



Impact of Foreign-Owned Banks on Economic Development

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6.1 ECONOMIC GROWTH AND FINANCIAL DEVELOPMENT: THEORY AND EVIDENCE

Two main paradigms characterize growth economics: the neoclassical or exogenous growth theory (better known as the Solow model) and the endogenous growth theory.

In the neoclassical paradigm, the growth process is described by only two equations: (i) a production equation that expresses the current flow of output goods as a function of the current stocks of capital and labour, and (ii) a law of motion that shows how capital accumulation depends on investments and capital depreciation. The main idea of the Solow model is that per capita GDP (the measure of economic growth) cannot grow in the long run, unless we assume that productivity—an important component of the production equation—also grows over time, thanks, for instance, to some sort of “technical progress” which can drive economic growth. Such technical progress is totally exogenous and cannot be explained.

Endogenous growth theories are, instead, theoretical frameworks in which productivity growth is endogenous and dependent upon certain characteristics of the economic environment. As Rodrik (2011) highlights,

economic convergence “depends on policies, institutions and other country specific circumstances” such as the saving rate or the demographic rate. Institutions, in particular, may include a wide variety of formal and informal rules, such as property rights, contract enforcement, judicial system’s effectiveness, the quality of regulation and governance, political stability, and financial stability (Rodrik 2000).

Among these models, the one that considers and incorporates the role of the financial system is known as the Schumpeterian growth theory as it involves the force that in the early 1900s economist Joseph Schumpeter called “creative destruction”. In particular, Schumpeter argued that the services provided by financial intermediaries are essential for technological innovation and economic development. The studies of Aghion and Howitt (1992, 1998) and King and Levine (1993a, b) are the most prominent attempts to incorporate Schumpeter’s qualitative ideas into a quantitative model, which could also be used for empirical tests of the influence of finance on economic growth.

In order to see the role that finance plays in the growth process, one needs to take market frictions into account: for instance, the difficulties that a firm/entrepreneur might have financing investments that drive growth. When market frictions are taken into account, then financial markets and intermediaries might have a causal impact on economic development. Indeed, theory provides that effective financial institutions (markets and intermediaries) help overcome market frictions introduced by asymmetric information and transaction costs; in this way, they foster economic growth through five main channels (Levine 2005).

Specifically, financial systems (1) produce *ex ante* information about possible investments and allocate capital; (2) monitor investments and exert corporate governance after providing finance; (3) facilitate trading, diversification, and management of risk; (4) mobilize and pool savings; and (5) ease the exchange of goods and services.

Table 6.1 reports and describes the above functions, highlighting which financial institutions provide them; it explains the effects on economic growth and the conditions under which financial institutions can foster growth; finally, it quotes relevant literature that theorizes the link between finance and growth.

In sum, theoretical literature on financial intermediation predicts that an efficient and well-developed financial system can help increase economic growth rates through improved capital accumulation and higher productivity growth.

Table 6.1 Review of theoretical literature on finance and growth

<i>Functions</i>	<i>Description</i>	<i>Main characteristics of intermediaries/markets</i>	<i>Effects on growth</i>	<i>References (in bold studies that directly theorize the link between finance and growth)</i>
Evaluate projects	Financial intermediaries (FIs) reduce the cost of acquiring and processing information	Efficiency in screening Efficiency in venture capital investment	Improving the ex ante assessment of investment opportunities has a positive spillover effect on resource allocation (and therefore accelerate economic growth) Boost the rate of technological innovation by identifying those entrepreneurs with the best chances of successfully initiating new goods and productions	Greenwood and Jovanovic (1990) King and Levine (1993a, b), Galeovic (1996), Blackburn and Hung (1998), Morales (2003), Acemoglu et al. (2003)
	Financial markets (FMs) stimulate the production of information about firms	Large size and liquidity; market efficiency	Valuable information has positive implications for capital allocation	Grossman and Stiglitz (1980), Kyle (1984), Holmstrom and Tirole (1993), Aghion and Howitt (1998)

(continued)

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<i>Functions</i>	<i>Description</i>	<i>Main characteristics of intermediaries/markets</i>	<i>Effects on growth</i>	<i>References (in bold studies that directly theorize the link between finance and growth)</i>
Exert corporate control (which is central to understanding economic growth)	Liquid equity markets Debt contracts	Stock options to align manager compensation to firm performance Easiness of takeovers Debt instruments used by firms	Well-functioning stock markets foster corporate governance which directly impact firm performance Debt contracts arise to lower the cost of monitoring firm insiders; reduce managerial slack and accelerate the rate of firm innovation	Jensen and Meckling (1976), Diamond and Verrecchia (1982), Jensen and Murphy (1990) Scharfstein (1998), Stein (1988) Gale and Hellwig (1985), Boyd and Smith (1994), Aghion et al. (1999)
	Banks	Economize on monitoring costs and reduce credit rationing	Specialize in ex post monitoring (delegated monitors of dispersed investors)	Diamond (1984), Bencivenga and Smith (1993), Sussman (1993), Harrison et al. (1999), Boyd and Smith (1992), De La Fuente and Marin (1996)
Facilitate risk management	FIs and FMs ease the trading, hedging, and pooling of risks with implications for resource allocation and growth	Markets allow agents to hold diversified portfolios	Cross-sectional risk diversification services can affect long-run EG by altering resource allocation and saving rates Intertemporal risk sharing by FIs which invest with a long-run perspective and smooth interest rates across business cycles Liquidity risk is associated with projects requiring a long-run commitment of capital; both stock market and banks may enhance liquidity and influence EG	Allen and Gale (1997) Levine (1991), Diamond (1991), Bencivenga and Smith (1993)

Ease the mobilization (pooling) of savings	Pooling of resources helps overcoming transaction costs (firms mobilizing savings from different individuals) and information asymmetries associated with making savers feel comfortable in relinquishing control of their savings	FIs invest in their reputation as safe haven; diversification applies to FIs portfolios	Effective pooling individuals' savings affects EG by increasing scale and overcoming investment indivisibilities	Sirri and Tufano (1995), Acmoglu and Zilibotti (1997)
Facilitate exchange	Financial arrangements which lower transaction costs can promote specialization, tech innovation and growth		Markets that promote exchange encourage productivity gains	Greenwood and Smith (1997)

Source: Own work

However, theory also hosts contrarian voices which warn against potential negative effects on economic growth from an “excess” of financial deepening; better resource allocation and lower risks may depress saving rates to such an extent that the overall growth rates actually drop with enhanced financial development (King and Levine 1993a, b; Bencivenga and Smith 1993). Besides, a well-functioning and large financial sector will compete with the real sector in attracting resources—for instance, the best human resources—with potential negative repercussions for growth (Philippon 2010; Bolton et al. 2011). More recently, financial instability stands in the dock as the main cause of the economic depression that advanced countries are experiencing since the burst of the financial crisis in 2007.

Another point under discussion is whether finance is an important driver of economic growth at any stage of economic development or it instead plays a role up to a certain level of income per capita, with the positive relationship being the strongest among low- and middle-income countries which are catching up with high-income countries. Besides, considering that after reaching the status of a middle-income economy, many developing economies have failed to converge to their high-income peers and a “middle-income trap” has been theorized (Eichengreen et al. 2011, 2013; Agénor et al. 2012); the initial advantages of a catching-up economy may disappear once a certain level of development has been reached, that is, when the fuel for economic growth is innovative and technologically advanced production for which the economy does not have the level of capital and the quality of human capital necessary to sustain such a process.

Finally, financial innovation seems to be a relevant ingredient of economic growth as long as financiers themselves innovate. Laeven et al. (2015) theorize and empirically test the conjectures that: (i) technological and financial innovations are positively correlated; and (ii) economic growth will eventually stagnate unless financiers innovate. Obviously, not all financial innovations promote economic growth. Financial innovation has played an important role in triggering the recent global financial crisis (GFC). However, the model stresses the idea that financial innovation is necessary for sustaining economic growth.

