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Introduction

This chapter examines the determinants of FDI and its impact on economic growth in Kenya and Malaysia. Both countries have a long history of reliance on FDI in economic development. Prior to their independence, FDI was mainly concentrated in the primary sectors, while after independence FDI became an important ingredient in their industrialization processes. Over the years, Malaysia has remained an attractive location for FDI, having attracted substantial inflows, accompanied by rapid economic growth rates leading to successful industrialization. Kenya, on the other hand, although having comparable levels of FDI inflows with Malaysia in the 1970s, lost its appeal and has experienced slow economic growth rates over the same period, consequently failing to industrialize. This observed reversal of fortunes in the industrial performances between Kenya and Malaysia, which is also reflected in FDI inflows, necessitates a re-examination of FDI importance in economic development as well as its determinants.

The literature on determinants of FDI in host countries is vast and examines a wide range of factors. Perhaps one of the most comprehensive frameworks to date for analyzing FDI determinants is the Dunning (1977, 1993) eclectic paradigm. This paradigm, otherwise known as the OLI framework, suggests that MNEs contain Ownership- (O), Location- (L) and Internalization- (I) specific advantages, which enable them to compete with domestic firms in host countries. The precise configuration of the OLI parameters facing a particular firm and the
response of the firm to that configuration are strongly contextual, reflecting the features of both the parent and host country, the industry, and the characteristics of the investing firm (Dunning 2000).

Trade theories have also provided an alternative framework to the Business School models for analyzing FDI determinants. These theories, usually based on general equilibrium models, offer explanations for the existence of both horizontal FDI (where multi-plant firms duplicate roughly the same activities in multiple countries) and vertical FDI (where firms locate different stages of production to different countries). Vertical FDI arises when factor endowment differences are large and factor price differences exist (Helpman 1985), while horizontal FDI is based on the trade-off between maximizing the proximity to customers and concentrating production to achieve scale economies (Horstmann & Markusen 1987). An integration of both streams of literature on horizontal and vertical FDI has generated the knowledge-capital model, within which FDI is determined by variables considered in both models (Markusen 2000). Recently, it has also been argued that the determinants and motives for FDI have changed in the process of globalization (Kokko 2002). As a consequence, the traditional determinants of FDI are considered insufficient to induce FDI inflows.

The impact of FDI on economic growth in host countries has also received adequate attention in the literature. The conventional wisdom asserts that FDI plays an important role in capital accumulation and also as a source of knowledge transfer and spillovers (de Mello 1997). Developing countries suffer from low capital accumulation owing to low domestic savings; hence, FDI meets the savings-investment gap. In addition, FDI can lead to improved BOP and offer the much-needed employment opportunities to the surplus labor in these countries. FDI is also considered an important conduit for technology transfer, leading to increased productivity of domestic firms through various channels. Furthermore, it can also generate export spillovers, among other benefits to firms within host countries. Hence, based on the neoclassical view, FDI plays an important role in promoting growth and development in host countries. The structuralists, on the other hand, observe that developing countries fail to benefit from FDI, owing to existing structural rigidities, and advocate for protectionist policies if developing countries are to develop (Burton 1998). However, in recent times there has been the new institutionalist theory, which asserts that markets can work only with good institutions. The government therefore plays an important role in providing institutions, legal framework, incentives, and other related services that facilitate the generation of benefits from FDI (Rodrik 2004). Finally, the dependency theory perceives FDI as a neo-colonial tool, through which developed countries exploit the developing countries; hence, FDI is not desirable for growth and development (Cardoso 1972).
Although it can be argued that this literature is substantial, the empirical findings are rather limited. Evidence from a survey of the literature suggests that existing theories account only partially for the determinants of FDI (Agarwal, 1980) and are still in their infancy (Blonigen 2005). Faeth (2009: 187) further observes that there is no single theory of FDI, but a variety of theoretical models attempting to explain FDI and the location decision of multinational firms. Therefore, any analysis of determinants of FDI should not be based on a single theoretical model.

Similarly, empirical evidence on the impact of FDI on economic growth and development is mixed and often dependent on some other factors such as host country’s absorption capacity and the technology-gap (Reichert & Weinhold 2001; Lall & Narula 2004). The statistical reasons for this inconclusive evidence can be traced to several issues. First, models estimated with time-averaged data lose dynamic information and, owing to both the lack of dynamics and degrees of freedom, run an increased risk of serious omitted variable bias. Second, contemporaneous correlation across the cross-section does not imply causation, and thus these models may suffer from endogeneity biases. In addition, these problems are difficult to address satisfactorily, since suitable instruments are often not available (Tsai 1994; de Mello 1997; Reichert & Weinhold 2001).

Thus, while the importance of FDI has been appreciated over time, several important issues concerning FDI remain unresolved. Of interest in this study are two such issues. First, what are the determinants of FDI? That is, from a developing country perspective, what are the factors that host countries can address or introduce in order to attract FDI? Second, what is the impact of FDI on economic growth? Is it positive as the neoclassical school suggests or negative as the dependency school asserts? These questions have not been adequately addressed in the two countries. In Kenya, for example, only two unpublished studies exist, Mwega & Ngugi (2006) and Ngugi & Nyangoro (2005), which investigate the determinants of FDI in a cross-country context using a Kenyan dummy. Although both papers arrive at different conclusions, they identify macroeconomic environment and institutional factors as important determinants. In Malaysia, several studies have been undertaken in this area (Ang 2008; Pradhan 2008; Choong & Lam 2010). However, these studies ignore political and institutional factors. As a departure from previous studies, this study uses Christiano et al.’s (1996) approach of a basic vector autoregression model (VAR) with a set of factors that affect FDI. Other additional factors that may affect FDI are introduced into the model only when their effect is considered. In this way, the problem of the omitted variable bias is avoided. The problem of having too many variables in a VAR model is also avoided, which makes inference and estimation possible, since few free parameters are estimated.
The results obtained in this study provide evidence in support of growth-led FDI in both countries. This is rather surprising, especially in Malaysia where most studies provide evidence of FDI-led growth. However, we attribute this problem mainly to the omitted variable bias present in those studies. Several variables are found to influence FDI in Kenya. Agglomeration economies, economic growth rates and the nominal exchange rate are important FDI determinants in Kenya. The governance variable is found to affect FDI by enhancing the effectiveness of other determinant factors on FDI, such as agglomeration economies. In Malaysia, agglomeration economies, economic growth, macroeconomic stabilization, infrastructure and institutional factors are found to influence FDI. In addition, financial development appears to affect FDI by enhancing the effect of other variables, such as the economic growth rate, on FDI in Malaysia. Changes in wages as well as trade openness do not appear to be important FDI determinants in either country.

The rest of the chapter is organized as follows. In the first section, an overview of the FDI and economic growth pattern in the two countries is presented. This is followed by a review of the literature in the second section. The third section contains information on data and the empirical analysis and results. This is followed by a final section, which discusses the results and draws a conclusion.

Overview of FDI and economic growth in Kenya and Malaysia

Since independence, Malaysia has always registered on average higher economic growth rates than Kenya. For the period 1960-2000, Malaysia consistently registered an impressive decade average of between approximately 5.8 and 7.8 per cent. This is in comparison with Kenya, which registered a decade average growth rate of between 2 and 7.1 per cent during the same period. However, both countries experienced slow growth during the last decade, having registered an average growth rate of about 4 per cent. The impressive growth rate Malaysia has not only been accompanied by structural transformation but also by a dramatic increase in GDP per capita, which grew from USD 300 in 1960 to USD 7,029 in 2009, in addition to a significant reduction in poverty (Kinuthia 2010b). This is in contrast with Kenya, where the slow growth has resulted in only a marginal increase of per capita GDP from USD 97.6 in 1960 to USD 738 in the year 2009, and where poverty remains high.¹

FDI has been an integral part of the development process in both Kenya and Malaysia. This association dates back to the period before independence when the two countries were British colonies. Prior to Kenya’s independence in 1963, FDI was mainly occupied in both agriculture and manufacturing sectors (Swain-

¹ These figures have been obtained from the World Bank’s World Development Indicators Database (2010).
In Peninsular Malaysia, foreign capital was mainly involved in the production of tin and rubber, which accounted for more than 80 per cent of exports before independence in 1957 (Rasiah 1995: 56). It has been argued by some scholars that Malaysia’s choice to rely on FDI at the initial stages of development was motivated by the threat of communist insurgency, in addition to political motives (Jomo 2007: xv). Both governments offered a wide range of incentives and established institutions through various legislation aimed at attracting foreign investors, with much success.

