Aznin Abu, Siti Hadijah Che Mat, and Mukaramah Harun. 2012. ‘The Impact of Infrastructure on Foreign Direct Investment: The Case of Malaysia’. *Procedia - Social and Behavioral Sciences*, International Congress on Interdisciplinary Business and Social Sciences 2012 (ICIBSoS 2012), 65 (December):205–11. https://doi.org/10.1016/j.sbspro.2012.11.112.

Baltagi, Badi H. 2021. *Econometric Analysis of Panel Data*. Springer Texts in Business and Economics. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-53953-5.

Bardhan, Pranab. 1997. ‘Corruption and Development: A Review of Issues’.

Journal of Economic Literature 35 (3): 1320–46.

Baron, Reuben M, and David A Kenny. 1986. 'The Moderator–Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations.' *Journal of Personality and Social Psychology* 51 (6): 1173.

Barro, Robert J., and Jong Wha Lee. 2013. 'A New Data Set of Educational Attainment in the World, 1950–2010'. *Journal of Development Economics* 104 (September):184–98. https://doi.org/10.1016/j.jdeveco.2012.10.001.

Beck, Nathaniel, and Jonathan N. Katz. 2011. 'Modeling Dynamics in Time-Series–Cross-Section Political Economy Data'. *Annual Review of Political Science* 14 (1): 331–52. https://doi.org/10.1146/annurev-polisci-071510-103222.

Becker, Johannes, Clemens Fuest, and Nadine Riedel. 2012. 'Corporate Tax Effects on the Quality and Quantity of FDI'. *European Economic Review* 56 (8): 1495–1511. https://doi.org/10.1016/j.euroecorev.2012.07.001.

Behname, Mehdi. 2012. 'Foreign Direct Investment and Urban Infrastructure An Evidence from Southern Asia'.

Belgibayeva, Adiya, and Alexander Plekhanov. 2019. 'Does Corruption Matter for Sources of Foreign Direct Investment?' *Review of World Economics* 155 (3): 487–510. https://doi.org/10.1007/s10290-019-00354-1.

Bell, Andrew, and Kelvyn Jones. 2015. 'Explaining Fixed Effects: Random Effects Modeling of Time-Series Cross-Sectional and Panel Data'. *Political Science Research and Methods* 3 (1): 133–53. https://doi.org/10.1017/psrm.2014.7.

Beloucif, Ahmed, Mohammad Islam, and Boukhobza. 2020. *An Empirical Study of FDI Determinants: A Panel Data Analysis of South and South-East Asia*.

Boddewyn, Jean J. 1983. 'Foreign Direct Divestment Theory: Is It the Reverse of FDI Theory?' *Weltwirtschaftliches Archiv* 119 (2): 345–55.

———. 1985. 'Theories of Foreign Direct Investment and Divestment: A Classificatory Note'. *Management International Review* 25 (1): 57–65.

Borrmann, Christina, Rolf Jungnickel, and Dietmar Keller. 2005. 'What Gravity Models Can Tell Us About the Position of German FDI in Central and Eastern Europe'. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.798924.

Boschma, Ron. 2015. ‘Towards an Evolutionary Perspective on Regional Resilience’. In *Evolutionary Economic Geography*. Routledge.

Brouthers, Lance Eliot, Yan Gao, and Jason Patrick McNicol. 2008. ‘Corruption and Market Attractiveness Influences on Different Types of FDI’. *Strategic Management Journal* 29 (6): 673–80. https://doi.org/10.1002/smj.669.

Buchanan, Bonnie G., Quan V. Le, and Meenakshi Rishi. 2012. ‘Foreign Direct Investment and Institutional Quality: Some Empirical Evidence’. *International Review of Financial Analysis* 21 (January):81–89. https://doi.org/10.1016/j.irfa.2011.10.001.

Buckley, Peter J, Mark Casson, Peter J Buckley, and Mark Casson. 1991. *Alternative Theories of the Multinational Enterprise*. Springer.

Calderón, César, and Luis Servén. 2004. *The Effects of Infrastructure Development on Growth and Income Distribution*. Policy Research Working Papers. The World Bank. https://doi.org/10.1596/1813-9450-3400.

Callen. 2012. ‘Back to Basics: Economic Concepts Explained - International Monetary Fund - Google Books’. 2012. https://books.google.co.uk/books?hl=en&lr=&id=sT8ZEAAAQBAJ&oi=fnd&pg=PA14&dq=Gross+Domestic+Product:+An+Economy%E2%80%99s+All.+callen&ots=BQOqTA3G_M&sig=h2LbvnL6WPdcz2TfcqXfhIbGbvE&redir_esc=y#v=onepage&q=Gross%20Domestic%20Product%3A%20An%20Economy%E2%80%99s%20All.%20callen&f=false.

Calvet, A. L. 1981. ‘A Synthesis of Foreign Direct Investment Theories and Theories of the Multinational Firm’. *Journal of International Business Studies* 12 (1): 43–59. https://doi.org/10.1057/palgrave.jibs.8490570.