The empirical research on the finance and growth nexus has produced a substantial body of studies growing constantly since the seminal work of Goldsmith (1969), who was the first to empirically show the positive correlation between financial development and GDP per capita, on a sample of 35 countries over the 1860–1963 period. Yet the strand of research linking finance to growth in a methodologically robust manner can be

traced back to the pioneering works by King and Levine (1993a, b). The authors, using panel data for 80 countries over 1960–1989, were the first to prove that various measures of financial development levels were positively related to GDP per capita growth via productivity improvements. Using a different methodology—vector error correction models (VECM)—Rousseau and Wachtel (1998) proved, for the main industrialized economies, the long-run causality between the measures of financial intensity and real per capita levels of output. The positive relationship between the exogenous components of financial development and economic growth was later confirmed by Levine et al. (2000) for a panel of 74 countries over the extended period of 1960–1995. In addition to banks, Levine and Zervos (1998) showed that stock markets also contribute to long-run growth, capital accumulation and productivity improvements. Therefore, they should be analysed simultaneously. The long-run equilibrium relationship between development of banking and stock markets and economic growth was confirmed for a sample of 13 EU countries during 1976–2005 (Wu et al. 2010), though the study also uncovered a negative short-run effect between liquidity and economic development.

Advances in computational capacity and availability of large cross-country data sets with relatively large time dimensions helped in making progress in the methodological aspects of the empirical research, whose efforts were mainly devoted to say a final word, in sound and sophisticated econometric models, about the causal links between finance and growth, so as to address biases introduced by measurement errors, reverse causation and omitted variables' problems (Beck 2008). Although complete unanimity does not exist, the bulk of empirical research on the mechanisms through which finance affects growth suggests that (Levine 2005): (a) countries with better functioning banks and markets grow faster; (b) simultaneity bias does not seem to drive these conclusions; and (c) better functioning financial systems ease the external financing constraints that impede firm and industrial expansion.

Prominent qualitative surveys of this empirical literature are that of Levine (2005), Beck (2008, 2011, 2013) and Popov (2017), acknowledging that countries with better functioning banks and markets grow faster since the financial system, when working efficiently, can ease the external financing constraints that impede firm and industrial expansion. More recent quantitative surveys based on meta-analysis (Valickova et al. 2015; Arestis et al. 2015) attempted to address and uncover the reasons why the empirical literature has yet reached a unanimous consensus after almost five decades of extensive research.

The ambiguity in the direction and strength of the finance and growth nexus might indeed have several causes: (i) the choice of proxies for financial variables; (ii) the scope of data used; or (iii) the estimation approach applied (e.g. addressing or ignoring the issue of endogeneity).

As far as the first motivation, notwithstanding the methodological achievement in investigating the link between finance and growth, measures of financial development used in the literature (i.e. private credit to GDP, stock market capitalization to GDP) are mainly those traditionally proposed since the seminal works by King and Levine (1993a, b) and Atje and Jovanovic (1993). This choice has a main drawback as pointed out by Levine (2005), which is that the empirical literature on finance and growth suffers from an insufficiently precise link between theory and measurement. In fact, if theory focuses on particular functions provided by the financial sector—producing information, exerting corporate governance, facilitating risk management, pooling savings and easing exchange (see Table 6.1)—and how these functions influence resource allocation decisions and economic growth, empirical works too frequently fail to directly measure these financial functions and employ the simple “size” of the financial system as a proxy for financial development. To overcome these shortcomings, a new comprehensive index, capturing both financial institutions and markets, has been constructed based on a new database made publicly available by the IMF and the World Bank (Čihák et al. 2012; Sahay et al. 2015) and a number of other important sources of data.¹ Financial institutions include banks, insurance companies, mutual funds, pension funds, and other types of non-bank financial institutions. Financial markets include mainly stock and bond markets. Different dimensions of the financial system are measured: depth, access, efficiency and stability (see Table 6.2). As Sahay et al. (2015) show, banking system credit to the private sector, while still being a relevant component of financial development, reflecting the role of banks in many financial systems, is far from being the only driver of the economic growth. In the following years, this new index will prove relevant in advancing our knowledge on the finance and growth nexus, when long series of data will be available for emerging countries on various aspects of their financial architecture.

As regards the second issue, that is the number of countries or time periods under investigation, Arestis et al. (2015) highlight how these aspects of data characteristics can impact the results and explain the observed heterogeneity in the literature. The growth-finance literature reveals large differences in the number of countries examined by each

Table 6.2 Financial development index

<i>Depth</i>	<i>Access</i>	<i>Efficiency</i>	<i>Stability</i>
Financial institutions	Private sector credit to GDP; Financial institutions' assets to GDP; M2 to GDP; Deposits to GDP; Gross value-added of the financial sector to GDP	Accounts per thousand adults; branches per 100,000 adults; per cent of people with a bank account; per cent of firms with line of credit (small); per cent of firms with line of credit (all)	Z-score (or distance to default) capital adequacy ratios; asset quality ratios; liquidity ratios; other
Financial markets	Stock market capitalization plus outstanding domestic private debt securities to GDP; private debt securities to GDP; public debt securities to GDP; international debt securities to GDP; stock market capitalization to GDP; stocks traded to GDP	Per cent of market capitalization outside of top ten largest companies; per cent of value traded outside of top ten traded companies; government bond yields; ratio of domestic to total debt securities; ratio of private to total debt securities (domestic); ratio of new corporate bond issues to GDP	Volatility of stock price index, sovereign bond index; skewness of those indices; vulnerability to earnings manipulation; price/earnings ratio; duration; ratio of short term to total bonds; correlation with major bond returns

Source: Based on Čihák et al. (2012)

study, with some studies focusing only on one country and others using extended set of economies pertaining to different regions (also diverse as far as their level of development, in terms of per capita GDP); differences also exist between studies that rely on cross-sectional data or time series data or finally make use of panel data. According to the authors' meta-regressions based on 118 empirical papers published between 1993 and 2013, using either panel data or time series tends to produce lower partial correlation than using cross-sectional data. This is robust evidence that the kind of input used plays an important role in explaining heterogeneity in the studies. Furthermore, the coefficient of the "number of countries" variable and of the "homogenous" variable (i.e. whether the examined set of countries are homogeneous in terms of per capita GDP) comes with a different sign according to the specific statistical methodology used (OLS, fixed effects, or random effects estimations). However, their magnitude is quite low, suggesting that their influence is not economically meaningful.

Similar findings are uncovered by Valickova et al. (2015), who also apply meta-analysis on 67 empirical studies. In particular, studies that combine different regions should be carefully interpreted as the growth effects appear to depend on the level of economic development, as stressed by Rioja and Valev (2014) and Rousseau and Wachtel (2011) or Beck (2013), who showed that the positive finance and growth relationship is most evident in low- and middle-income countries. The meta-analysis results suggest that the number of countries as well as the sample size included in the analysis matters for the reported results; cross-sectional studies and time series studies report, on average, larger effects than studies using panel data, partially confirming the results by Arestis et al. (2015). Besides, the variable capturing the number of years in the data set is found to be positive and significant, that is, studies examining longer time horizons generally report larger effects of finance on economic growth.