In the first decade after independence, the two countries experienced high growth rates after embarking on the import substitution industrialization strategy (ISI). There was unprecedented growth of the manufacturing sector, largely dominated by foreign capital. In Kenya, for the period 1954-1963, manufacturing grew by 8.47 per cent annually, and for the period 1964-1970 this sector grew much faster than the whole of the economy and was among the highest growers in Sub-Saharan Africa (Zwanenberg & King 1975: 133). Similarly, in Malaysia, the share of manufacturing in GDP increased from 9.4 per cent in 1960 to 12 per cent in 1970, while the share of industry in GDP grew faster, from 19.4 to 27.4 per cent, during the same period (Table 4.1). However, although the ISI assisted in the diversification of these economies from dependence on primary commodities, it failed to create sufficient jobs due to its capital-intensive nature. In addition, its high import content requirement threatened their BOP position.

Table 4.1  Selected economic indicators for given years for Kenya and Malaysia

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>FDI inflows (million, USD)</td>
<td>Kenya</td>
<td>13.8</td>
<td>79</td>
<td>57</td>
<td>110.9</td>
<td>140.5</td>
</tr>
<tr>
<td></td>
<td>Malaysia</td>
<td>94</td>
<td>933.9</td>
<td>2332.5</td>
<td>3787.6</td>
<td>1387.4</td>
</tr>
<tr>
<td>Exports of goods and services</td>
<td>Kenya</td>
<td>31.9</td>
<td>29.8</td>
<td>29.5</td>
<td>25.7</td>
<td>21.6</td>
</tr>
<tr>
<td>(% of GDP)</td>
<td>Malaysia</td>
<td>50.6</td>
<td>41.4</td>
<td>56.7</td>
<td>74.5</td>
<td>119.8</td>
</tr>
<tr>
<td>GDP growth rates</td>
<td>Kenya</td>
<td>-8*</td>
<td>-5</td>
<td>6</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Malaysia</td>
<td>8*</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>-2</td>
</tr>
<tr>
<td>GDP per capita (current USD)</td>
<td>Kenya</td>
<td>97.6</td>
<td>142.5</td>
<td>446.8</td>
<td>366.6</td>
<td>403.7</td>
</tr>
<tr>
<td></td>
<td>Malaysia</td>
<td>299.9</td>
<td>394.1</td>
<td>1811.8</td>
<td>2431.8</td>
<td>4029.9</td>
</tr>
<tr>
<td>High-tech exports</td>
<td>Kenya</td>
<td>3.91</td>
<td>3.85</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% of manufactured exports)</td>
<td>Malaysia</td>
<td>38.2</td>
<td>59.5</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufactured exports</td>
<td>Kenya</td>
<td>12.13</td>
<td>29.2</td>
<td>20.8</td>
<td>36.5</td>
<td></td>
</tr>
<tr>
<td>(% of merchandise exports)</td>
<td>Malaysia</td>
<td>6.55</td>
<td>18.75</td>
<td>53.78</td>
<td>80.4</td>
<td>69.9</td>
</tr>
<tr>
<td>Manufacture value added</td>
<td>Kenya</td>
<td>9.4</td>
<td>12</td>
<td>12.8</td>
<td>11.7</td>
<td>11.6</td>
</tr>
<tr>
<td>(% of GDP)</td>
<td>Malaysia</td>
<td>8.1</td>
<td>12.4</td>
<td>21.6</td>
<td>24.2</td>
<td>30.9</td>
</tr>
<tr>
<td>Industry value added</td>
<td>Kenya</td>
<td>18.2</td>
<td>19.8</td>
<td>20.8</td>
<td>19</td>
<td>16.9</td>
</tr>
<tr>
<td>(% of GDP)</td>
<td>Malaysia</td>
<td>19.4</td>
<td>27.4</td>
<td>41</td>
<td>42.2</td>
<td>48.3</td>
</tr>
</tbody>
</table>

The negative effects of the ISI strategy and growing income inequalities in Malaysia culminated into race riots in 1969, forcing the government to change its development strategy. In 1970, the New Economic Policy (NEP) was introduced with a dual aim. First, it aimed at reducing and eventually eradicating poverty by raising income levels and increasing employment opportunities for all Malaysians, irrespective of race. Second, it aimed at accelerating the process of restructuring the Malaysian society to correct economic imbalances, so as to reduce and eventually eliminate the identification of race with economic function by 1990 (Jomo 1990a; Kinuthia 2010b). To achieve the objectives of the NEP, the manufacturing sector was identified as an engine for growth for the next twenty years. In addition, although the ISI strategy continued being pursued in some sectors, the economy was reoriented towards exports. The government embarked aggressively on efforts to attract export-oriented industries through various incentives, which saw labour-intensive MNEs relocate to Malaysia (Table 4.1). Kenya during this period continued pursuing the ISI strategy and provided limited incentives towards the export of manufactured goods (Nyong’o 1988).

Since the 1970s, FDI inflows have increased steadily in Malaysia, reaching a peak in the 1990s before declining due to the Asian financial crisis in 1997 and the recent global financial crisis in 2008. Except for the short period between 1980 and 1985, when Malaysia re-introduced the ISI strategy, FDI inflows have largely increased within a liberalized environment. Similar trends can be observed in the manufacturing and industry sectors, manufactured exports, and GDP per capita, which increased tremendously over the years. Moreover, the composition of manufactured goods has changed during this period, with a significant increase in the production of high-tech goods for export, which comprise almost half the manufactured goods exported since the mid-1990s. In Kenya, although FDI inflows have been lower in comparison with Malaysia, they increased by 6 times in the period 1970-1980, before decreasing in the 1990s and increasing only marginally after 2000. This is in spite of Kenya pursuing structural adjustment programs (SAPs) after 1980, aimed at restructuring the economy from being inward-oriented under the ISI to a greater emphasis towards export promotion. The same trend can be observed in the manufacturing and industry sectors, whose shares in GDP have not increased beyond 13 per cent and 20 per cent respectively. Moreover, there has been only a marginal increase in income per capita and manufactured exports. In addition, the percentage share of high-tech goods in manufactured exports remains very low at less than 5 per cent (Table 4.1).

Thus, while Malaysia underwent successful industrialization during this period, Kenya made very little progress. Malaysia’s industrial success has been accompanied by very high FDI levels, while Kenya’s slow growth has been ac-
accompanied by very low levels of FDI. Malaysia’s impressive performance resulted in structural transformation, from being a predominantly resource-based exporter, to becoming the developing world’s sixth-largest exporter of manufactures, just behind the four dragons of East Asia and China (Lall 1995). Malaysia had various sources of FDI over the years. In the 1970s, Japan, the UK, and the US were the main sources of FDI. In the 1980s, Japan was the most important source of FDI, while Singapore was second; the UK and the US were third and fourth, respectively. In the early-1990s, Taiwan became the most important source of FDI, followed by the US and Japan. From the mid-1990s until 2000, the US was the most important source of FDI, followed by Japan and Singapore (Kinuthia 2010a). The main traditional sources of foreign investments in Kenya are the UK, US, Germany, South Africa, Netherlands, Switzerland, and recently China and India (UNCTAD 2005; Kamau et al. 2010).

In terms of existing studies on FDI, two studies have been conducted in Kenya that have addressed the determinants of FDI in a cross-country context, Mwega & Ngugi (2006) and Ngugi & Nyangóro (2005). In these studies, a Kenyan dummy is introduced in a panel estimate of a pool of countries, in order to establish if Kenya is on the regression line. The studies find that Kenya is not unique among other countries, implying that it is subject to similar determinants of FDI to other countries. The first study concluded that FDI in Kenya is mainly determined by the fundamentals as captured by the trading partners’ growth rate, terms of trade shocks, external debt ratio, and the quality of institutions. The second study stressed macroeconomic stabilization as well as the quality of institutions as important FDI determinants. However, neither of these studies examined the impact of FDI on economic growth.