Campos, Nauro F., and Yuko Kinoshita. 2002. ‘Foreign Direct Investment as Technology Transferred: Some Panel Evidence from the Transition Economies’. *The Manchester School* 70 (3): 398–419. https://doi.org/10.1111/1467-9957.00309.

Castro, Conceição, and Pedro Nunes. 2013. ‘Does corruption inhibit foreign direct investment?’ *Política. Revista de Ciencia Política* 51 (1): 61–83. https://doi.org/10.5354/0719-5338.2013.27418.

Caves, Richard E. 1971. ‘International Corporations: The Industrial Economics of

Foreign Investment'. *Economica* 38 (149): 1. https://doi.org/10.2307/2551748.

Caves, Richard E. 1996. *Multinational Enterprise and Economic Analysis*. Cambridge university press.

Chakrabarti, Avik. 2001. 'The Determinants of Foreign Direct Investments: Sensitivity Analyses of Cross-Country Regressions'. *Kyklos* 54 (1): 89–114. https://doi.org/10.1111/1467-6435.00142.

Chatterjee, Suhita, Pulak Mishra, and Bani Chatterjee. 2013. 'Determinants of Inter-State Variations in FDI Inflows in India'.

Cheng, Leonard K., and Yum K. Kwan. 2000. 'What Are the Determinants of the Location of Foreign Direct Investment? The Chinese Experience'. *Journal of International Economics* 51 (2): 379–400. https://doi.org/10.1016/S0022-1996(99)00032-X.

Dahlström, Carl, Johannes Lindvall, and Bo Rothstein. 2013. 'Corruption, Bureaucratic Failure and Social Policy Priorities'. *Political Studies* 61 (3): 523–42. https://doi.org/10.1111/j.1467-9248.2012.00998.x.

Dang, Van Cuong, and Quang Khai Nguyen. 2021. 'Determinants of FDI Attractiveness: Evidence from ASEAN-7 Countries'. Edited by Gabriela Borz. *Cogent Social Sciences* 7 (1): 2004676. https://doi.org/10.1080/23311886.2021.2004676.

Dangerfield, Martin. 2008. 'The Visegrád Group in the Expanded European Union: From Preaccession to Postaccession Cooperation'. *East European Politics and Societies: And Cultures* 22 (3): 630–67. https://doi.org/10.1177/0888325408315840.

Daude, Christian, and Ernesto Stein. 2007. 'The Quality of Institutions and Foreign Direct Investment'. *Economics & Politics* 19 (3): 317–44. https://doi.org/10.1111/j.1468-0343.2007.00318.x.

Denisia, Vintila. 2010. 'Foreign Direct Investment Theories: An Overview of the Main FDI Theories'. *European Journal of Interdisciplinary Studies*, no. 3.

Denolf Bert. 2008. 'The Impact of Corruption on Foreign Direct Investment', January. https://doi.org/10.1163/221190008X00016.

Drury, A. Cooper, Jonathan Krieckhaus, and Michael Lusztig. 2006. 'Corruption, Democracy, and Economic Growth'. *International Political Science Review* 27 (2):

121–36. https://doi.org/10.1177/0192512106061423.

Dunning, John H. n.d. ‘The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions’.

Economou, Fotini, Christis Hassapis, Nikolaos Philippas, and Mike Tsionas. 2017. ‘Foreign Direct Investment Determinants in OECD and Developing Countries’. *Review of Development Economics* 21 (3): 527–42. https://doi.org/10.1111/rode.12269.

Edwards, Sebastian. 1990. ‘Capital Flows, Foreign Direct Investment, and Debt-Equity Swaps in Developing Countries’. National Bureau of Economic Research Cambridge, Mass., USA.

Egger, Peter, and Hannes Winner. 2005. ‘Evidence on Corruption as an Incentive for Foreign Direct Investment’. *European Journal of Political Economy* 21 (4): 932–52. https://doi.org/10.1016/j.ejpoleco.2005.01.002.

Ertz, Myriam, Fahri Karakas, Frederick Stapenhurst, Rasheed Draman, Emine Sarigöllü, and Myung-Soo Jo. 2019. ‘How Misconduct in Business Contributes to Understanding the Supply Side of Corruption in International Business’. *Critical Perspectives on International Business* 16 (3): 209–31. https://doi.org/10.1108/cpoib-09-2019-0067.

Farhadi, Maryam, Rahmah Ismail, and Masood Fooladi. 2012. ‘Information and Communication Technology Use and Economic Growth’. *PLOS ONE* 7 (11): e48903. https://doi.org/10.1371/journal.pone.0048903.

Faroh, Alie, and Hongliang Shen. 2015. ‘Impact of Interest Rates on Foreign Direct Investment: Case Study Sierra Leone Economy’ 6.

Fedderke, J.W., and A.T. Romm. 2006. ‘Growth Impact and Determinants of Foreign Direct Investment into South Africa, 1956–2003’. *Economic Modelling* 23 (5): 738–60. https://doi.org/10.1016/j.econmod.2005.10.005.