What a non-negligible body of recent empirical studies put under question is the presence of a linear relationship between finance and growth. A growing number of studies started to point to the existence of a threshold of growth-enhancing impact of financial development. Rousseau and Wachtel (2011) show that, when the post-1990 data are used, the positive relationship between finance and growth is not as strong as it was in the past. In a similar vein, Demetriades and Rousseau (2016) show on a sample of 91 countries over 1973–2004 that financial depth is no longer a significant determinant of long-run growth. Valickova et al. (2015) support this evidence, adding that the effect of finance on growth weakens in the 1990s and

is generally stronger in wealthier countries. Further, Arcand et al. (2015), using different data sets and empirical approaches, provide evidence that there can be a limit to the positive effects of the expansion of finance, after which there is indeed “too much” finance. In particular, their results show that the marginal effect of financial depth on output growth becomes negative when credit to the private sector reaches 80–100% of GDP.

As for the differences in the research design due to the estimation approach adopted, the interested reader can refer to Beck (2008) as the main reference to review different econometric methodologies used in the literature to assess the relationship between financial development and growth. The study illustrates the identification problem, which is at the centre of the finance and growth literature. The meta-analysis studies suggest that it is important to control for endogeneity when estimating the effect of finance on growth. Studies using OLS find on average larger effects than studies that account for endogeneity—for example, using instrumental variables or panel data methods, with generalised method of moments (GMM) being nowadays the most popular econometric method employed in the most recent studies on finance and growth. Indeed, just some older studies from the 1990s of the previous century and the initial years of 2000s are cross-sectional analysis, based on OLS estimations only; virtually, all contemporary research is on the country level and is based on panel data. Basically, three main subtypes of analyses can be pointed out: VAR approach, cointegration analyses and “Barro-type” approach, while other types of approach are quite rare. The VAR or Error Correction Model (ECM) approach (Shan 2005; Tennant and Abdulkadri 2010) is the least theoretically motivated one. The cointegration-type analyses (de Mello 1999; Buch et al. 2003; Handa and Khan 2008), make use of cointegrating equation to find whether a long-run equilibrium exists between the independent and the dependent variables. This is supposed to answer the question of whether the relation between them is not spurious, especially if the variables of interest are integrated of order higher than one—recent developments in the panel data analysis that include second-generation tests of cointegration facilitate this aim. Nevertheless, the short time series which constitute most panels have a very negative influence on the power of the tests used. Given that typical research in this field is based on the country-level panel data with a group of at least a few countries included in the analysis, the natural approach to the GDP growth equation is based on the so-called Barro regression, which stems from Solow’s model. It is assumed that the growth of GDP is a (log linear) function of the earlier GDP level and a group of potential

growth factors. The latter include a wide variety of variables (with hundreds of possibilities considered in the literature); some of which are related with the banking sector. Such a type of regression is easily estimated if cross-sectional data are used, as it is the case in the 1990s of the previous century (and still can be found, mostly in the form of robustness check, but sometimes also as the main tool—for example, Alfaro et al. 2004 or Buch and Toubal 2003). The use of panel data complicates the estimation process significantly. Some authors still apply the more traditional estimation approaches, such as the fixed effects (Eller et al. 2005; Chee and Nair 2010) or random effects (Bevan and Estrin 2004; de Haas and van Lelyveld 2006), although these are not statistically correct in view of the dynamics of the model of interest. A step forward includes instrumental variables (Borensztein et al. 1998). Nowadays, however, the most popular approach is based on the general method of moments. The Arellano and Bond's "difference estimator" can be found as a tool (Carkovic and Levine 2002; Akimov et al. 2009); however, the theoretical papers published at the end of the previous century suggest that such an estimator lacks efficiency and—most importantly—suffers from the small sample bias, especially if strong autoregression is incurred. While the latter is almost surely present due to the existence of strong GDP beta convergence, Blundell and Bond's GMM estimator is currently the most popular one. Its use can be found in papers by Carstensen and Toubal (2004), Carkovic and Levine (2002), or Compton and Giedeman (2011). Still, some criticize GMM on the basis of too little sample size. Indeed, this method was invented typically for microeconomic data. Although it is widely applied in macroeconomic research, some authors prefer to use methods which do not require the large number of units for asymptotics, such as the pooled mean group estimator (Cheng et al. 2014) and group mean dynamic OLS (Herzer 2012). Although the above-discussed (log) linear models dominate, some partly non-linear approaches can be found in the literature. Those include threshold models estimated with conditional OLS (Lensink and Hermes 2004; Lensink and Murinde 2006); however, this group of models has not gained much popularity.

Having briefly depicted the current status of the theoretical literature on the finance and growth nexus, we now turn our attention to the main findings of studies, specifically focused on investigating such a link in our sample of transition economies.

6.2 FINANCE AND GROWTH IN CESEE COUNTRIES

Focusing on studies specifically investigating the issue of growth and finance in transition economies or subregions such as the CESEE countries, we can highlight that this link is significantly weaker with respect to developed and high-income economies; in fact, in catching-up countries with younger and relatively less developed financial systems, the finance and growth nexus is less evident.

Table 6.3 presents a summary of the main results of these studies that in the last 15 years focused on the CESEE countries.

Berglof and Bolton (2002) investigated the experience of the transition economies in the first decade of their transformation from a centrally planned to a market economy to derive evidence on the link between finance and economic growth, that is, to give answers to the questions of whether it is possible “*to engineer a development take-off by creating a modern financial architecture from scratch*” or whether “*financial institutions and markets are just a reflection of underlying conditions in the real sector*” (p. 78). The authors analysed the great divide between transition countries where economic development had already taken off (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia and Slovakia) and those caught in a vicious circle of institutional backwardness and macro instability (Bulgaria, Romania, Russia, and Ukraine). This great divide was present in every measure of economic performance: GDP growth, investment, government finances, growth in inequality, and general institutional infrastructure. These measures were weakly linked to measures of financial development, like domestic credit to the private sector to GDP, index of financial reforms, concentration ratio in the banking sector, the loan-deposit rate spread or the number of companies listed on the stock market. As a matter of fact, the authors illustrate that the reason why some countries were able to cross the “great divide” while others did not was to be found to a large extent outside their financial systems. Differences in fiscal and monetary discipline and low enforcement capacity of governments, excessively committed to bailout policies, were indeed considered by the authors as the leading explanations for the observed variation in economic development across transition economies.

However, more advanced transition economies shared the following three key features. First, they all have converged to mainly bank-based financial systems with a significant fraction of foreign bank ownership. These banks were playing a limited role in financing investments and firms

Table 6.3 Review of empirical literature in CESEE countries

<i>Authors (year)</i>	<i>Sample</i>	<i>Period</i>	<i>Economic growth variables</i>	<i>Financial development variables</i>	<i>Research method</i>	<i>Effects of finance on economic growth</i>	<i>Key findings</i>
Berglof and Bolton (2002)	CZ, EE, HU, PL, LT, LV, SI, SK, BG, RO, UK	1993–1997	GDP growth, investments, inequality, government finances	Domestic credit to the private sector/GDP; C3assets/total banking sector assets; number of banks; bad loans/total loans; interest rate spread; number of listed companies	Correlation between relevant variables	Weak correlation	Countries on the prospering side had converged to a bank-based financial system, with a significant fraction of foreign bank ownership. Local markets declined and local firms preferred to be listed in foreign well-known stock exchanges
Koivu (2002)	AL, RO, HU, SK, Belarus, SI, BG, LT, HR, CZ, LT, Moldova, UK, EE, PL, Macedonia + other transition countries	1993–2000	Real GDP growth	Interest rate margin, domestic credit to the private sectors/GDP	Fixed effects panel model	Interest rate margin (-); credit (-)	The relationship between the amount of credit to the private sector and economic growth is not clear; causality seems to run mostly from economic growth to credit growth