In Malaysia, several studies have investigated the FDI determinants as well as its impact on economic growth, using cross-sectional and time series approaches. Kinuthia (2010a), within a cross-sectional framework and using data for the period 1970-2007, found that financial development and macroeconomic stabilization factors determine FDI. However, the study did not find any strong evidence that FDI causes economic growth. Ang (2008), using data for the period 1960-2005, found that real GDP, growth rate of GDP, financial development, infrastructure development, trade openness, and macroeconomic uncertainty promote FDI. Higher statutory corporate tax rate and the real exchange rate appreciation were found to discourage FDI inflows. Similarly, Choong & Lam (2010), using data for the period 1970-2006, found evidence of the market size hypothesis. In addition, the level of openness and literacy rates were found to have a positive impact on FDI inflows. They also found a bi-directional causality between real GDP and FDI inflows, which is consistent with findings by Chowdhury & Mavrotas (2006), but in contrast with findings by Pradhan (2008), Ang (2009) &
Kinuthia (2010a). However, none of these studies have considered institutional and political factors that may affect FDI inflows.

Data sources and empirical analysis
Following Cheng & Kwan (2000) and Khan & Bamou (2006), the FDI partial adjustment process can be expressed as follows:

\[
fdi_t - fdi_{t-1} = A(fdi^d_t - fdi_{t-1})
\]  

where \(fdi^d_t\) is defined as the desired level of \(fdi\) at time \(t\).

This equation shows that change in the actual \(fdi\) will respond only partially to the difference between desired \(fdi\) and past value of actual \(fdi\). In any given period, a desired level of \(fdi\) may not be realized (as actual \(fdi\) in the next level) because of physical and procedural constraints by MNEs. The parameter \(A\) captures the speed of adjustment to a desired \(fdi\) level. The desired level of \(fdi\) is influenced by a number of host-country factors that influence the decision of foreign investors to do business in the host country, such that:

\[
fdi^d_t = f(D_t, C_t, B_t, E_t)
\]  

where \(D\) represents the size of domestic market, \(C\) represents the cost factors, \(B\) represents potential trade barriers, and \(E\) represents a group of factors that are external to the firm but which are capable of significantly influencing its levels in the production function.

Assuming a linear relationship between these variables and the desired level of \(fdi\), they can be introduced into equation (1) above to yield a log linear multivariate regression model, expressed as follows:

\[
\ln fdi_t = \beta_0 + \beta_1 \ln D_t + \beta_2 \ln C_t + \beta_3 \ln B_t + \beta_4 \ln E_t + \varepsilon_t
\]  

where \(\ln\) represents natural logarithms.

The variables used, their sources, and their periods of coverage are summarized in Table 4.2 below. The dependent variable (FDI) is measured as net inflows per year. The domestic market \(D\) is measured by size of the Gross National Income (GNI). Based on the market size hypothesis, the GNI is expected

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2 Since FDI flows have been going on for a long time, recent and relatively large changes in FDI behavior may not be apparent if FDI stock figures are used. That is, changes in stocks on a year-to-year basis will be quite small when they occur against an absolutely large accumulated base value. As a result, it may be difficult to identify the empirical factors affecting FDI stock values given relatively small variations in the FDI stock-dependent variable. Moreover, inward FDI behaviour is a more comprehensive measure for flows than for stocks (Globerman & Shapiro, 2002). Furthermore, net inflows measure of FDI is the best measure to examine a country’s ability to attract FDI (Jensen, 2003).
to positively affect FDI.\(^3\) C represents several cost factors. First, the real wage rate is used as a proxy for the labour costs. Low wage rates are expected to attract labor-intensive FDI but may also hinder FDI in higher value-added industries.\(^4\) Second is the cost of infrastructure development. A well-developed infrastructure will attract FDI. For lack of a better measure, an infrastructure index was constructed as a proxy to measure the level of infrastructure development. We follow Ramasamy & Yeung (2010) and constructed an infrastructure index with the electricity supply per capita and the number of telephone lines per 100 people. These two components were mean standardized and equally weighted. A positive relationship is expected between the infrastructure index and FDI.\(^5\) The third cost factor is the extent of development in the financial system. A well-developed financial system tends to have a positive impact on FDI since it allows for adoption of best practices and technologies and learning by doing. Money and quasi money (M2) as a share of GDP is used as a measure of financial depth, and a positive relationship with FDI inflows is expected. Finally there are agglomeration economies among cost factors. When agglomeration economies are present, new investors mimic past investment decisions by other investors in choosing where to invest. By locating next to other firms, they benefit from positive spillovers from investors already established there. Common sources of these positive externalities are knowledge spillovers, specialized labour and intermediate inputs (Campo & Kinoshita 2003). Agglomeration economies are proxided by past lags in FDI.

Measuring trade openness (B) of a country has been a subject of debate for a long time. Yanikkaya (2003) has observed that trade liberalization, an important component in trade openness, does not have a simple and straightforward relationship with growth. In addition, for developing countries trade barriers (proxies for trade restrictiveness) are positively and significantly associated with growth. Since openness is not directly observable, nor is there a generally accepted and unique measure derived in theory, the data on export and import duty is used in both countries.

\(^3\) The standard way of measuring the size of the domestic market in host countries has been through the use of GDP. However, GNI is a better measure, as it includes not only the total value produced in a country but also income from investments abroad, minus similar payments made to other countries.

\(^4\) An alternative measure used is GDP per capita, which is considered an implicit measure of the wage rate. However, these measures will also implicitly reflect productivity differences among countries; hence, they will not necessarily reflect differences in unit labor costs, which in principle they are meant to measure.

\(^5\) Several authors have used several variables as proxies for infrastructure – the main ones being internet hosts per 10,000 people, telephone mainlines per 1,000, and millions of kW-h of electricity generated as ratio to GDP (Asiedu 2002; Biswas 2002; Globerman & Shapiro 2002). Ang (2008) used total government spending on transport and communication.
Table 4.2 Variables, definitions and data sources

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Source</th>
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<tbody>
<tr>
<td>FDI</td>
<td>FDI net inflows in million USD, averaged (1970-2009)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>GNI</td>
<td>Real GNI in million USD, average (1960-2009)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Wage</td>
<td>Average real annual manufacturing wage rate (1960-2009)</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>Trade Restriction/</td>
<td>Average of annual export and import duty in Malaysia (1970-2009) and</td>
<td>Ministry of Finance, Malaysia.</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>Inflation rate, consumer prices (annual %) (1961-2009)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Infrastructure index is constructed (1970-2009)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>Institutions</td>
<td>Governance (1972-2009)</td>
<td>Freedom House</td>
</tr>
<tr>
<td>Financial Depth</td>
<td>Money and quasi-money as a share of GDP (M2/GDP): Malaysia (1960-2009) and</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td></td>
<td>Kenya (1962-2008)</td>
<td></td>
</tr>
<tr>
<td>Exchange rate</td>
<td>Nominal exchange rate (1960-2009)</td>
<td>World Development Indicators</td>
</tr>
</tbody>
</table>

Finally, E represents several important variables. First, the rate of inflation and the exchange rate are used as proxies for macroeconomic stability. High inflation will discourage FDI inflows. Similarly, depreciation of the exchange rate will appeal more to foreign investors.6 Second, institutions matter for FDI. Following Mavrotas et al. (2011), two datasets are considered. The first one is the institution freedom index, used as a measure of governance or how the government is run. This dataset pertains more to “economic governance” and covers the size of government expenditure and tax structure, the legal structure and property rights, access to clean money, the freedom of trade internationally, and the regulatory structure. The maximum score in this index is 10.7 Another measure of institutional development is proxied by the Polity IV variable obtained from the Polity dataset that measures how a government is formed and elected/selected. It gives a democracy score between 0 and 10 (the highest). A similar autocracy dataset gives an autocracy a score of between -10 and 0, with -10 being the worst score. The Polity 2 score is a combination of both autocracy and democracy, and a re-

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6 An increase in the exchange rate represents a depreciation in exchange rate (a weakening of the domestic currency against a foreign currency), while a decrease in exchange rate represents an appreciation in the exchange rate (a strengthening of the domestic currency against a foreign currency).

7 An alternative database is Kaufmann indicators from the World Bank. However, this data is only available for 1997 onwards, and hence cannot be used in this analysis.
fection both of a country’s democratic and non-democratic credentials, and the score is between -10 and 10. This is scaled to between 0 and 20 for positive numbers. Well-established democracies, independent judiciaries, and election challenges help to guarantee property rights, ensuring investments are secure in the long term and hence positively impacting FDI. Following this argument, one would expect that higher levels of democracy are associated with more FDI inflows. Yet still, considering both datasets, it is possible to find a well-governed autocracy and a poorly governed democracy, which will affect FDI differently.

Finally, while using high frequency data is preferred when dealing with time series analysis, such data for the stated variables is largely not available. As a result, this study uses annual data and acknowledges the limitations of its reliability. In addition, the analysis is constrained by the precise measures of these variables, such as trade openness and infrastructure, and therefore their proxies are used. Moreover, data obtained from statistical agencies tend to have many errors arising from many sources such as measurements and recording. The results from this study should therefore only be considered as indicative rather than exact relationships.