Freckleton, Marie, Allan Wright, and Roland Craigwell. 2012. ‘Economic Growth, Foreign Direct Investment and Corruption in Developed and Developing Countries’. *Journal of Economic Studies* 39 (6): 639–52. https://doi.org/10.1108/01443581211274593.

Friedrich, Robert J. 1982. ‘In Defense of Multiplicative Terms in Multiple

Regression Equations'. *American Journal of Political Science* 26 (4): 797–833. https://doi.org/10.2307/2110973.

Gasanova, Ayshan, Alexander N. Medvedev, and Evgeny I. Komotskiy. 2017. 'The Assessment of Corruption Impact on the Inflow of Foreign Direct Investment'. *AIP Conference Proceedings* 1836 (1): 020011. https://doi.org/10.1063/1.4981951.

Glaeser, Edward L., and Joshua D. Gottlieb. 2009. 'The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States'. *Journal of Economic Literature* 47 (4): 983–1028. https://doi.org/10.1257/jel.47.4.983.

Goertz, and Gary. 2005. 'Social Science Concepts: A User's Guide - Gary Goertz - Google Books'. 2005. https://books.google.co.uk/books?hl=en&lr=&id=vwNxIyT-M94C&oi=fnd&pg=PR9&dq=Social+Science+Concepts:+A+User%E2%80%99s+Guide&ots=cTmX_LkTf0&sig=-GdOpKt60EeQ0BLnnfemMsglKz0&redir_esc=y#v=onepage&q=Social%20Science%20Concepts%3A%20A%20User%E2%80%99s%20Guide&f=false.

Gray, Jean M., and H.Peter Gray. 1981. 'The Multinational Bank: A Financial MNC?' *Journal of Banking & Finance* 5 (1): 33–63. https://doi.org/10.1016/0378-4266(81)90006-6.

Grosse, Robert. 1992. 'Theory in International Business'. *Transnational Corporations*.

Guba, Egon G, Yvonna S Lincoln, and others. 1994. 'Competing Paradigms in Qualitative Research'. *Handbook of Qualitative Research* 2 (163–194): 105.

Guenichi, Hassan, and Neji Al-Eid Omri. 2024. 'Threshold Effects of Institutional Quality on FDI-Economic Growth Nexus: A Panel Smooth Transition Regression (PSTR) Model'. *Environment, Development and Sustainability*, March. https://doi.org/10.1007/s10668-024-04712-4.

Gujarati, Damodar N. 2021. *Essentials of Econometrics*. Sage Publications.

Habib, Mohsin, and Leon Zurawicki. 2002. 'Corruption and Foreign Direct Investment'. *Journal of International Business Studies* 33 (2): 291–307. https://doi.org/10.1057/palgrave.jibs.8491017.

Hanousek, Jan, Anastasiya Shamshur, Jan Svejnar, and Jiri Tresl. 2021.

‘Corruption Level and Uncertainty, FDI and Domestic Investment’. *Journal of International Business Studies* 52 (9): 1750–74. https://doi.org/10.1057/s41267-021-00447-w.

Hansen, Bruce E. 2000. ‘Sample Splitting and Threshold Estimation’. *Econometrica* 68 (3): 575–603. https://doi.org/10.1111/1468-0262.00124.

Hassan, Adewale Samuel. 2022. ‘Does Country Risk Influence Foreign Direct Investment Inflows? A Case of the Visegrád Four’. *Economies* 10 (9): 221. https://doi.org/10.3390/economies10090221.

Heckman, James J. 1979. ‘Sample Selection Bias as a Specification Error’. *Econometrica* 47 (1): 153–61. https://doi.org/10.2307/1912352.

Helmy, Heba E. 2013. ‘The Impact of Corruption on FDI: Is MENA an Exception?’ *International Review of Applied Economics* 27 (4): 491–514. https://doi.org/10.1080/02692171.2012.752445.

Heywood, Paul, ed. 2015. *Routledge Handbook of Political Corruption*. Milton Park, Abingon, Oxon ; New York, NY: Routledge.

Heywood, Paul M. 2014. ‘Measuring Corruption: Perspectives, Critiques and Limits’. In *Routledge Handbook of Political Corruption*. Routledge.

Holtbrügge, Dirk, and Heidi Kreppel. 2012. ‘Determinants of Outward Foreign Direct Investment from BRIC Countries: An Explorative Study’. *International Journal of Emerging Markets* 7 (1): 4–30. https://doi.org/10.1108/17468801211197897.

Huang, Shengsheng, and John Cantwell. 2017. ‘FDI Location Choice: The Role of Locational Ambidexterity’. *Multinational Business Review* 25 (1): 28–51. https://doi.org/10.1108/MBR-04-2016-0016.

Hymer, S. H. 1976. ‘The International Operation of National Firms: A Study of Direct Foreign Investment’. Cambridge.

Hymer, Stephen H. 1960. ‘The International Operations of National Firms, a Study of Direct Foreign Investment’. PhD Thesis, Massachusetts Institute of Technology.

Iloie, Raluca Elena. 2015. ‘Connections between FDI, Corruption Index and Country Risk Assessments in Central and Eastern Europe’. *Procedia Economics and Finance* 32:626–33. https://doi.org/10.1016/S2212-5671(15)01442-2.