Mehl and Winkler (2003)	SEE	1993–2001	Real GDP per capita growth	Domestic credit to the private sector/GDP; broad money/GDP	OLS, 2SLS, 2SLS and country fixed effects	None statistically significant	Reforms failed to prevent inflationary finance and crises, contributing to large output losses. Subsequent tightening of regulation and supervision, as well as the opening of domestic banking sectors to foreign investors positively changed the environment of the SEE financial sectors
Dawson (2003)	BG, RO, HU, SK, SI, LT, CZ, LT, Moldova, UK, EE, PL, Russian Federation	1994–1999	Real GDP growth	Liquid liabilities (M3)/GDP	Panel model	Positive but not significant	Economic growth in CEECs was not constrained by underdeveloped financial sectors (as they are at the time of investigation)
Fink et al. (2009)	BG, CZ, HU, SI, SK, PL, RO, MT, TK plus mature economies	1996–2000	Real GDP per capita growth	Domestic credit /GDP; private credit/GDP; stock market capitalisation/GDP; bond outstanding/GDP	Panel model	Domestic credit (+); bond outstanding (+); capital stock (+); all other variables non-significant impact on growth	Some evidence that total financial intermediation contributed to economic growth and stability. Unlike private credit, which was never significant, domestic credit made an important contribution to economic growth

(continued)

Table 6.3 (continued)

<i>Authors (year)</i>	<i>Sample</i>	<i>Period</i>	<i>Economic growth variables</i>	<i>Financial development variables</i>	<i>Research method</i>	<i>Effects of finance on economic growth</i>	<i>Key findings</i>
Akimov et al. (2009)	AL, Belarus, Bosnia H, CZ, Macedonia, EE, HU, LT, LV, Moldova, PL, RO, Russia, SK, SI, UK + other transition countries from Central Asia and East Asia	1989–2004	Real GDP growth	M2/GDP, claims on the non-financial sector/total domestic credit; credit to private sector/GDP; commercial bank assets/commercial bank + central bank assets	Fixed effect panel model; dynamic panel model	Positive and significant	The positive link that exists between financial development and economic growth is invariant with the choice of financial proxies
Carp (2012)	Romania	1995–2010	Real GDP growth	Stock market capitalization/GDP; turnover ratio; stock value traded/GDP	VAR model	GDP growth rate and turnover ratio show positive bidirectional Granger correlation	No effect in the long run, except for bidirectional correlation between GDP growth rates and turnover ratio

Hassan et al. (2011)	EE and Central Asia, among many other regions	1980–2007	Real GDP growth	Domestic credit to the private sector/GDP; domestic credit by bank sector/GDP; M3/GDP; gross domestic savings/GDP, stock market cap/GDP, stock market total value traded/GDP	Fixed effects panel estimation; VAR model	No statistically significant effects	Domestic credit and growth show bidirectional correlation; a shock in gross domestic savings cause growth to increase
Yu et al. (2012)	EE and Central Asia, among many other regions	1980–2009	Real GDP growth	Domestic credit to the private sector/GDP; domestic credit by bank sector/GDP; M3/GDP; gross domestic savings/GDP, stock market cap/GDP, stock market total value traded/GDP	Fixed effects panel estimation; VAR model	No statistically significant effects	No Granger causality between GDP growth rates and financial development proxies
Barajas et al. (2013)	150 countries including AL, BG, LT, Moldova, RO, UK and other Central Asia economies	1975–2005	Real GDP per capita growth	Private credit/GDP; stock market cap/GDP; stock market turnover/GDP	Dynamic panel model		Positive and significant effect of credit on growth

(continued)

Table 6.3 (continued)

<i>Authors (year)</i>	<i>Sample</i>	<i>Period</i>	<i>Economic growth variables</i>	<i>Financial development variables</i>	<i>Research method</i>	<i>Effects of finance on economic growth</i>	<i>Key findings</i>
Petkovski and Kjosovski (2014)	16 transition economies from Central and SEE	1991–2011	Real GDP growth	Net interest margin, private credit/GDP	Dynamic panel model	Interest margin (–) not significant; Private credit (–) and significant	The large stock of NPLs and the banking crises experienced at the beginning of the transition period hindered the growth-enhancing role of the banking sector. It is relevant to implement an institutional environment where banks and bank credit can deliver their positive effects
Caporale et al. (2015)	Ten new EU members (BG, CZ, EE, Hu, LT, LV, PL, RO, SK, SI)	1994–2007	Real GDP per capita growth	Domestic credit to the private sector /GDP, stock market cap/GDP, Net interest margin, Liquid liabilities/GDP	Dynamic panel model	Stock market cap (+); liquid liabilities (+); NIM (–) and significant	The underdevelopment of stock and credit markets, with the consequent lack of financial depth, remains one of the main features of these economies

Source: Own work

could finance their investments almost exclusively from retained earnings or through foreign direct investments, which corroborates the evidence that finance was not strongly correlated to economic growth. Second, the ownership structure of banks and firms was concentrated and turnover of shares in the stock market was low, while the number of listed companies was diminishing as a result of foreign acquisitions, mergers and subsequent delisting. Besides, most of the best firms showed a preference in listing abroad, in more liquid and attractive US or EU markets. Finally, bank spreads showed a declining path, in the level and volatility, though they remained high by the standards of developed market economies, which explained, as we showed in Chap. 3, the great interest of foreign banks to enter these banking markets.

In the same year, Koivu (2002) reached a similar conclusion, using panel data from 25 transition countries over the 1993–2000 period. He measured the level of financial development by means of two variables: the margin between lending and deposit interest rates and the amount of bank credit allocated to the private sector as a share of GDP. According to his results, the interest rate margin was significantly and negatively related to economic growth, supporting the view that the presence of an efficient banking sector boosts economic growth and so it did in transition economies. Indeed, as banking sector reforms and the interest rate margin were negatively correlated in the sample countries, the policy implications of the study were quite relevant and in line with Berglof and Bolton (2002) conclusions; countries with evolved banking sectors (in terms of banking reforms) had smaller interest margins and higher economic growth than countries struggling with banking sector reforms. However, in contradiction to the general literature, a rise in the amount of credit did not seem to accelerate economic growth in transition economies. The main reasons behind this result were traced back to the numerous banking crises the transition countries experienced in the years under investigation and the soft budget constraints that were still prevalent in many of these countries, encouraging private sector agents to make counterproductive investments. Due to these specific characteristics of transition economies, the growth in credit had not always been sustainable and, in some cases, it may have led to a decline in growth rates. The author warned against the use of the “size” of the financial sector as a good variable to measure the effectiveness of the financial system in inducing real growth.

In such an environment, Mehl and Winkler (2003) confirmed a relatively weak contribution of the financial sector (domestic credit and broad money as a share of GDP) to economic growth in SEE in the first decade

of transition (1993–2001), interpreting their results in the light of the socialist legacy, as well as the failure to establish robustly and prudently functioning regulatory and legal frameworks. In the early years of transition, the financial sectors in Southeast Europe were characterized by relative depth and yet a poor environment which was not able to prevent inflationary finance and crises in many countries of the region, ultimately contributing to large output losses. Indeed, the main deficiencies of the financial sector were: (i) insufficient restructuring of state-owned banks and poor governance, which led the state-owned banks to be subject to political pressures to continue extending loans to non-profitable state-owned enterprises, triggering a rise in bad loans and resource misallocation; (ii) lax regulation on licensing new private banks and corresponding lending which implied the foundation of banks as “agent” or “pocket” banks of their parent (non-financial) companies; (iii) lack of human capital and credit technology, such as risk assessment and risk management; (iv) inadequate banking supervision. In most cases, banking regulation and supervision had to be created from scratch, and as banks lacked the skills necessary to guarantee sound credit policies and procedures, the same happened in most supervisory departments, not able to set out and reinforce international supervisory standards; and (v) a poor institutional and legal environment, unable to put into practice the regulations pertaining to financial contracts, is mainly in the areas of insolvency, bankruptcy and collateral collection. As a result, rather than promoting growth, bank credit led to misallocation of resources and lack of confidence in the whole banking sector in Southeast transition economies.