A summary of statistics as well as a correlation matrix of the variables discussed above is presented in Tables 4.A.1-4.A.4 in the appendix to this chapter. The summary statistics show that for the period 1970-2009, Malaysia on average had higher FDI inflows, GNI, trade openness, investment in infrastructure, and financial depth, and was more democratic compared with Kenya. It also had a lower rate of inflation, a stronger currency, and a lower score in governance compared with Kenya. Moreover, on average the real wage rate in Malaysia appears to have been lower than in Kenya. The correlation matrices show high correlation between some of the variables, which suggests the presence of multicollinearity and the need to include a time trend. Finally, lacking time series data on the manufacturing sector, this study assumes that most of the FDI in Malaysia is efficiency-seeking and mainly located in the manufacturing sector. This is a plausible assumption given Malaysia’s recent industrialization, in addition to findings by some studies such as Lall (1995) and Kinuthia (2010a). In Kenya, on the other hand, there is evidence that FDI is largely market-seeking and has been involved in various sectors, such as horticulture, manufacturing, and tourism (UNCTAD 2005; Kamau et al. 2009).

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8 For a further discussion on the relationship between democracy and FDI, see Li & Resnick (2003).
Empirical estimation and results

For purposes of the estimation, an initial model of FDI determinants is estimated using ordinary least squares (OLS) based on equation (2). This forms the baseline results, which are presented in Table 4.3.

Table 4.3  The OLS results (dependent variable lfdi)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Kenya (K)</th>
<th>Coefficients</th>
<th>t values</th>
<th>Malaysia (M)</th>
<th>Coefficients</th>
<th>t values</th>
</tr>
</thead>
<tbody>
<tr>
<td>lgni</td>
<td>-1.03</td>
<td>-0.38</td>
<td></td>
<td>1.62</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td>lwage</td>
<td>-3.49</td>
<td>-1.48</td>
<td>-0.39</td>
<td>-0.97</td>
<td>-1.94 *</td>
<td></td>
</tr>
<tr>
<td>ltrade openness</td>
<td>0.04</td>
<td>0.04</td>
<td>0.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lfinancial depth</td>
<td>3.03</td>
<td>0.79</td>
<td>-0.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>0.01</td>
<td>0.41</td>
<td>1.58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>exchange rate</td>
<td>-0.05</td>
<td>-1.4</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>infrastructure</td>
<td>-0.13</td>
<td>-0.27</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lgovernance</td>
<td>1.83</td>
<td>0.77</td>
<td>0.29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lpolicy</td>
<td>0.94</td>
<td>0.47</td>
<td>-1.95</td>
<td>-1.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>10.92</td>
<td>0.56</td>
<td>-0.11</td>
<td>-0.02</td>
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<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.24</td>
<td></td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>-0.01</td>
<td></td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of observations</td>
<td>37</td>
<td></td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (9.27)K (9.28)M</td>
<td>0.97</td>
<td></td>
<td>27.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob&gt; F</td>
<td>0.49</td>
<td></td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *, **, *** are 10, 5, and 1 per cent levels of significance, respectively.

Based on the OLS results, no variable is significant in the Kenyan data. In addition, the R² is very low at 0.24, and some of the variables, such as the log of gni, the rate of inflation and the log of infrastructure have unexpected signs. In Malaysia, only two variables are significant: The log of trade openness and the log of financial depth at the 5 and 10 per cent levels respectively. Moreover, the R² is very high at 0.9 and some variables, such as the exchange rate, the log of financial depth and the log of polity have unexpected signs. These results based on OLS cannot be relied upon owing to the presence of non-stationarity contained in time series macro data. Non-stationarity may lead to spurious regressions, where the estimation of parameters in the model produces statistically significant results between time series containing trends that are otherwise random. Moreover, OLS estimates of a single regression tend to be both biased and inconsistent, as they do not take into account the interdependence of the determinants and the consequences of FDI. Therefore, in a cross-sectional context, it is not possible to infer anything more than a contemporaneous correlation between FDI and other variables instead of a long-term relationship.
**Unit root tests**

The stationarity properties of the time series data were investigated using the unit root tests. The results are presented in Tables 4.4 and 4.5 for Kenya and Malaysia, respectively. In addition, a graphical representation of the variables used is given in Figure 4.A.1 in the appendix to this chapter. The non-stationarity test is conducted using the Dicky-Fuller Generalization Least Squares (DF-GLS), while the stationarity test is conducted using the KPSS test (Kwiatkowski et al. 1992).

**Table 4.4**  Unit root test: Kenya

<table>
<thead>
<tr>
<th>Variables</th>
<th>DF-GLS</th>
<th>KPSS</th>
<th>Clemente et al. (1998)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Levels</td>
<td>Difference</td>
<td>Levels</td>
</tr>
<tr>
<td>lfdi</td>
<td>-2.67(7)b</td>
<td>-8.07(2)a</td>
<td>0.09(1)a</td>
</tr>
<tr>
<td>lgni</td>
<td>-1.59(9)</td>
<td>-1.43(8)a</td>
<td>0.4(2)</td>
</tr>
<tr>
<td>lwage</td>
<td>-0.88(0)</td>
<td>-4.56(0)a</td>
<td>0.57(1)</td>
</tr>
<tr>
<td>ltrade openness</td>
<td>-0.95(5)</td>
<td>-3.91(4)a</td>
<td>0.47(2)</td>
</tr>
<tr>
<td>lfinancial depth</td>
<td>-1.57(0)</td>
<td>-4.56(0)a</td>
<td>0.17(3)a</td>
</tr>
<tr>
<td>Inflation</td>
<td>-3.64(0)b</td>
<td>-7.45(0)a</td>
<td>0.13(3)b</td>
</tr>
<tr>
<td>exchange rate</td>
<td>-1.23(0)</td>
<td>-6.07(0)a</td>
<td>0.51(1)</td>
</tr>
<tr>
<td>infrastructure</td>
<td>-0.84(1)</td>
<td>-4.53(0)a</td>
<td>0.18(3)a</td>
</tr>
<tr>
<td>lgovernance</td>
<td>-1.60(0)</td>
<td>-5.33(0)a</td>
<td>0.36(1)</td>
</tr>
<tr>
<td>lpolity</td>
<td>-1.36(0)</td>
<td>-3.31(9)b</td>
<td>0.5(1)</td>
</tr>
</tbody>
</table>

Note: a and b represent statistical significance at the 1 and 5 per cent levels respectively.

+ Structural break not significant in that year.

* The variable with a structural break is stationary.

The numbers in brackets represent the lag length based on the Ng-Perron test.

In addition, structural breaks are tested using the Clemente et al. (1998) innovative outliers (IO) test, which allows for a gradual shift in the mean of the series. This test is considered superior to the others regarding structural breaks. The results from these tests show that, in Kenya, the log of financial depth, the inflation rate, the exchange rate and the log of governance variables are stationary (i.e. they do not evolve through time). The log of the fdi variable is stationary for the first two tests but not after testing for the structural break although it is still inconsistent in the years of significance. It is therefore concluded that it is stationary.

In Malaysia, on the other hand, only two variables are found to be stationary in all the tests: the log of fdi and the log of polity. The rest of the variables are found to be I(1) and in possession of structural breaks. As a result, two dummy variables were introduced from 1987 onwards, marking the period when trade...
liberalization in both countries began in earnest. In Kenya, this was triggered by the desire to implement the SAPs, which had previously forestalled after inception in the early 1980s. The same year was very symbolic in Malaysia, as it marked a complete departure from the second round of import substitution to export orientation, a departure that was accompanied by trade reforms including the removal of FDI restrictions contained in the incentives Act, in the hope that foreign companies would revitalize the economy (Okamoto 1994). Upon estimation, these dummy variables were not found to be significant and are therefore not included in the subsequent VAR estimations.