Javorcik, Beata S., and Shang-Jin Wei. 2009. ‘Corruption and Cross-Border Investment in Emerging Markets: Firm-Level Evidence’. *Journal of International Money and Finance*, Emerging Market Finance, 28 (4): 605–24. https://doi.org/10.1016/j.jimonfin.2009.01.003.

Jones, Chris, and Yama Temouri. 2016. ‘The Determinants of Tax Haven FDI’. *Journal of World Business* 51 (2): 237–50. https://doi.org/10.1016/j.jwb.2015.09.001.

Jordaan, Johannes Cornelius. 2005. ‘FOREIGN DIRECT INVESTMENT AND NEIGHBOURING INFLUENCES’.

Karkinsky, Tom, and Nadine Riedel. 2012. ‘Corporate Taxation and the Choice of Patent Location within Multinational Firms’. *Journal of International Economics* 88 (1): 176–85. https://doi.org/10.1016/j.jinteco.2012.04.002.

Karklins, Rasma. 2002. ‘Typology of Post-Communist Corruption’. *Problems of Post-Communism* 49 (4): 22–32. https://doi.org/10.1080/10758216.2002.11655993.

Khadaroo, Jameel, and Boopen Seetanah. 2009. ‘Transport and Economic Performance’: *Journal of Transport Economics and Policy* 42.

Kheng, Veasna, Sizhong Sun, and Sajid Anwar. 2017. ‘Foreign Direct Investment and Human Capital in Developing Countries: A Panel Data Approach’. *Economic Change and Restructuring* 50 (4): 341–65. https://doi.org/10.1007/s10644-016-9191-0.

Kindleberger, Charles P. 1988. ‘The “New” Multinationalization of Business’. *Asean Economic Bulletin* 5 (2): 113–24. https://doi.org/10.1355/AE5-2A.

Kline, Rex B. 2023. *Principles and Practice of Structural Equation Modeling*. Guilford publications.

Koenker, Roger, and Gilbert Bassett. 1978. ‘Regression Quantiles’. *Econometrica* 46 (1): 33–50. https://doi.org/10.2307/1913643.

Kojima, Kiyoshi, and Terutomo Ozawa. 1984. ‘MICRO- AND MACRO-ECONOMIC MODELS OF DIRECT FOREIGN INVESTMENT: TOWARD A SYNTHESIS’.

Kosekahyaoglu, Levent. 2006. ‘A Comparative Analysis of FDI in Turkey and the CEECs: Is There Any Link between FDI and Trade?’ *Journal of Business Economics and Management* 7 (4): 183–200. https://doi.org/10.1080/16111699.2006.9636140.

Krifa-Schneider, Hadjila, Iuliana Matei, and Abdul Sattar. 2022. 'FDI, Corruption and Financial Development around the World : A Panel Non-Linear Approach'. *Economic Modelling*, Economic modelling. - Amsterdam [u.a.] : Elsevier, ISSN 0264-9993, ZDB-ID 86824-3. - Vol. 110.2022, p. 1-18, 110.

Kurecic, Petar, Goran Luburic, and Vladimir Simovic. 2015. 'The Interdependence of GDP per Capita and Foreign Direct Investment in the Transitional Economies of Central and Eastern Europe'. *Economic and Social Development: Book of Proceedings*, 192.

Kurer, Oskar. 2015. 'DEFINITIONS OF CORRUPTION'.

Kurul, Zühal, and A. Yalta. 2017. 'Relationship between Institutional Factors and FDI Flows in Developing Countries: New Evidence from Dynamic Panel Estimation'. *Economies* 5 (2): 17. https://doi.org/10.3390/economies5020017.

Larraín B., Felipe, and José Tavares. 2004. 'Does Foreign Direct Investment Decrease Corruption?' *Cuadernos de Economía* 41 (123). https://doi.org/10.4067/S0717-68212004012300003.

Leamer, Edward E. 1983. 'Let's Take the Con Out of Econometrics'. *The American Economic Review* 73 (1): 31–43.

Li, Yi, Banruo Zhang, Di Fan, and Zijie Li. 2021. 'Digital Media, Control of Corruption, and Emerging Multinational Enterprise's FDI Entry Mode Choice'. *Journal of Business Research* 130 (June):247–59. https://doi.org/10.1016/j.jbusres.2021.03.006.

Lily, Jaratin, Mori Kogid, Dullah Mulok, Lim Thien Sang, and Rozilee Asid. 2014. 'Exchange Rate Movement and Foreign Direct Investment in Asean Economies'. *Economics Research International* 2014 (March):1–10. https://doi.org/10.1155/2014/320949.

Lipsey, Robert E. 2007. '9. Home- and Host-Country Effects of Foreign Direct Investment'. In *9. Home- and Host-Country Effects of Foreign Direct Investment*, 333–82. University of Chicago Press. https://doi.org/10.7208/9780226036557-013.