As before, the study concluded that the subsequent phase of tightened regulations and supervisions as well as of opening of domestic banking sectors to foreign investors could positively change the environment of Southeast Europe’s financial sectors with potential positive effects on economic growth. It also reckoned that domestic policymakers and international institutions should take the evidence from transition economies as a recommendation to promote lending activities, especially to micro-, small-, and medium-sized businesses, that up to that period did not obtain much support from the banking sector, as the financial deepening materialized mainly through monetization than intermediation.

Testing a different measure of financial development (liquid liabilities, M3, as a share of GDP) did not help Dawson (2003) to find a positive and significant relationship between financial development and economic growth in 13 CESEE countries over the 1994–1999 period. The conclusion was that

economic growth in the CEECs was not constrained by underdeveloped financial sectors (as they were at the time of investigation).

Also Fink et al. (2009) developed further measures of financial development by expanding the scope of their investigation to include various financial market segments, including stock and bond markets in addition to the banking sector. In particular, the authors used an aggregate measure of financial development covering credit, bond, and stock markets, so that the measure could be less influenced by differences in the financial market structures between countries, and changes of the financial market structures within countries. Further, they analysed the causal links between single financial market segments and economic development in order to determine interdependencies between the structure of financial markets and economic growth. They found that one measure of overall financial sector development (i.e. domestic credit expansion) and one single segment of the financial sector (i.e. bond markets) stimulate economic growth and thus enhance economic stability over early years of transition (1996–2000). Without a proper legal, institutional, and corporate governance framework, the stock market seemed to have introduced rather instability to the financial sector than have contributed to economic growth in the early phase of transition. As before, no significant influence of private credit on growth was found.

Interestingly, their results indicated a clear distinction between the growth effects of the financial funds channelled to/through the public sector and those directed to the private sector. The authors explained these different findings for the two measures of bank credit as a direct effect of the bad loans that were lingering private banks and were only gradually removed from the banks' balance sheets. This made the contribution of private credit to stability and growth relatively weak compared with domestic credit, which also included bank credits to central and local governments, for which there was very low default probability. In addition, they supported the conclusion by Berglof and Bolton (2002), for whom banks in transition economies were mostly providing working capital finance to enterprises, while investment finance came predominantly from retained earnings and foreign direct investment. Similar arguments about a different impact of financing the private and the public sectors were applied in interpreting the results of the impact of bond markets on growth, since these markets were heavily dominated by government issues in all accession countries.

The issue of separating credit extended to the private sector from credit allocated to state-owned companies is also investigated by Akimov et al. (2009), where four measures of bank sector development are included: liquid liabilities as a share of GDP; the ratio of claims on the non-financial private sector by total domestic credit and as a share of GDP; and the ratio of commercial bank assets divided by commercial plus central bank assets. In contrast to existing studies on transition economies, and yet in accordance with empirical evidence in advanced and developing economies, the authors deliver robust evidence on the positive relationship between all selected financial development measures and economic growth. Their findings support the previous suspicion of Mehl and Winkler (2003) that proper financial development in a conducive environment may have just started in the CESEE economies.

More recent regional studies which also include a number of CESEE countries are those by Hassan et al. (2011), Yu et al. (2012), and Barajas et al. (2013). In the two companion papers, Hassan et al. (2011) and Yu et al. (2012) analysed a large set of countries over the 1980–2007 and 1980–2009 periods respectively, including EE and Central Asia. They did not find, for that region, any specific relationship between bank development, stock market development and economic growth. They concluded that in order to achieve a long-run positive finance and growth relationship, as established by Levine and Zervos (1998), those countries needed to increase domestic credit to the private sector and domestic savings to attract a higher level of investments for the long-run economic growth. Barajas et al. (2013) proved, on a sample of 146 countries with data for 1975–2005 period, that the finance-growth nexus has a heterogeneous impact across regions, that is, it is weaker for low-income countries. In the Middle East and North Africa countries, the banking sector provides a lower contribution to economic growth than in the rest of the world, while in Europe and Central Asia, the impact is greater and generally positive. Those differences are partly due to the varied access to financial services and the degree of banking competition. However, as shown by Rousseau and Wachtel (2011), the authors warn that the empirical link between finance and growth weakens considerably once post-1990 data are introduced, primarily as a result of the proliferation of financial crises and their adverse effects on economic activity.

Finally, Caporale et al. (2015), concentrating on the ten new EU members in the 1994–2007 period, supported the evidence that the stock and credit markets were still underdeveloped in these economies, so that their

contribution to economic growth was limited. Indicators of efficiency of the financial sector (the net interest margin and the EBRD index of institutional development, measuring the progress in reforming the financial sector) yielded better results, supporting the theoretical expectation that an efficient banking sector plays an important role in economic growth. As seen in Chap. 3, achieving higher efficiency was a challenge for all the groups of countries under investigation which policymakers faced and tried to solve by “importing” the needed skills from abroad.

As the process of financial deepening was delegated to foreign banks, it is now time to investigate their role in influencing economic growth in host countries.

6.3 IS FOREIGN BANK CREDIT GROWTH-ENHANCING?

The majority of the studies analysed in the previous section tended to hint at a positive role played by foreign-owned banks which in the years under investigation were entering these markets, taking control of relevant market shares. Even those studies pointing to the lack of significance of the finance and growth nexus regarded the entry of foreign bank as a potential (future) trigger of economic growth by means of increased efficiency in the banking sector, which in turn could deliver reduced transaction costs and increased credit availability.

Few are the papers specifically focused on investigating the “real effects” of significant foreign ownership in banking. Eller et al. (2005) represent one of the first attempts to deliver empirical evidence on the effect of sectoral FDI (e.g. in the financial sector) on economic performance of the CESEE economies. The authors, through an extensive literature review, identify four different channels through which foreign ownership in banking may affect economic development, namely (i) efficiency, (ii) credit volume, (iii) corporate governance and institution building, and (iv) signal effects (see Fig. 6.1). They also try to incorporate one of these channels (e.g. the efficiency channel) in a formal theoretical model that could be econometrically tested as well.

Financial sector FDI (FSFDI) strategically reorientate the host target bank with respect to the parent bank’s typical market and activities. This implies the supply of products and services new to the host banking market, the availability of fresh capital and liquid resources which in turn increase foreign banks’ lending supply, and the implementation of internal group standards for risk assessment and management, which also play an



Fig. 6.1 Financial Sector Foreign Direct Investments and transmission channels that affect GDP growth. (Source: Adapted from Eller et al. 2005)

important role in clearing the credit portfolio and reducing the share of bad loans, again with positive effects on their lending ability. These changes point to a higher management and operational efficiency of foreign banks as opposed to domestic-owned banks (Claessens et al. 2001) that produce positive spillovers on the whole financial sector. Better risk management and lower operating costs allow for more efficient capital allocation, which translates into narrower interest margins and an offer of products and services at lower prices. The increased competition in the banking industry should induce the overall financial system to reach higher efficiency, resulting in an overall reduction of transaction costs. The lower cost of borrowing for non-financial firms should facilitate investment and ultimately deliver growth-enhancing effects. In addition, well-capitalized foreign banks may provide a higher volume of loans to the host country's private sector, in particular businesses. Deeper financial intermediation might contribute to investment and thus to growth. As acquired banks are subject to strategic reorientation and receive capital injection from their parent banks, their technologies, know-how and operational practices are also upgraded, with positive effects on the reduction of bad loans. Foreign-owned banks are also less involved in connected lending, and their better loan portfolios and risk management should contribute to financial stability (especially when foreign-owned stake in the banking market is high) which is important for economic development. The higher know-how and technology can be transferred to other industries: non-financial companies in search for external finance will need to comply with the higher and stricter credit requirements by foreign banks, so that businesses themselves stick to international standards in terms of accounting, auditing,

and corporate governance practices. In the long run, these spillover effects could permeate all industries as well as the whole infrastructure (including regulation, legislation, and supervision) with positive returns on stable economic development. Indeed, foreign-owned banks act as a catalyst for regulatory changes and implementation of international standards also in legislation and supervision (Soussa 2004). Finally, financial services FDI might have signal effects for total FDI and portfolio investments. Product innovation, such as in the field of asset management, can foster capital market development, which in turn enlarges the range of funding possibilities for corporate investors, spurring investment and economic growth. At the same time, FSFDI can act as a catalyst for FDI from other industries with again further positive influences on economic growth.