### Table 4.5 Unit root test: Malaysia

<table>
<thead>
<tr>
<th>Variables</th>
<th>DF-GLS</th>
<th>KPSS</th>
<th>Clemente et al. (1998)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Levels</td>
<td>Difference</td>
<td>Levels</td>
</tr>
<tr>
<td>lfdi</td>
<td>-1.87(8)</td>
<td>-0.88(7)</td>
<td>0.13(3)b</td>
</tr>
<tr>
<td>lgini</td>
<td>-1.73(1)</td>
<td>-3.4(7)b</td>
<td>0.46(1)</td>
</tr>
<tr>
<td>lwage</td>
<td>-2.17(0)</td>
<td>-5.6(0)a</td>
<td>0.1(3)</td>
</tr>
<tr>
<td>ltrade openness</td>
<td>-1.31(0)</td>
<td>-3.98(9)a</td>
<td>0.39(1)</td>
</tr>
<tr>
<td>lfinancial depth</td>
<td>-1.42(3)</td>
<td>-5.41(1)a</td>
<td>0.5(1)</td>
</tr>
<tr>
<td>Inflation</td>
<td>-1.63(7)</td>
<td>-2.12(6)</td>
<td>0.14(2)a</td>
</tr>
<tr>
<td>exchange rate</td>
<td>-1.67(9)</td>
<td>-2.27(8)c</td>
<td>0.43(1)</td>
</tr>
<tr>
<td>lininfrastructure</td>
<td>-2.1(0)</td>
<td>-6.01(0)a</td>
<td>0.29(1)</td>
</tr>
<tr>
<td>lgovernance</td>
<td>-1.43(0)</td>
<td>-5.06(1)a</td>
<td>0.39(1)</td>
</tr>
<tr>
<td>lpolity</td>
<td>-1.78(2)</td>
<td>-6.96(0)a</td>
<td>0.27</td>
</tr>
</tbody>
</table>

*, **, *** statistically significant at the 10, 5, and 1 per cent level, respectively.

### The Vector Auto Regression (VAR) approach

Several approaches have been used to study the FDI-growth relationship. Most utilize the cross-sectional data that often rely on the traditional OLS, which we have used to estimate the baseline equation and whose results are reported in Table 4.3 above. Other studies apply time series techniques such as cointegration and the Granger causality procedure. However, this approach runs the risk of suffering from omitted variable bias since there are many variables that can determine FDI. This chapter utilizes a different time series technique, namely impulse response function and variance decomposition, to analyse the dynamic relationships between the various variables of interest in the VAR. This approach is based on the following VAR specification:

\[
Z_t = A_0 + A_1 Z_{t-1} + A_2 Z_{t-2} + \ldots \ldots + A_q Z_{t-q} + u_t
\]

(1)

The VAR disturbance vector or forecast error \(u_t\) is assumed to be serially uncorrelated with \(Z_t\) and to have a variance-covariance matrix V. These forecast errors should be viewed as a function of the fundamental shocks.
In deciding which variables to include in empirical analysis, there has to be a trade-off. On the one hand, one would like, in principle, to include all the variables in the analysis in one large unconstrained VAR and report the implied system of dynamic response functions. In particular, if $q$ lags of $n$ variables are included in the VAR, then one would have to estimate $(qn+1)n$ free parameters. For even moderate values of $n$, inference and estimation would be impossible. On the other hand, if too few variables are included in the VAR, then one encounters a significant omitted variable bias. With the above consideration in mind, this study follows Christiano et al. (1996), where the vector $Z_t$ always includes the starting variable and the resulting variable but with different sets of transmission variables.

The use of a VAR model has proved to generate more reliable estimates in an endogenous context. It has however, been acknowledged that the use of VAR can be controversial in the econometric literature. The concerns mainly focus on the choice of lag length, the problem of being a-theoretic (it uses less a priori information) and the difficulty of ensuring joint stationarity of all the variables included in the VAR. However, if handled with care, VAR models can be useful tools to examine the relationships among economic variables in a dynamic context (Shan 2002). In this study, the problem of non-stationarity among variables is addressed by taking the first differences of the affected variables. According to Tables 4.4 and 4.5, all the non-stationary variables in levels are found to be stationary in their first difference and are, therefore, included in the VAR model as such. Initially a basic VAR model is specified that contains the following variables: For Kenya the log of FDI, the economic growth rate ($dgni$), the wage rate ($dwage$), the rate of inflation and the nominal exchange rate ($ner$). If we want to access the effect of an additional variable on the log of FDI, that variable is also included in the VAR model.

The lag length of the VAR ($q$) model may be determined using model selection criteria. The general approach is to fit VAR ($q$) models with orders $q = 0, \ldots, q_{\text{max}}$ and chose the value of $q$ that minimizes some model selection criterion. In this study, the model selection is based on Likelihood Ratio tests (LR), Final Prediction Error (FPE), Akaike (AIC), Schwarz Baysian (SBIC) and the Hannan-Quinn (HQIC) information criteria. Based on the AIC and the HQIC, the lag length of the VAR model is selected to be $4^{10}$ (see Tables 4.A.5 and 4.A.6 in the appendix of this chapter).

Using economic theory, the relationship between FDI and economic growth is well documented. Within the neoclassical models, FDI is believed to be an im-

---

10 The study adopts the VAR lag length selection recommended by Doornik & Hendry (1997), starting from a maximum two lags with annual data. The consensus of estimation with two lags is to avoid an overly strong decrease in degree of freedom. The testing begins with a comparison of two lags with annual data. The null hypothesis that the second lag is equal to zero is rejected.
portant source of capital, complements domestic private investment, is usually associated with new job opportunities, enhances technology transfer and boosts overall economic growth in host countries (Chowdhury & Mavrotas 2006). At the same time, market-seeking FDI may be growth-driven. In addition, foreign investors who are especially labour-seeking will inevitably chose countries where labour is cheap. As a result, this study also considers the possible feedback between FDI and growth.

The system diagnostics are presented in Tables 4.A.7 and 4.A.8 in the appendix for Kenya and Malaysia respectively. From these tables, all the variables, with the exception of financial development (lfd), polity (lpolity) and the exchange rate, have stable parameters, serially uncorrelated residuals and insignificant residual skewness. In Kenya, the financial development variable is skewed at the beginning of 1960 and until 1964, as indicated by both the structural break in the unit root tests as well as its graph in the appendix. The exchange rate variable has a unit root and is also skewed. This is mainly because of the period before and after the liberalization of the exchange rate in Kenya in 1990. Finally, the polity variable skewness is largely due to the period before 1970 and after 1990. This marks the era of multiparty politics, which was largely absent during the period 1970-1990. In Malaysia, all the variables are stable and without autocorrelation, with the exception of the financial development variable. Moreover, most of the variables are skewed, which violates the normality assumption. This necessitates the use of dummy variables as well as the need to control for the trend.

According to Shan (2002), the forecast error variance decomposition allows inference over the proportion of the movement in a time series due to its own shocks vs. the shocks to other variables in the system. This breaks down the variance of forecast error for each variable into components that can be attributed to each of the endogenous variables. The impulse response function analysis, on the other hand, traces out the time path of various shocks on the variables contained in the VAR system.

In other words, this approach is to determine how each endogenous variable responds over time to a shock in that variable and in every other endogenous variable. It thus traces the responses of the endogenous variables to such shocks. These two methods allow intuitive insight into the dynamic relationships among the economic variables of interest in the VAR. Table 4.6 contains a forecast vari-

---

11 In economic applications, the multivariate normality assumption is seldom satisfied. However, to preserve the attractiveness of the VAR model, simulation studies have demonstrated that statistical inference is sensitive to the validity of some of the assumptions such as parameter non-constancy, serially correlated residuals, and residual skewness, while moderately robust to others such as excess kurtosis and residual heteroscedasticity. Thus, it seems advisable to ensure the first three are valid (Hendry & Juselius 2000).
The choice of the VAR model is based on Tables 4.A.9 and 4.A.10 in the appendix and should contain a constant term.