Lipsey, Robert E., Robert C. Feenstra, Carl H. Hahn, and George N. Hatsopoulos. 1999. 'The Role of Foreign Direct Investment in International Capital Flows'. In

International Capital Flows, 307–62. University of Chicago Press. https://www.nber.org/books-and-chapters/international-capital-flows/role-foreign-direct-investment-international-capital-flows.

Lui, Francis T. 1985. 'An Equilibrium Queuing Model of Bribery'. *Journal of Political Economy* 93 (4): 760–81.

MacKinnon, David. 2008. *Introduction to Statistical Mediation Analysis*. New York: Routledge. https://doi.org/10.4324/9780203809556.

Mauro, P. 1995. 'Corruption and Growth'. *The Quarterly Journal of Economics* 110 (3): 681–712. https://doi.org/10.2307/2946696.

Melo, Luisa, and Michael A Quinn. 2015. 'OIL, FOREIGN DIRECT INVESTMENT AND CORRUPTION' 9 (1).

Méon, Pierre-Guillaume, and Khalid Sekkat. 2005. 'Does Corruption Grease or Sand the Wheels of Growth?' *Public Choice* 122 (1): 69–97. https://doi.org/10.1007/s11127-005-3988-0.

Moustafa, Eman. 2021. 'The Relationship between Perceived Corruption and FDI: A Longitudinal Study in the Context of Egypt'. SSRN Scholarly Paper. Rochester, NY. https://papers.ssrn.com/abstract=3915173.

Mundell, Robert A. 1957. 'International Trade and Factor Mobility'.

Nayak, Dinkar, and Rahul N Choudhury. 2014. 'A Selective Review of Foreign Direct Investment Theories'.

Nye, J. S. 1967. 'Corruption and Political Development: A Cost-Benefit Analysis'. *American Political Science Review* 61 (2): 417–27. https://doi.org/10.2307/1953254.

O'brien, Robert M. 2007. 'A Caution Regarding Rules of Thumb for Variance Inflation Factors'. *Quality & Quantity* 41 (5): 673–90. https://doi.org/10.1007/s11135-006-9018-6.

Omankhanlen, Alex Ehimare. n.d. 'The Effect of Exchange Rate and Inflation on Foreign Direct Investment and Its Relationship with Economic Growth in Nigeria'.

Philp, Mark. 2015. 'THE DEFINITION OF POLITICAL CORRUPTION'.

Porter, Michael E. 2011. *Competitive Advantage of Nations: Creating and Sustaining Superior Performance*. simon and schuster.

Preacher, Kristopher J., and Andrew F. Hayes. 2004. 'SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models'. *Behavior Research Methods, Instruments, & Computers* 36 (4): 717–31. https://doi.org/10.3758/BF03206553.

Raudenbush, Stephen W, and Anthony S Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Vol. 1. sage.

Rehman, Ch. Abdul, Muhammad Ilyas, Hassan Mobeen Alam, and Muhammad Akram. 2011. 'The Impact of Infrastructure on Foreign Direct Investment: The Case of Pakistan'. *International Journal of Business and Management* 6 (5): p268. https://doi.org/10.5539/ijbm.v6n5p268.

Ricardo, David. 2024. *On The Principles of Political Economic and Taxation - David Ricardo*. Lebooks Editora.

Rodrik, Dani. 1998. 'Has Globalization Gone Too Far?' *Challenge* 41 (2): 81–94. https://doi.org/10.1080/05775132.1998.11472025.

Rose, Jonathan. 2014. 'Corruption and The Problem of Perception*'. In *Routledge Handbook of Political Corruption*. Routledge.

Rose-Ackerman, Susan, and Bonnie J. Palifka. 2016. *Corruption and Government: Causes, Consequences, and Reform*. Cambridge University Press.

Roy Chowdhury, Piyali, and Anuradha Arthanari. 2016. 'The Effect of Currency Fluctuation on Foreign Direct Investment: A Study with Respect to India A. ANURADHA ARTICLE INFO'. *International Journal of Advanced Scientific Research and Development* 03 (January):1–8.

Rugman, Alan M. 1980. 'Internalization as a General Theory of Foreign Direct Investment: A Re-Appraisal of the Literature'. *Weltwirtschaftliches Archiv* 116 (2): 365–79.

Saini, Neha, and Monica Singhania. 2018. 'Determinants of FDI in Developed and Developing Countries: A Quantitative Analysis Using GMM'. *Journal of Economic Studies* 45 (2): 348–82. https://doi.org/10.1108/JES-07-2016-0138.

Santos, Eleonora. 2023. 'FDI and Firm Productivity: A Comprehensive Review of Macroeconomic and Microeconomic Models'. *Economies* 11 (6): 164.

https://doi.org/10.3390/economies11060164.

Schneider, Friedrich, and Bruno S Frey. 1985. 'Economic and Political Determinants of Foreign Direct Investment'. *World Development* 13 (2): 161–75. https://doi.org/10.1016/0305-750X(85)90002-6.

Sekkat, Khalid, and Marie-Ange Veganzones-Varoudakis. 2007. 'Openness, Investment Climate, and FDI in Developing Countries'. *Review of Development Economics* 11 (4): 607–20. https://doi.org/10.1111/j.1467-9361.2007.00426.x.