Among the briefly described diverse microstructure changes that foreign banks induce in host countries, Eller et al. (2005) analyse the potential efficiency improvements for the whole financial sectors and their effects on economic growth. They test this hypothesis (economic growth is led by FSFDI-induced efficiency gains) in 11 CEECs from 1994 to 2003, by means of a cross-country growth accounting model and employ fixed effects' panel data estimations. Their empirical results indicate that there can be a positive relationship between FSFDI and economic development, although with certain limits; as a matter of fact, modelling the impact of inward FSFDI to represent a hump-shaped impact on economic growth helps the authors to detect potential non-linearities between FSFDI and growth. In particular, FSFDI seems to spur economic growth depending on higher human capital stock, while the interaction of the FSFDI stock with the stock of domestic physical capital is negatively associated to growth. In other terms, the contribution of FDI to growth holds when the host country has a minimum stock of human capital to activate knowledge spillovers as argued by Borensztein et al. (1998).

A similar conclusion is also supported by the study of Lensik and Murinde (2006), who investigate the relationship between the entry of foreign-owned private banks and changes in gross domestic investment in 54 countries, both advanced and developing economies, for the 1990–1997 period. The sample included Hungary and Poland as representative of EE transition economies. A standard model of aggregate investment behaviour was estimated in which an indicator of foreign banks' presence (e.g. the share of foreign bank assets in total banking sector assets and the number of foreign banks in total banks in the host country) was included as one of the determinants of the ratio of investment to GDP. As the authors

argued, foreign banks' entry can induce positive and negative effects on the host country's economic performance. On the positive side, as argued by Eller et al. (2005, see Fig. 6.1), foreign banks are expected to improve the quality, pricing and availability of financial products and services, in particular credit; they induce higher competition and efficiency in the whole banking sector and reduce the (negative) influence of the government on the domestic financial sector, limiting the importance of directed credit policies; they accelerate the process of building up supportive systems, such as accounting, auditing, transparency and financial regulations; they facilitate knowledge spillover in key areas such as regulation and supervision and risk management. On the negative side, it is argued that foreign-owned banks tend to adversely affect the stability of the host country for various reasons.

Therefore, Lensik and Murinde (2006) specifically considered the potential non-linear relationship between investment and foreign banks' presence. Indeed, econometric results supported the hypothesized non-linear relationship and a threshold level of foreign bank entry is determined to distinguish between the effects of a high versus low degree of foreign bank ownership on aggregate investment. The authors support the evidence of a U-shaped curve which highlights that a foreign bank entry stimulates domestic investment not until foreign ownership has gained a substantial size (over and above the critical value).

This has important policy implications as it suggests that the policy followed by CESEE countries in letting foreign banks hold increasingly high shares in banking assets was the right choice.

A recent study by Bruno and Hauswald (2014), on a wide sample of developing and advanced economies for the 1995–2003 period examined overall consequences of a foreign bank entry (and the mode of entry, as well) for real economic activity, including the competitive reaction of local lenders. It identified three distinct channels through which foreign-owned lenders improve access to credit and industry growth, namely the lessening of external financing constraints, the overcoming of informational constraints and the overcoming of contracting legal constraints. Domestic lending by foreign banks stimulates the growth of financially constrained industries even after controlling for credit to the industrial sector by local banks. As the mode of entry (acquisitions vs greenfield) implies different informational dynamics, Bruno and Hauswald (2014) show that foreign banks can overcome informational obstacles to lending through acquisitions; acquiring domestic banks allows new entrants to combine their own

superior credit assessment policy and procedures with access to local data and borrower-specific information. Indeed, entry by M&A has a highly statistical and economic effect on local economic activity, especially in developing countries where borrower information is less easily and readily available. Finally, as foreign banks appear to mitigate the consequences of local banking crises, the authors interpret this finding as a better ability by foreign banks to commit to more stable lending relationship, which in turn incentives borrowers to keep honouring their contractual obligations, despite the lack of local legal recourse and adequate contract enforcement that in many developing countries is still a pervasive problem. In other words, the promise of a stable lending relationship, even in time of local crises, gives foreign banks more authority and power with borrowers which translate into a natural advantage in enforcing debt contracts. To sum up, thanks to foreign-owned banks, external financing constraints are relaxed and informational barriers and legal obstacles are diminished.

All these studies share two main features that may limit their analysis and evidence: their time horizon—which mainly covers the initial transition period up to the GFC²—and the fact that they did not fully measure the impact of foreign-owned banks in the credit allocation process.

As for the first point, the GFC and the subsequent sovereign debt crisis, which exerted significance influence on the home country parent bank, are important factors which need to be carefully taken into consideration when studying the role of foreign banks in CESEE. The majority of these foreign-owned banks are in fact parts of large Western European financial groups, which faced idiosyncratic and/or systemic risk at home country. These recent crises challenged the idea that multinational banks play a positive role as shock absorbers in local markets and a new stream of research emerged, specifically investigating the “exit” of foreign-owned banks from the local market.

Considering the second feature, as foreign banks hold high shares in banking assets in the CESEE economies, it is crucial to look at the role they play in credit allocation. The quality of lending and the efficient credit allocation seem to be significantly more important for economic performance than mere lending volumes (Giannetti and Ongena 2005). The lack of readily available data has hindered such an analysis so far; however, although still limited, a number of studies are appearing which take into consideration the issue of credit allocation and the credit supply to different target groups within the private sector, that is, distinguishing between household

credit and business credit. Beck et al. (2012) highlighted that the banking sector can play a growth-supporting role to the extent that it lends to enterprises and not to households. Household credit has a negative impact on growth prospects since it is usually deemed to finance consumption and demand for goods and services, whereas business credit is usually directed at productive purposes, that is, to increase investments and labour demand—the true engine of growth, according to Solow (1956). Further evidence has recently appeared, specifically concerning a number of transition economies, for example, Gaffeo and Garalova (2014), Sassi and Gasmi (2014), Sahay et al. (2015), and Léon (2018). As highlighted by Sahay et al. (2015), in a sample of 34 countries with data available on credit composition, credit to households is likely to result in lower savings and, therefore, in lower growth. With specific reference to 27 European countries, Sassi and Gasmi (2014) provided evidence that household credit undermines economic growth. Léon (2018), with a hand-collected database covering 143 countries for the period of 1995–2014, also documented the absence of any positive effect of total credit on growth, while his findings also showed that household credit has a negative effect on growth (yet the study failed to provide robust support for a positive effect of business credit). Using a panel of 13 CESEE countries, Gaffeo and Garalova (2014) found that the financial system is more likely to improve economic growth when the process of financial intermediation channels funds not to publicly owned enterprises or households but rather to private businesses.

In the next section, we tackle these issues to further explore the role of credit as a growth-enhancing or diminishing factor and the related effect of the credit extended by foreign banks.

6.4 FOREIGN OWNERSHIP IN CESEE COUNTRIES: EVIDENCE FROM A LARGE SAMPLE AND EXTENDED SAMPLE PERIOD

We studied the role of financial development in economic growth in CESEE countries starting after the transformational recession (1995) until 2015.