Table 4.6 Variance decomposition of five year error variance (ratios)

<table>
<thead>
<tr>
<th>Percentage of forecast error variance in</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lfdi</td>
<td>0.56</td>
<td>0.56</td>
<td>0.48</td>
<td>0.56</td>
<td>0.58</td>
<td>0.45</td>
</tr>
<tr>
<td>economic growth rate</td>
<td>0.16</td>
<td>0.18</td>
<td>0.23</td>
<td>0.17</td>
<td>0.2</td>
<td>0.17</td>
</tr>
<tr>
<td>wages growth rate</td>
<td>0.04</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
<td>0.07</td>
<td>0.03</td>
</tr>
<tr>
<td>Inflation</td>
<td>0.07</td>
<td>0.09</td>
<td>0.02</td>
<td>0.04</td>
<td>0.07</td>
<td>0.18</td>
</tr>
<tr>
<td>exchange rate</td>
<td>0.16</td>
<td>0.1</td>
<td>0.22</td>
<td>0.16</td>
<td>0.02</td>
<td>0.14</td>
</tr>
<tr>
<td>trade openness change</td>
<td>-</td>
<td>0.02</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>lfinancial depth</td>
<td>-</td>
<td>-</td>
<td>0.04</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>infrastructure change</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.03</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>lgovernance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.06</td>
<td>-</td>
</tr>
<tr>
<td>polity change</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.02</td>
<td>-</td>
</tr>
<tr>
<td>Malaysia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lfdi</td>
<td>0.47</td>
<td>0.42</td>
<td>0.32</td>
<td>0.48</td>
<td>0.19</td>
<td>0.48</td>
</tr>
<tr>
<td>economic growth rate</td>
<td>0.08</td>
<td>0.08</td>
<td>0.36</td>
<td>0.05</td>
<td>0.18</td>
<td>0.05</td>
</tr>
<tr>
<td>wage growth rate</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
<td>0.09</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>inflation change</td>
<td>0.21</td>
<td>0.29</td>
<td>0.02</td>
<td>0.03</td>
<td>0.2</td>
<td>0.21</td>
</tr>
<tr>
<td>exchange rate change</td>
<td>0.21</td>
<td>0.13</td>
<td>0.2</td>
<td>0.24</td>
<td>0.26</td>
<td>0.09</td>
</tr>
<tr>
<td>trade openness change</td>
<td>-</td>
<td>0.05</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>financial depth change</td>
<td>-</td>
<td>-</td>
<td>0.05</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Infrastructure change</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.04</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>governance change</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.16</td>
<td>-</td>
</tr>
<tr>
<td>lpolity</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.13</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: The variance decomposition was computed based on five year error variance. The results of the first VAR basic model are presented in Column 1. The effects of other factors on the log of fdi are presented in the subsequent columns. The results are based on the Cholesky forecast-error variance decomposition. Estimates are at the 95% confidence level.

In other words, this approach is to determine how each endogenous variable responds over time to a shock in that variable and in every other endogenous variable. It thus traces the responses of the endogenous variables to such shocks. These two methods allow intuitive insight into the dynamic relationships among the economic variables of interest in the VAR. Table 4.6 contains a forecast variance decomposition of the VAR models estimated for both countries. The choice of the VAR model is based on Tables 4.A.9 and 4.A.10 in the appendix and should contain a constant term.

The VAR basic results reported in Column 1 in Table 4.6 suggest that, in the case of Kenya, innovations in FDI are explained accordingly by preponderance of its own past values (56%), economic growth rate (16%) and the nominal ex-
change rate (16%). These are followed by the inflation rate (7%) and the wage rate (4%). The effect of trade openness on FDI is minimal at 2% as shown in Column 2 of the second VAR estimation. Similarly, the effect of financial depth on FDI is equally small at 4% (Column 3). The change in infrastructure also has a minimal effect on FDI at 3%, but a significant effect on the nominal exchange rate (16%), perhaps because of financing it through external borrowing (Column 4). Improved governance in Kenya appears to enhance the impact of its own past values of FDI on FDI, whereas its direct impact on FDI is 6% (Column 5). Finally, changes in polity do not appear to have a significant effect on FDI (2%) but does minimize the effect of other variables on FDI as presented in Column 6.

In the case of Malaysia, a significant part of the innovations in FDI is explained by its own previous values (46%), as shown in Column 1 in Table 4.6. This is followed by changes in inflation and the exchange rate (21%), the economic growth rate (10%) and changes in the wage rate (8%). The change in trade openness does not appear to directly account for the innovations in FDI (5%) but changes in financial development, while having a limited direct impact on innovations in FDI (5%) significantly boosts the impact of economic growth on FDI (36%), as is presented in Column 3. Changes in infrastructure have a (10%) effect on FDI. In addition, infrastructure enhances the impact of the changes in the exchange rate on FDI as shown in Column 4. Similarly, change in governance appear to have a significant effect on FDI (16%) and enhances other macroeconomic policy variables in impacting FDI. Finally, the polity variable has a significant effect on FDI (13%).

Combining these results, the following conclusions can be drawn. First, the results suggest that the most important factors affecting FDI in Kenya are its own past levels of FDI, the economic growth rate, the exchange rate and governance. On the other hand, FDI in Malaysia is affected mainly by its own past levels, macroeconomic stability i.e. the exchange rate and the rate of inflation, institutions of governance and the state of democracy captured by the polity variable, infrastructure and economic growth. These are the variables that explain a significant part of the forecast error variance of FDI in both countries.

The relationship between FDI and economic growth in both countries is further examined by using the Granger Causality test and the results are presented in Table 4.7 below. On the basis of these results, there is evidence that the economic growth rate affects FDI and not vice versa. Hence, there is no evidence of any direct impact of FDI on economic growth in either country.

After the variance decomposition, the impulse response functions of these variables were estimated. The results are plotted in Figures 4.1 and 4.2 below for Kenya and Malaysia respectively. As suggested earlier, a graphic illustration of the impulse response functions can provide intuitive insights into the dynamic
relationship existence because it presents the response of a variable to an unexpected shock in another over a certain time horizon. In Kenya, the effect of an unexpected shock in economic growth on FDI begins with a sharp increase of more than 20%, reaching its positive peak in the second period before decreasing slowly and in a varied manner. At some point it is negative before the effect disappears over time (Figure 4.1a). The results are consistent with those obtained in Table 4.6, suggesting the importance of economic growth as an FDI determinant.

<table>
<thead>
<tr>
<th>Table 4.7 The Granger causality test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equation</td>
</tr>
<tr>
<td>--------------------------------------</td>
</tr>
<tr>
<td><strong>Kenya</strong></td>
</tr>
<tr>
<td>lfdi</td>
</tr>
<tr>
<td>economic growth</td>
</tr>
<tr>
<td><strong>Malaysia</strong></td>
</tr>
<tr>
<td>lfdi</td>
</tr>
<tr>
<td>economic growth</td>
</tr>
</tbody>
</table>

The effect of a shock in wage rate on FDI is small and initially negative in the first period, before becoming positive in the second period. The effect lasts until the fifth period before dropping in the subsequent periods (Figure 4.1b). Consistent with the results shown in Table 4.6, the wage rate or changes in wages do not appear to be important in influencing FDI in Kenya. Similarly, the effect of a shock in inflation on lfdi is small and positive, lasting until the fourth period, before slowly disappearing (Figure 4.1c). In contrast, the effect of an unexpected shock in the exchange rate significantly affects FDI negatively (20%) in the first period (Figure 4.1d). It then turns positive, reaching a peak in the third period before fluctuating until the eighth period when it disappears over time. This result confirms the importance of the exchange rate as an FDI determinant, as can be seen in Table 4.6.

A shock in the change in trade openness does not appear to have a significant effect on FDI (Figure 4.1e). However, the shock results in FDI fluctuations before the effect eventually disappears after the eighth period. Similarly, a shock in the level of financial depth does not have a significant effect on FDI (Figure 4.1f). It is positive in the first period before becoming negative in the following two periods, before dying off in the subsequent periods. Likewise, FDI does not appear to be affected significantly by unexpected shocks from changes in
Figure 4.1(a-j) Impulse response functions: Kenya

a  Effect of dgni on lfdi

b  Effect of dwages on lfdi

c  Effect of inflation on lfdi

d  Effect of ner on lfdi

e  Effect of dto on lfdi

f  Effect of lfd on lfdi

g  Effect of dinfrastucture on lfdi

h  Effect of governance on lfdi

i  Effect of dpolity on lfdi

j  Effect of lfdi on dgni
Figure 4.2(a-j) Impulse response functions: Malaysia

- a) Effect of dgni on FDI
- b) Effect of dwage on FDI
- c) Effect of dinflation on FDI
- d) Effect of dner on FDI
- e) Effect of dto on FDI
- f) Effect of dfd on FDI
- g) Effect of dinfrastructure on FDI
- h) Effect of dgovernance on FDI
- i) Effect of polity on FDI
- j) Effect of FDI on economic growth
infrastructure, governance or polity (Figure 4.1g-4.1i). These results are largely consistent with those shown in Table 4.6 above. Therefore on the basis of Table 4.6 and the impulse response functions, it can be concluded that FDI in Kenya is determined mainly by its own past values, economic growth rate and the nominal exchange rate. However, as can be seen in Table 4.6, the governance and infrastructure indicator can influence FDI significantly by enhancing the effect on other variables, such as past levels of FDI and the nominal exchange rate. Figure 4.1j below shows that an unexpected shock in lfdi does not have any significant effect on economic growth in Kenya.