Shrout, Patrick E., and Niall Bolger. 2002. 'Mediation in Experimental and Nonexperimental Studies: New Procedures and Recommendations'. *Psychological Methods* 7 (4): 422–45. https://doi.org/10.1037/1082-989X.7.4.422.

Siddiqui, Hira Aijaz Ahmed, and Vesarach Aumeboonsuke. 2014. 'ROLE OF INTEREST RATE IN ATTRACTING THE FDI: STUDY ON ASEAN 5 ECONOMY' 2 (1).

Smith, Adam. 2002. 'An Inquiry into the Nature and Causes of the Wealth of Nations'. *Readings in Economic Sociology*, 6–17.

Søreide, Tina. 2014. *Drivers of Corruption: A Brief Review*. World Bank Publications.

Staiger, Douglas, and James H. Stock. 1994. 'Instrumental Variables Regression with Weak Instruments'. Working Paper. Technical Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/t0151.

Teksoz, SU. 2006. 'Corruption and Foreign Direct Investment: An Empirical Analysis'. *Munich Graduate School of Economics: Munich*.

Temiz, Dilek, and Aytaç Gökmen. 2011. 'Foreign Direct Investment (FDI) and Export Relation in Turkey: 1991–2010'. *Journal of Transnational Management* 16 (3): 157–80. https://doi.org/10.1080/15475778.2011.596779.

Transparency International. 2009. *Corruption and the Private Sector*. Global Corruption Report 2009. Cambridge: Cambridge University Press.

Treisman, Daniel. 2000. 'The Causes of Corruption: A Cross-National Study'. *Journal of Public Economics* 76 (3): 399–457. https://doi.org/10.1016/S0047-2727(99)00092-4.

Tsai, Pan-Long. 1994. ‘Determinants of Foreign Direct Investment and Its Impact on Economic Growth’. *Journal of Economic Development* 19 (1): 137–63.

Tullock, Gordon. 1996. ‘CORRUPTION THEORY AND PRACTICE’. *Contemporary Economic Policy* 14 (3): 6–13. https://doi.org/10.1111/j.1465-7287.1996.tb00619.x.

Türedi, Salih. 2018. ‘THE EFFECT OF CORRUPTION AND COUNTRY RISK ON FDI INFLOWS: EMPIRICAL EVIDENCE FROM DEVELOPING COUNTRIES’. *Uluslararası İktisadi ve İdari İncelemeler Dergisi*, no. 21 (April), 151–72. https://doi.org/10.18092/ulikidince.370653.

Vachudová, Milada Anna. 2005. *Europe Undivided: Democracy, Leverage, and Integration after Communism*. Oxford ; New York: Oxford University Press.

Verbeek, Marno. 2017. *A Guide to Modern Econometrics*. John Wiley & Sons.

Vernon, Raymond. 1966. ‘INTERNATIONAL INVESTMENT AND INTERNATIONAL TRADE IN THE PRODUCT CYCLE**The Preparation of This Article Was Financed in Part by a Grant from the Ford Foundation to the Harvard Business School to Support a Study of the Implications of United States Foreign Direct Investment. This Paper Is a Byproduct of the Hypothesis-Building Stage of the Study.’ In *International Economic Policies and Their Theoretical Foundations*, 415–35. Elsevier. https://doi.org/10.1016/B978-0-12-444281-8.50024-6.

Voyer, Peter A., and Paul W. Beamish. 2004. ‘The Effect of Corruption on Japanese Foreign Direct Investment’. *Journal of Business Ethics* 50 (3): 211–24. https://doi.org/10.1023/B:BUSI.0000024737.57926.bf.

Wacker, Konstantin M. 2013. ‘On the Measurement of Foreign Direct Investment and Its Relationship to Activities of Multinational Corporations’. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2354249.

Wafure, Obida Gobna. 2010. ‘Determinants of Foreign Direct Investment in Nigeria: An Empirical Analysis’.

Walsh, Mr James P, and Jiangyan Yu. 2010. *Determinants of Foreign Direct Investment: A Sectoral and Institutional Approach*. International Monetary Fund.

Wei, Shang-Jin. 2000. ‘How Taxing Is Corruption on International Investors?’ *The*

Review of Economics and Statistics 82 (1): 1–11. https://doi.org/10.1162/003465300558533.

Wheeler, David, and Ashoka Mody. 1992. 'International Investment Location Decisions: The Case of US Firms'. *Journal of International Economics* 33 (1–2): 57–76.

White, Halbert. 1980. 'A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity'. *Econometrica* 48 (4): 817–38. https://doi.org/10.2307/1912934.

Woo, Jung-Yeop, and Uk Heo. 2009. 'Corruption and Foreign Direct Investment Attractiveness in Asia'. *Asian Politics & Policy* 1 (2): 223–38. https://doi.org/10.1111/j.1943-0787.2009.01113.x.

Wooldridge, Jeffrey M. 2010. *Econometric Analysis of Cross Section and Panel Data*. 2nd ed. Cambridge, Mass: MIT Press.