We collected data from World Bank database, Barro and Lee database, Bankscope, Factset, and HelgiLibrary. We also used hand-collected data on banks' ownership structure. Initially, we cover all 20 post-communist countries. However, due to the lack of data on the development of human capital, our sample had to be reduced to 14 countries from CESEE,

namely Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Serbia, Slovenia, Slovakia, and Ukraine.

As shown in the previous chapters, the transformation period was marked, after a deep decline, by dynamic development. One of the key challenges was the privatization of state-owned banks and enterprises, as well as the liberalization of market entry for private investors, both domestic and foreign. Foreign bank entry was particularly high in these economies in the late 1990s and early 2000s, which contributed to the growth of nascent banking systems. According to Claessens and Van Horen (2014), this partly reflected waves of reforms, including the opening-up of transition economies, as well as rapid financial globalization before the GFC. This trend peaked in 2007 and slowed markedly after the outbreak of the crisis. The share of foreign-owned banks in banking sector assets in the CESEE countries in 2017 (see Table 6.4.) ranges from 29% in Ukraine to 99% in Slovakia. As of 2017, the stake of foreign-owned banks is below 50% only in 5 out of 20 countries (Belarus, Hungary, Poland, Slovenia, and Ukraine). Since 2015 (the end of our sample), further reduction of foreign-owned banks' engagement in the region is especially visible in Albania, Estonia, Poland, Romania, and Ukraine, mainly due to parent banks selling (stakes in) their subsidiaries in those countries.

Our variables of interest are listed and explained in Table 6.5. They belong to three main groups depicting the macroeconomic, institutional, and financial system characteristics of the investigated economies.

Table 6.4 Share of foreign ownership in CESEE countries as of 2015 (2017)

Albania	86% (78%)	Latvia	47% (52%)
Belarus	32% (32%)	Lithuania	92% (92%)
Bosnia and Herzegovina	84% (86%)	Moldova	81% (81%)
Bulgaria	76% (77%)	Montenegro ^b	79%
Croatia	89% (88%)	Poland	61% (45%)
Czech Republic	84% (87%)	Romania	90% (77%)
Estonia	94% (88%)	Serbia	76% (76%)
FYR Macedonia ^a	75% (75%)	Slovakia	99% (99%)
Hungary	44% (45%)	Slovenia ^a	33% (46%)
Kosovo	90% (88%)	Ukraine	35% (29%)

Note: the share of assets held by foreign-owned banks in banking sector assets; data for 2017 in brackets; ^ain brackets data for 2016; ^bno data for 2017

Source: Helgi Library, Raiffeisen Research, European Central Bank, and National Central Bank Data

Table 6.5 Definition of variables

<i>Variables</i>	<i>Definition</i>	<i>Expected sign for economic development</i>	<i>Source of data</i>
GDP	Gross domestic product, current prices (m EUR)	Dependent variable	WB database
Inflation	Inflation annual data: average rate of change	–	WB database
Government size	General government final consumption to GDP	–	WB database
Country's openness to trade	(Exports + imports) to GDP	+	WB database
Country's openness to investments	FDI inflows to GDP	+	WB database
Human capital	(1) % of population (>15 years) with tertiary education (2) Average years of schooling and rate of return to education; the average years of schooling are taken from the Barro and Lee database, while the assumed rate of return to education is based on Mincer equation estimates around the world	+	(1) Barro and Lee database (2) Penn World Table 9.0
Credit-to-GDP	Domestic credit to private sector (outstanding amount) to GDP	+	WB database
Stock market capitalization	Stock market capitalization to GDP	+	WB database
Governance indicator	(1) Rule of law index (2) Regulatory quality index	+	WGI database
Foreign banks relevance	Share of the outstanding credit by foreign-owned banks in domestic credit to private sector	+/-	Own calculation based on Bankscope ^a and hand-collected data

Source: Own work

^aAll banks in a given year in a given country; consolidated financial statements; if not available—stand-alone financial statements

6.4.1 *Measures of Macroeconomic Environment*

The first group includes variables typically used in growth models to analyse the impact of the macroeconomic context on economic growth—see among the many Mankiw et al. (1992) and Barro and Sala-i-Martin (2003). The empirical literature supports negative effects of inflation—a measure of monetary discipline—and government expenditure—a measure of government burden—on economic growth; trade and investment openness, instead, are expected to be positively correlated to growth: on the one hand, by facilitating the exchange of goods and services, trade openness can foster economic growth; on the other hand, FDI inflows are expected to produce positive externalities in the form of technology transfer and spillovers.

6.4.2 *Measures of Institutional Environment*

The second group includes variables that highlight the institutional characteristics of a country. Mankiw et al. (1992) showed that the accumulation of human capital improves the empirics of economic growth modelling; for this reason, higher educational attainment among the population is included in our finance and growth models, with the expectation of positive effects on economic growth. The proxies used to measure human capital are the percentage of population with tertiary education (from the Barro and Lee database 2013) and, alternatively, an index of the “rate of return” to education extracted from the Penn World Table (PWT version 9.0) on human capital.³

Following Acemoglu et al. (2001, 2002), Claessens and Laeven (2003), and Eicher and Leukert (2009), who provided evidence that differences in institutions can extensively affect economic growth and financial deepening, we also controlled for the institutional quality of our sample economies. For this reason, we included the Rule of Law Index and the Regulatory Quality Index, extracted from the World Bank’s Worldwide Governance Indicators database, as proxies for the quality of the institutions in our sample countries.⁴

6.4.3 *Measures of Financial Development and Foreign Ownership*

We include traditional measures, such as credit to the private sector, as a share of GDP (King and Levine 1993b) or stock market capitalization to

GDP (Atje and Jovanovic 1993; Levine and Zervos 1998), into our model. To control the role of foreign-owned banks within the local financial systems, we introduced the ratio of foreign-owned banks' lending to total domestic credit. This second variable captures the actual capability of foreign banks to impact the local financial system. Foreign banks can play a leading role—which does not necessarily translate into a positive judgment of their behaviour—to the extent that they hold an important share in the local credit market, as already underlined by the review of the empirical literature.

6.4.4 The Model

The theme of modelling GDP growth has been profoundly discussed in economic literature. Most empirical research is based on an augmented form of Solow's model, operationalized via the so-called Barro regression. Given that the data used in this research are a set of countries observed over time, those can be viewed as a panel. The general form of the Barro regression for panel data can be written as:

$$\Delta \ln \text{GDP}_{it} = \beta_1 \ln y \text{GDP}_{i,t-1} + x'_{it} \beta + \alpha_i + \varepsilon_{it} \quad (6.1)$$

where ΔGDP_{it} is the GDP growth of country i in period t , x_{it} is the vector of independent variables, α_i is the country-specific individual effect, and ε_{it} is the error term (assumed to be the white noise), while β and β_1 are the parameters of the model.

The variables included in the x'_{it} vector represent two types of potential growth determinants: well-recognized potential growth factors that can be attributed to physical or human capital and, additionally, characteristics of the financial market, which are considered as potential growth factors. These are presented in Table 6.5.

Given the autoregressive character of Eq. (6.1) and the related endogeneity issues, the specification needs to be transformed into the equivalent form before estimation:

$$\ln y_{it} = (\beta_1 + 1) \ln y_{i,t-1} + x'_{it} \beta + \alpha_i + \varepsilon_{it} \quad (6.2)$$

In order to avoid inconsistency of the estimator, we use Blundell and Bond's (1998) system GMM approach to assess the impact of the regressors on the GDP growth, treating most of the regressors as potentially

endogenous. In most of the literature, this approach has replaced the earlier Arellano and Bond's (1991) estimator, which was found to possess a notable small sample bias. It should be noticed that allowing for endogeneity does not necessarily mean that these variables need to be endogenous; this can be viewed as a precaution, adopted by most authors, which secures the consistency of the estimator, in view of the endogeneity threat, at the relatively low price of a minor efficiency decrease.