In Malaysia, the effect of an unexpected shock in the economic growth rate on lfdi is initially slow in the first periods, before becoming positive and significant (20%) in the third period where it reaches a peak (Figure 4.2a). It then begins to drop off slowly, approaching zero after the fifth period. Unexpected shocks from changes in wages do not appear to have a significant effect on FDI but cause small fluctuations in FDI over long periods (Figure 4.2b). In contrast, unexpected shocks from changes in inflation and the exchange rate on FDI are found to have positive and significant effects (20%) (Figures 4.2c and 4.2d). The effect of their shocks on FDI increases in the first five periods, before decreasing in a fluctuating manner in subsequent periods.

Unexpected shocks from changes in trade openness on FDI do not appear to have a significant effect in the short term (Figure 4.2e). However, the effect on FDI seems to be positive and increases in the long run although not significantly. Likewise, an unexpected shock from changes in financial depth on FDI is not significant (Figure 4.2f). It is initially negative in the first five periods and then becomes positive in the subsequent periods. The effect of unexpected shocks from changes in infrastructure on FDI is positive and significant. It rises to a peak of 10 per cent in the first five periods and then continues fluctuating in the following periods (Figure 4.2g). In contrast to Table 4.6 above, the effects of unexpected shock from governance on FDI do not appear to be significant (Figure 4.2h). However, the effect appears to increase over time. An unexpected shock from polity appears to have a significant effect on FDI after the second period (Figure 4.2i). It reaches a peak (30%) in the sixth period before gradually fading away over time.

Based on Table 4.6 and the impulse response functions, the determinants of FDI in Malaysia are its own past levels, the economic growth rate, changes in inflation and the nominal exchange rate, infrastructure and polity (democracy). In addition, financial depth variable enhances the effects of economic growth on FDI. There results were however inconclusive on the effect of changes in governance on FDI in Malaysia. Other variables such as changes in wages and changes in trade openness do not have a significant effect on FDI in Malaysia.
Finally, Figure 4.2j presents the impact of FDI on the economic growth rate. It suggests that an unexpected shock in FDI does not have a significant effect on economic growth. The shock disappears very quickly in the first period confirming the Granger Causality results that FDI does not have a direct effect on economic growth in Malaysia.

Discussion and conclusion

The aim of this chapter was to establish the determinants of FDI inflows to Kenya and Malaysia in addition to establishing its impact on economic growth. At the outset, it was made clear that although the two countries attracted similar levels of FDI in the 1970s, the reality is different today. While Malaysia has successfully attracted high FDI inflows and become industrialized, Kenya lost its appeal and has attracted low levels of FDI—although not by East African standards—and has thus experienced a reversal of its fortunes. This analysis was conducted using time series data for the period 1960-2009, within a VAR model. However, unlike many studies, this one used response function and variance decomposition to analyse the dynamic relationships between the various variables of interest in the VAR. Due to the challenge of including all variable on interest within one VAR model, this study followed Christiano et al. (1996), where initially the VAR model contains a specific set of variables believed to influence the level of FDI. Other variables were included in the model if their effect on FDI was examined.

Unit root tests showed that some of the variables considered were found to be stationary (not to change over time: I(0)), while others were non-stationary (and changed through time: I(1)). Upon first differencing, all the non-stationary variables became stationary and were then included in the VAR model. The results of the determinants of FDI in Kenya revealed that FDI’s own past values, the economic growth rate and the nominal exchange rate are important factors. In addition, the governance variable, although not appearing to have a significant direct impact on FDI, is found to enhance the impact of other important factors on FDI. In Malaysia, on the other hand, FDI is found to be determined by its own past levels, the economic growth rate, changes in inflation and the nominal exchange rate, changes in infrastructure and the level of democracy. In addition, the study also reveals strong evidence of growth-led FDI in both countries.

The study reveals reasons that may explain why Kenya has attracted much lower levels of FDI since the 1970s compared with Malaysia. First, FDI inflows in both countries appear to be significantly influenced by their own past levels. This could suggest the importance of agglomeration effects in attracting FDI. Information search costs weigh heavily on first-time investors and foreign firms have to rely on other firms in the host country in related industries. FDI also in-
volves a substantial risk and coordination costs. Krugman (1997) observes that as foreign firms face greater uncertainties than domestic firms in host countries, they may have strong incentives to follow previous investors because of the signal they send on the reliability of the host country location. In Malaysia, these results confirm observations by Toganel and Arikawa (2002), who found that agglomeration and industrial estates in the electronic industries as a development policy have had positive effects on firms’ choice of location. They also found that agglomeration can have a larger effect than industrial estates. Hence, huge FDI inflows into Malaysia may have been a sign of approval by existing foreign firms of its favourability as a choice destination, while low levels of FDI in Kenya may be a sign of a negative verdict by existing firms.

Economic growth is the second most important determinant of FDI. This variable is based on the market hypothesis and seems to be the most undisputed variable in the literature (Aggarwal 1980). As FDI is a long-term commitment, a promising future for the host country naturally attracts investments. In this case, Kenya’s slow growth over the last two decades may have sent messages of doubt to potential investors regarding its future economic prospects, especially compared to Malaysia. In addition, FDI in both countries was found to be growth led and FDI does not have a direct impact on economic growth. This result is consistent with findings by Ang (2009) and Kinuthia (2010a) but in contrast with those of Choong & Lam (2010) and Chowdhury & Mavrotas (2006) who have evidence of bi-directional causality between FDI and economic growth in Malaysia. This inconsistency is mainly attributed to the omitted variable bias in these studies.

Macroeconomic stabilization is found to be crucial for FDI inflows. Two important macroeconomic stabilization factors considered in this study are inflation and the exchange rate. Exchange rate devaluation is found to affect FDI positively in Kenya, while changes in the exchange rate affect FDI in Malaysia too. Kenya maintains a market-driven exchange rate, which tends to reflect the state of the economy to the foreign investors. In contrast, Malaysia maintains a managed exchange rate system that is usually fairly stable and therefore it is the changes in the exchange rate system that tend to concern foreign investors. Currency devaluation means a drop in the relative cost of production and the assets of the foreign company thereby increasing the relative attraction of a host country. These results are consistent with other empirical studies that show that a depreciation in currency in the host country attracts FDI, while exchange rate volatility discourages FDI (Ang 2008; Froot & Stein 1991; Kiyota & Utara 2004).

The rate of inflation in Malaysia has a significant effect on FDI inflows while it is found to have had a limited effect on FDI in Kenya. In Malaysia, the rate of inflation has been maintained on average below 5 per cent, whereas in Kenya the
level has remained at more than 10 per cent (see summary statistics in the appendix). High and unpredictable inflation cripples businesses and checks the development of financial intermediation within the private sector (Rogoff & Reinhart 2003). Investors prefer to invest in more financially stable economies that reflect less uncertainty. It is also important to note that macroeconomic stabilization in Malaysia has entailed the use of unorthodox means and in contravention to the neoclassical wisdom. For example, although Malaysia’s pathway through the 1997-1998 crisis included an orthodox adjustment program of the type the IMF might have required, this was soon altered in favour of reflationary monetary policies and the imposition of a short-term capital control regime. These responses took place against a backdrop of political intrigue and drama, but reflected an underlying pragmatism and a recent history of using capital controls and of not turning to the IMF (Jomo 2006). This is in contrast with Kenya that largely embarked on reforms promoted by the IMF and the World Bank under the SAP, especially in the 1980s, and sometimes with very negative results.

Trade openness in both countries does not appear to have had a significant effect on FDI. Asiedu (2002) observed that the impact of trade openness depends on the type of investment. When investments are market-seeking, trade restrictions can have a positive impact on FDI. At the same time, export-oriented investments may prefer to relocate to more open countries since the increased imperfections that accompany trade protection imply higher transaction costs associated with exporting. This latter case seems to be prevalent in Malaysia. The insignificance of the trade openness variable in Malaysia is inconsistent with findings by Choong & Lam (2010) and Ang (2008) for Malaysia, which could be attributed to how trade openness is measured, as well as the omitted variable bias based on the technique they used. Moreover, as Lall & Narula (2004) have observed, trade openness is only one ingredient in attracting FDI. In the absence of absorption capacities therefore, only limited FDI inflows can be expected.