Xaypanya, Phonesavanh, Poomthan Rangkakulnuwat, and Sasiwimon Warunsiri Paweenawat. 2015. 'The Determinants of Foreign Direct Investment in ASEAN: The First Differencing Panel Data Analysis'. *International Journal of Social Economics* 42 (3): 239–50. https://doi.org/10.1108/IJSE-10-2013-0238.

Xing, Yuqing, and Guanghua Wan. 2006. 'Exchange Rates and Competition for FDI in Asia'. *The World Economy* 29 (4): 419–34. https://doi.org/10.1111/j.1467-9701.2006.00791.x.

Yi, Jingtao, Shuang Meng, Craig D. Macaulay, and Mike W. Peng. 2019. 'Corruption and Foreign Direct Investment Phases: The Moderating Role of Institutions'. *Journal of International Business Policy* 2 (2): 167–81. https://doi.org/10.1057/s42214-019-00024-x.

Zangina, Suleiman, and Sallahuddin Hassan. 2020. 'Corruption and FDI Inflow to Nigeria: A Nonlinear ARDL Approach'. *Journal of Financial Crime* 27 (2): 635–50. https://doi.org/10.1108/JFC-09-2019-0116.

Zeneli, Valbona. 2016. 'Corruption, Foreign Direct Investment, and International Marketing in the Western Balkans: Corruption, Reforms and International Marketing in the Western Balkans'. *Thunderbird International Business Review* 58 (3): 277–91.

https://doi.org/10.1002/tie.21753.

Zhang, Kevin Honglin, and Shunfeng Song. 2001. ‘Promoting Exports: The Role of Inward FDI in China’. *China Economic Review* 11 (4): 385–96. https://doi.org/10.1016/S1043-951X(01)00033-5.

List of Appendices

Table 1 Descriptive statistics

VARIABLES	N	mean	sd	min	max
fdi	92	6,620	6,239	-14,537	29,580
crp	92	48.53	6.916	34	62
gdp	92	13,650	3,348	7,344	20,237
lc	92	7.591e+06	6.095e+06	2.579e+06	1.852e+07
open	92	1.367	0.381	0.582	2.044
infra	92	4.839	0.258	3.828	5.152
edu	92	57.24	11.78	28.71	76.56
ms	92	100.5	18.55	57.88	151.4
rt	92	1.077	0.433	0.447	2.029

Reference: generated by author

Table 2 Correlation between the independent variables

	fdi	crp	gdp	lc	open	infra	edu	ms	rt
fdi	1								
crp	0.283***	1							
gdp	0	0.440***	1						
lc	0.649***	0.204*	-0.356***	1					
open	-0.470***	0.0480	0.460***	-0.814***	1				
infra	0.169	0.585***	0.594***	-0.0310	0.217**	1			
edu	0.508***	0.589***	0.211**	0.582***	-0.367***	0.537***	1		
ms	0.207**	0.463***	0.709***	0.0530	0.312***	0.625***	0.458***	1	
rt	0.146	0.420***	0.680***	-0.154	0.147	0.422***	0.333***	0.575***	1

*** p<0.01, ** p<0.05, * p<0.1

Reference: generated by author

Table 3 Multicollinearity test

	Before		After	
Variable	VIF	1/VIF	VIF	1/VIF
lc	10.59	0.0944	\	\
open	7.99	0.1251	2.14	0.4068
ms	5.94	0.1685	2.84	0.3526
gdp	4.22	0.2367	3.54	0.2826
edu	3.44	0.2909	3.15	0.3174
rt	2.81	0.3555	2.11	0.4733
infra	2.71	0.3691	2.46	0.4068
crp	2.4	0.4174	1.97	0.5088
Mean VIF	5.01		2.60	

Reference: generated by author

Table 4 Hausman test

VARIABLES	(1) RE	(2) FE	(3) FE
crp	-103.298	109.719	109.719
	(116.225)	(107.586)	(107.586)
gdp	0.767	-0.082	-0.082
	(0.553)	(0.298)	(0.298)
open	8,121.947*	-7,779.317***	-7,779.317***
	(4,617.635)	(2,036.865)	(2,036.865)
infra	2,859.183	-813.580	-813.580
	(3,429.771)	(3,230.120)	(3,230.120)
edu	-35.092	86.189	86.189
	(77.143)	(79.946)	(79.946)
ms	-119.134	94.428*	94.428*
	(77.349)	(48.189)	(48.189)
rt	2,354.862	-92.174	-92.174
	(3,959.899)	(1,782.530)	(1,782.530)
Constant	-12,326.501	2,659.593	2,659.593
	(11,814.957)	(11,822.709)	(11,822.709)
Observations	92	92	92
chi2(3)			18
p-value			0.000440

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Reference: generated by author