We use the Arellano-Bond test for autocorrelation and Sargan's test for overidentifying restrictions, given that no autocorrelation in the error term ε_{it} and exogeneity of the instruments are essential for the estimator to maintain its consistency. We used annual data in this study and, as a result, specific observations might be located in different phases of the economic cycles and be influenced by temporary shocks. To limit this issue, we introduced fixed time effects into one of the models to eliminate the global shocks.

Empirical results are presented in Table 6.6. Five models were estimated. The differences between models consist in the methodology applied (no fixed time affect vs fixed time effects, limited number of instruments vs full instruments) and the set of regressors, among which we used different measures of human capital and regulatory quality. In the discussion, wherever we use the concept of significance of a variable, we assume 10% level of significance for brevity.

Having focused our analysis on the role of foreign-owned banks and their effect on growth, we find that the market share of these financial institutions in local credit markets is never significantly associated with economic growth in all the models estimated. The findings lead us to conclude that the strategy of a considerable entry of foreign banks in local credit markets has not guaranteed the supposed positive effects on financial innovation and development and, ultimately, economic growth that were expected. Economic growth was supported by openness to investment and the development of the stock market, while it was reduced by the increasing role of bank credit to GDP. While the estimates of the fixed time effects model (Model 1.5) undoubtedly confirm the relevance of the credit-to-GDP, other revealed discrepancies (for variables such as the regulatory quality index and country openness to investment) might be due to the fact that other factors are related with the phases of the economic cycles and as such are at least to some extent covered by the time dummies included in Model 1.5.

Table 6.6 Estimates of Eq. (6.2)—models 1.1–1.5

<i>Regressor</i>	<i>Model 1.1</i>	<i>Model 1.2</i>	<i>Model 1.3</i>	<i>Model 1.4</i>	<i>Model 1.5</i>
	<i>Coefficient^a</i>	<i>Coefficient^a</i>	<i>Coefficient^a</i>	<i>Coefficient^a</i>	<i>Coefficient^a</i>
lnGDP (-1) ^b	0.9759***	0.9798***	0.9753***	0.9788***	0.9752***
Inflation	0.0040	0.0058	0.0036	0.0034	0.0011
Government size	-0.6482	-0.6522	-0.6168	-0.6283	-0.0156
Country's openness to trade	0.0154	0.0494	0.0131	0.0328	-0.0495
Country's openness to investments	0.3293**	0.2958*	0.3211**	0.3033*	0.0288
Human capital (BARRO_LEE)	0.0009		0.0003		
Human capital (PENN_STAT)		-0.0344		-0.0474	0.0159
Stock market capitalization	0.1499***	0.1573***	0.1452***	0.1520***	0.0070
Credit-to-GDP	-0.1339***	-0.1512***	-0.1213***	-0.1151***	-0.1154***
Rule of law index	0.0032		0.0028	0.0106	0.0198**
Regulatory quality	0.0129	0.0010	0.0156	0.0183	0.0044
Foreign banks relevance		0.0180			
Constant	0.4244	0.4701	0.4305	0.5241	0.3007
Fixed time effects	NO	NO	NO	NO	YES
Instruments ^c	Limited	Limited	Full	Full	Limited
Number of observations ^d	299	299	299	229	229

Arellano-Bond test of autocorrelation of the 2nd order ^e	-1.7630	0.0779	-1.7242	0.0847	-1.7749	0.0759	-1.7557	0.0791	-1.8378	0.0661
Sargan-Hansen test ^f	391.7189	0.0761	387.2103	0.1082	401.9431	0.1622	402.2284	0.1687	222.6136	0.0007

Note: All equations are estimated with annual data from 1995 to 2015 with the use of one-step system GMM estimator; *p*-values of *t* statistics obtained with the use of robust standard errors are reported with * *p* < 0.1; ** *p* < 0.05; *** *p* < 0.01

^aIn the rows for the Arellano-Bond and Sargan-Hansen tests, the value of test statistic is provided in this column

^bThe one-year-lagged lnGDP estimates are provided in this row corresponding to the $\beta_1 + 1$ joint estimate in formulas (1) and (2). The $\beta_1 + 1$ is found significantly different from 0 as well as significantly lower than 1 with *p* < 0.01

^c“Limited” instruments means that at most two lags of the regressors were used as instruments, “full” means that all the available lags of the regressors were used for that purpose

^dTotal number of observations used to estimate the model (in each case *n* = 14)

^eUnder H0 the $\Delta \varepsilon_t \sim AR(2)$ which corresponds to the $\varepsilon_t \sim AR(1)$

^fUnder H0 the instruments are considered as exogenous

Banks can positively affect economic performance as long as they efficiently perform their primary function of allocating resources to their most productive opportunities. Indeed, while lacking information on the composition of credit in banks' portfolios, Koivu (2002) provided a different explanation for the lack of a positive impact of bank credit on growth and that refers to the soft budget constraints prevalent among the CESEE companies after the economic transformation; lending to enterprises which apply soft budget constraints is likely to end up financing inefficient investment projects and generating financial losses. As a result, credit is neither profitable nor enhances productivity in the economy, even though it is channelled to enterprises and not to households. The capital markets in the CESEE countries started to develop in the early 1990s. The removal of capital controls (financial liberalization), perspective of EU accession and receding political risks have boosted their development with increased interest from investors. The empirical literature on the effects of stock market development on growth suggests the existence of a positive link; yet there is paucity of such studies on the CESEE countries.⁵ Our study has confirmed its positive impact.

6.5 CONCLUSIONS

This chapter investigated the link between foreign bank penetration in CESEE and the economic growth of the region. The enormous changes and transformations occurring in the last 25 years in the real economy and in the institutional setting do not seem to be driven nor facilitated by a development of the banking sector. The finance and growth nexus in the region is at best weak, if not negative, and foreign-owned banks do not seem to have delivered the supposed positive effects on financial innovation and development and, ultimately, economic growth as expected.

A future step of the analysis, worth investigating for our sample of countries, should consider the link between (1) foreign bank penetration and the bilateral trade of the host country with home countries of the parent banks and (2) credit portfolio composition (households vs businesses). In this respect, the CESEE countries could represent an interesting case study as, on the one hand, foreign banks dominate their banking sectors while, on the other hand, being small and open economies trade liberalization during transition, increasing the scale of their foreign trade exchange, helped their development significantly. Moreover, observing the credit policies of foreign-owned banks, their focus—for a long time—has been on the credit to households, so maybe this kind of approach will explain why bank credit does not support economic growth.

NOTES

1. The dataset contains annual data starting from 1980 for 176 advanced, emerging and low-income economies from the World Bank Global Financial Development database and World Bank FinStat, IMF's Financial Access Survey, Dealogic corporate debt database, and Bank for International Settlements debt securities database.
2. Only two studies investigate longer sample periods, though they are limited in the number of transition countries analysed.
3. The Barro and Lee dataset provides educational attainment data for 146 countries in five-year intervals from 1950 to 2010. The educational attainment of the adult population over age 15 and over age 25 is provided at seven levels of schooling, from no formal education up to complete tertiary. The Penn World Tables provide an index of human capital per person, which is related to the average years of schooling and the rate of return to education; the average years of schooling are taken from the Barro and Lee dataset, while the assumed rate of return to education is based on Mincer equation estimates around the world.
4. The rule of law index captures perceptions of the extent to which agents have confidence in and abide by the rules of society, in particular, the quality of contract enforcement, property rights and the courts, as well as the likelihood of crime and violence. The regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations which permit and promote private sector development.
5. Still, most studies on the stock market-growth nexus rarely include data from after the GFC and usually use data for only several CEE countries.

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