The level of financial depth is also found to have minimal effect on FDI in the two countries. The negative effect of financial depth in Malaysia is not consistent with observations by Ang (2008, 2009), who found a positive and a significant long-term relationship between financial depth and FDI inflows in Malaysia. However, Kinuthia (2010a) observed that when the impact of FDI on economic growth is analyzed, controlling for domestic investment, the financial development variable is positive, which suggests that it is more appealing to domestic firms than foreign-owned firms. This seems to be the case in Malaysia where changes in financial depth seem to enhance the effect of economic growth on

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12 This stems from the “tariff jump hypothesis”, which argues that foreign firms that seek to serve the local markets may decide to set up subsidiaries in the host countries if it is difficult to import their products to the country.
FDI. Akinlo (2002) has also noted that financial deepening may also encourage capital flight by facilitating international capital transfers. Since the financial markets have been liberalized and the international market deregulated, domestic capital might tend to move abroad where risk-adjustment returns are higher.

The change in infrastructure variable is found to have a positive impact on FDI inflows in Malaysia, but minimal effect in Kenya. However, it enhances the effect of the nominal exchange rate on FDI in Kenya. Asiedu (2002) found that infrastructure has had limited impact on FDI in Sub-Saharan Africa. The positive effect of infrastructure in Malaysia has been a part of its strategy to attract FDI, and significant resources have been devoted to its development. The country has a state-of-the-art infrastructure, which makes it an attractive location. Ang (2008) found a positive and significant impact of infrastructure on FDI in Malaysia in the long term. Kenya, on the other hand, neglected its infrastructure over the years, and this has been a concern to many foreign investors.

The institutional variables also reveal interesting results. In Kenya, improved governance has had a positive effect on FDI through enhancing the effects of other variables. In contrast, change in the governance variable in Malaysia has had a significant effect on FDI. In addition, the democracy variable has had a significant effect on FDI in Malaysia but not in Kenya. In the 1980s, Kenya embarked on SAPs aimed at ensuring sound macroeconomic management as well as market efficiency. However, this is not reflected in the democracy variable, which appears not to matter for FDI. This is unlike Malaysia that, although experiencing macroeconomic stabilization, did not undertake such comprehensive reforms as Kenya. In addition, Kenya has suffered from governance problems, which have been compounded by its ethnic diversity allowing for significant rent-seeking behaviour and poor service delivery. As Easterly and Levine (1997) have observed, the effects of ethnic fractionalization partly explain Africa’s growth tragedy, which seems to have been the case in Kenya.

In Malaysia, the governance variable is a reflection of government involvement in the allocation of resources through well-established institutions. This has seen affirmative action implemented in favour of the marginalized groups and has guaranteed political stability, which has made the country more appealing to foreign investors. Malaysia, although a resource-rich country, avoided the resource curse and diversified its economy by various means which saw massive FDI inflows into the manufacturing sector. As Dunning (2005) and Jomo (2007) have observed, volatility in resource revenue and resource dependence, pressure from opposition and marginalized groups – mainly the Bumiputera that are well represented in government – and the Communist threat provided the Malaysian elite with incentives for diversification. The positive impact of institutions in Malaysia is consistent with the findings by Quere et al. (2007) and Kolstad & Vil-
langer (2007) that the quality of institutions may influence FDI since it can raise productivity prospects: Dependable governance infrastructure may attract foreign investment.

Finally, the changes in the wage rate do not appear to have a significant impact on FDI in either country. However studies show that low wage rates should attract labour-intensive industries, which has only happened in Kenya to a very limited extent. In contrast, Malaysia took advantage of cheap labour in the 1970s, but by 1990 the country was already operating at full employment and the labour market was tight.

In conclusion, both countries provide evidence of growth-led FDI. However this does not imply that FDI does not contribute to economic growth but that it does not have a direct effect on economic growth. As will be seen in subsequent chapters, FDI, especially in Malaysia, has an indirect and positive impact on economic growth. The reasons for Malaysia’s success in attracting high FDI inflows compared with Kenya has a lot to do with positive agglomeration economies, economic growth, sound macroeconomic stabilization, successful infrastructure, financial development and institution development. Kenya’s FDI is largely market-seeking, and was operating under a more or less protected environment until recently. The ISI strategy also allows for rent-seeking behaviour and most industries under such a policy may thus be inefficient and have a limited impact on economic growth.

It is also fair to observe that FDI in Kenya has been negligible compared with that in Malaysia. Kenya, thus, stands to greatly benefit if it addresses the impediments to FDI identified above and takes advantage of its surplus labour to attract export-oriented industries, like Malaysia did in the early 1970s.
## Appendix

### Table 4.A.1 Summary statistics: Kenya

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>lfdi (USD Million)</td>
<td>40</td>
<td>3.42</td>
<td>1.24</td>
<td>-0.93</td>
<td>6.59</td>
</tr>
<tr>
<td>lgni (USD Million)</td>
<td>50</td>
<td>4.53</td>
<td>0.56</td>
<td>3.25</td>
<td>5.41</td>
</tr>
<tr>
<td>lwage (USD)</td>
<td>50</td>
<td>4.47</td>
<td>0.40</td>
<td>3.71</td>
<td>5.03</td>
</tr>
<tr>
<td>lntrade openness (USD Million)</td>
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<td>5.16</td>
<td>0.87</td>
<td>3.35</td>
<td>6.17</td>
</tr>
<tr>
<td>lfinancial depth (ratio)</td>
<td>47</td>
<td>3.23</td>
<td>0.58</td>
<td>1.38</td>
<td>3.68</td>
</tr>
<tr>
<td>inflation rate (%)</td>
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<td>8.82</td>
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<td>31.51</td>
<td>28.93</td>
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<td>79</td>
</tr>
<tr>
<td>lninfrastructure (index)</td>
<td>39</td>
<td>1.00</td>
<td>1.11</td>
<td>-0.25</td>
<td>3.96</td>
</tr>
<tr>
<td>lgovernance (index)</td>
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<td>1.56</td>
<td>0.23</td>
<td>1.10</td>
<td>1.87</td>
</tr>
<tr>
<td>lpolity (index)</td>
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<td>1.75</td>
<td>0.69</td>
<td>1.10</td>
<td>2.89</td>
</tr>
</tbody>
</table>

### Table 4.A.2 Summary statistics: Malaysia

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>lfdi (US$ Million)</td>
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<td>7.19</td>
<td>1.26</td>
<td>4.54</td>
<td>9.04</td>
</tr>
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<td>lgni (US$ Million)</td>
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<td>7.34</td>
</tr>
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<td>lwage (US$)</td>
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<td>0.20</td>
<td>3.41</td>
<td>4.32</td>
</tr>
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<td>lntrade openness (US$ million)</td>
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<td>0.60</td>
<td>5.58</td>
<td>7.96</td>
</tr>
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<td>4.87</td>
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<td>3.11</td>
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<td>exchange rate (ratio)</td>
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<td>2.40</td>
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### Table 4.A.3 Correlation matrix: Kenya

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<th>lgni</th>
<th>lwage</th>
<th>lntrade openness</th>
<th>lfinancial depth</th>
<th>inflation (%)</th>
<th>exchange rate</th>
<th>lninfrastructure</th>
<th>lgovernance</th>
<th>lpolity</th>
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<tr>
<td>lgni</td>
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<tr>
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<td>-0.04</td>
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<td>0.90</td>
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### Table 4.A.4 Correlation matrix: Malaysia

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<th>lfd</th>
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<th>ner</th>
<th>linf</th>
<th>lgovt-n</th>
<th>lpolity</th>
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<tr>
<td>lgni</td>
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### Table 4.A.5 Lag selection criteria: Kenya

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<th>FPE</th>
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<th>HQIC</th>
<th>SBIC</th>
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* critical values for choice of lags

### Table 4.A.6 Lag selection criteria: Malaysia

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<th>DF</th>
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<th>FPE</th>
<th>AIC</th>
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* critical values for choice of lags

### Table 4.A.7 Diagnostic test statistics for individual equations: Kenya

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<th>Variables</th>
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<th>EX.K</th>
<th>Jarq-Bera</th>
<th>Stability</th>
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*** actual value greater than the optimal value in each case
### Table 4.A.8 Diagnostic test statistics for individual equations: Malaysia

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<th>Stability</th>
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*** actual value greater than the optimal value in each case

### Table 4.A.9 Model selection test: Kenya

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</table>

* critical value for the rank, used in model selection

### Table 4.A.10 Model selection test: Malaysia

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* critical value for the rank, used in model selection.
Figure 4.A.1 Kenya variables
Figure 4.A.2  Malaysia variables