Table 5 Regression results from different models

VARIABLES	(1) OLS	(2) FE	(3) FE
crp	109.719	-103.298	107.990
	(1.02)	(-0.89)	(0.78)
gdp	-0.082	0.767	0.227
	(-0.28)	(1.39)	(0.26)
open	-7,779.317***	8,121.947*	2,024.756
	(-3.82)	(1.76)	(0.30)
infra	-813.580	2,859.183	17,663.929***
	(-0.25)	(0.83)	(2.74)
edu	86.189	-35.092	31.015
	(1.08)	(-0.45)	(0.19)
ms	94.428*	-119.134	209.781
	(1.96)	(-1.54)	(1.29)
rt	-92.174	2,354.862	22,330.127***
	(-0.05)	(0.59)	(4.03)
Constant	2,659.593	-12,326.501	-110,007.139***
	(0.22)	(-1.04)	(-2.79)
Observations	92	92	92
R-squared		0.145	0.595
Country FE		YES	YES
Year FE			YES

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Reference: generated by author

Table 6 Regression results for different variables

VARIABLES	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE
crp	179.567*	193.280*	206.721*	246.016**	254.694**	293.543**
	(1.88)	(1.72)	(1.76)	(2.36)	(2.18)	(2.30)
gdp		-0.199	-0.117	0.761	0.781	0.441
		(-0.23)	(-0.13)	(0.95)	(0.96)	(0.48)
edu			-44.623	-251.623**	-244.922**	-276.805**
			(-0.42)	(-2.40)	(-2.17)	(-2.30)
rt				20,097.027***	20,190.684***	22,857.405***
				(4.34)	(4.30)	(3.92)
ms					25.871	14.355
					(0.17)	(0.09)
open						-5,021.718
						(-0.78)
Constant	-2,697.987	-1,416.257	-1,119.897	-19,430.706**	-22,102.854	-15,078.484
	(-0.59)	(-0.20)	(-0.15)	(-2.53)	(-1.26)	(-0.76)
Observations	92	92	92	92	92	92
R-squared	0.396	0.397	0.399	0.539	0.539	0.544
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Reference: generated by author

Table 7 Robustness tests

VARIABLES	(1) fdi	(2) fdi_gdp
crp	293.543**	0.002**
	(2.30)	(2.35)
gdp	0.441	-0.000**
	(0.48)	(-2.41)
edu	-276.805**	-0.001
	(-2.30)	(-1.11)
rt	22,857.405***	0.112**
	(3.92)	(2.59)
open	-5,021.718	0.011
	(-0.78)	(0.23)
ms	14.355	0.000
	(0.09)	(0.09)
Constant	-15,078.484	0.069
	(-0.76)	(0.47)
Observations	92	92
R-squared	0.544	0.623
Country FE	YES	YES
Year FE	YES	YES

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Reference: generated by author

Table 8 IV (2SLS) estimation

fdi	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
crp	253.2665	142.6353	1.78	0.082	-33.0858	539.6187
gdp	1.055883	1.08975	0.97	0.337	-1.13188	3.243648
edu	-108.436	142.4655	-0.76	0.45	-394.447	177.5756
rt	22019.59	6745.417	3.26	0.002	8477.603	35561.58
open	-2695.59	7336.341	-0.37	0.715	-17423.9	12032.73
ms	203.282	222.9604	0.91	0.366	-244.33	650.8937

Underidentification test (Anderson canon. corr. LM statistic):	66.631
Weak identification test (Cragg-Donald Wald F statistic):	59.807
Sargan statistic (overidentification test of all instruments):	5.76
Chi-sq(3) P-val =	0.1239

Reference: generated by author

Table 9 Mediation effect

	(1)	(2)	(3)
VARIABLES	fdi	lnexc	fdi
crp	293.543**	0.004*	240.867*
	(2.30)	(1.75)	(1.88)
lnexchange	\	\	13,329.468*
	\	\	(1.87)
gdp	0.441	-0.000*	0.855
	(0.48)	(-1.88)	(0.91)
edu	-276.805**	-0.012***	-117.095
	(-2.30)	(-5.60)	(-0.80)
rt	22,857.405***	0.362***	18,035.953***
	(3.92)	(3.49)	(2.88)
open	-5,021.718	0.147	-6,987.641
	(-0.78)	(1.29)	(-1.09)
ms	14.355	0.009***	-106.686
	(0.09)	(3.33)	(-0.65)
Constant	-15,078.484	2.276***	-45,421.079*
	(-0.76)	(6.48)	(-1.80)
Observations	92	92	92
R-squared	0.544	0.923	0.569
Country FE	YES	YES	YES
Year FE	YES	YES	YES
t-statistics in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Reference: generated by author

Table 10 Heterogeneity Tests

VARIABLES	(1) high_urbanization	(2) low_urbanization
crp	389.805*	136.389
	(2.07)	(0.54)
gdp	1.789	3.713
	(0.98)	(0.88)
edu	310.604*	-1,418.298**
	(1.75)	(-2.91)
rt	-3,143.337	26,177.172***
	(-0.26)	(3.17)
open	23,113.939*	-6,836.735
	(1.83)	(-0.55)
ms	808.249***	-269.257
	(3.00)	(-0.35)
Constant	-123,229.466***	36,455.437
	(-2.93)	(1.17)
Observations	46	46
R-squared	0.831	0.833
Number of country	2	2
Country FE	YES	YES
Year FE	YES	YES
t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Reference: generated by author