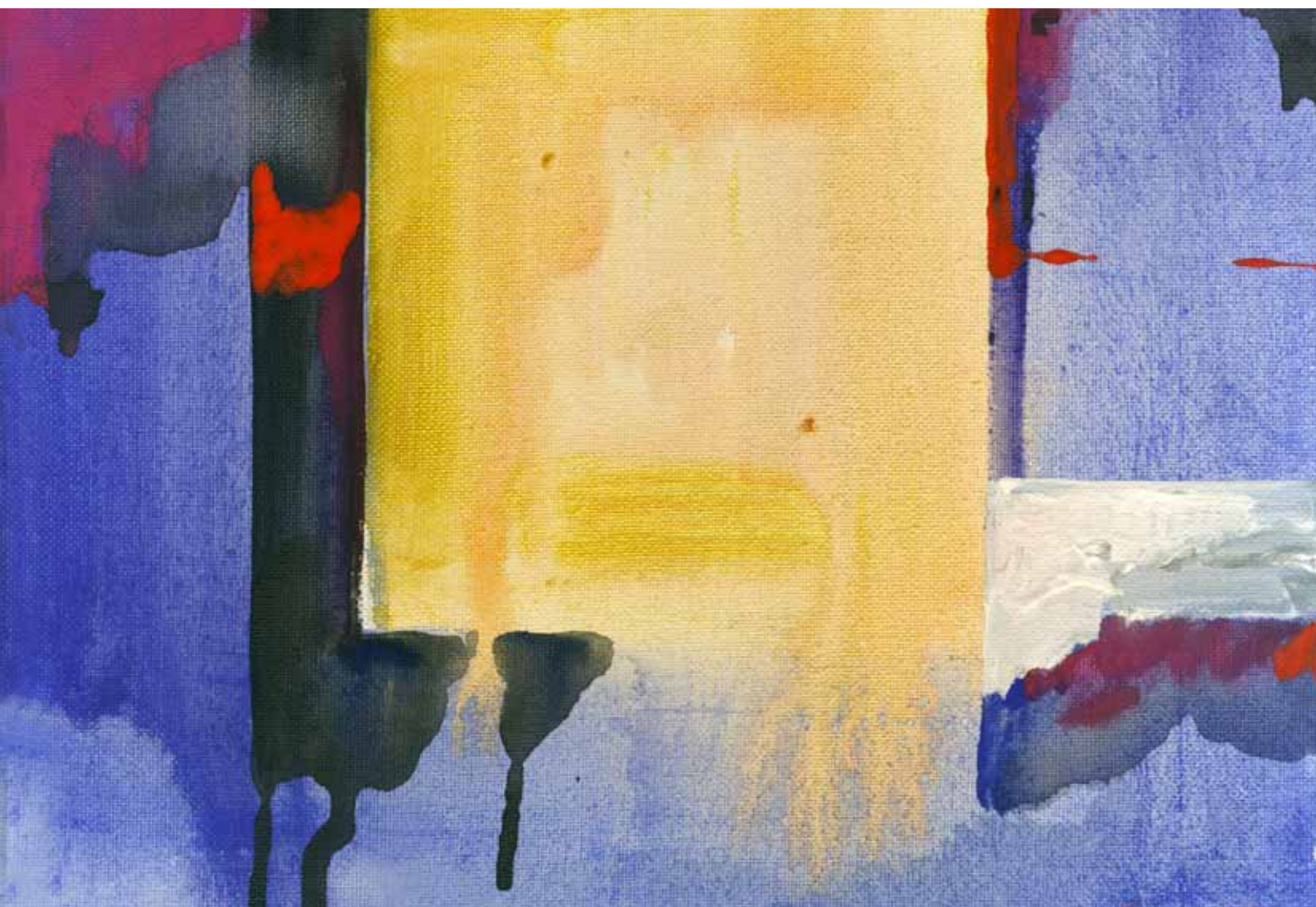


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**WHAT DRIVES EXPORT MARKET SHARES? IT DEPENDS!
AN EMPIRICAL ANALYSIS USING BAYESIAN MODEL AVERAGING**



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ABBREVIATIONS

AMECO – annual macro-economic database	OECD – Organisation for Economic Co-operation and Development
BACE – Bayesian Averaging of Classical Estimates	OLS – Ordinary Least Squares
BIS – Bank for International Settlements	PIP – posterior inclusion probability
BMA – Bayesian Model Averaging	PMP – posterior model probability
BRIC – Bayesian and risk information criterion	RCA – Revealed Comparative Advantage
CompNet – Competitiveness Research Network	R&D – research and development
CPI – Consumer Price Index	REER – real effective exchange rate
EBL – Empirical Bayes – Local	RXP – relative export prices
EPO – European Patent Office	TFP – total factor productivity
ESCB – European System of Central Banks	UIP – unit information prior
EU – European Union	ULC – Unit Labour Cost
FDI – Foreign Direct Investments	ULCT – Unit Labour Costs in the Total Economy
GDP – Gross Domestic Product	UN – United Nations
GVC – Global Value Chains	WDI – World Development Indicators
HCI – Harmonised Competitiveness Indicator	WEO – World Economic Outlook
IID – Independent and identically distributed	WGI – Worldwide Governance Indicators
IMF – International Monetary Fund	WIOD – World Input-Output Database
MCMC – Markov Chain Monte Carlo	

ABSTRACT

What drives external performance of countries? This is a recurring question in academia and policy. The factors underlying export growth are receiving great attention, as countries struggle to grow out of the crisis by increasing exports and as protectionist discourses take foot again. Despite decades of debates, it is still unclear what the drivers of external performance are and, importantly, which ones policy makers can influence. We use Bayesian Model Averaging in a panel setting to investigate the drivers of export market shares of 25 EU countries, considering a wide range of traditional indicators along with novel ones developed within the CompNet. We find that export market share growth is linked to different factors in the old and new EU Member States, with one exception: for both groups, competitive pressures from China have strongly affected export performance since the early 2000s. In the case of the old EU Member States, investment, the quality of institutions and liquidity available to firms also appear to play a role. For the new EU Member States, labour and total factor productivity are particularly important, while inward FDI matters more than domestic investment. Price competitiveness does not seem to play a very important role in either set of countries: relative export prices do show correlation with export performance for the new EU Member States, but only when they are adjusted for quality. Our results point to the importance of considering the "exporting stage" of a country when discussing export-enhancing policies.

Keywords: export shares, competitiveness, Bayesian Model Averaging

JEL classification: C23, C51, C55, F14, O52

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NON-TECHNICAL SUMMARY

What drives external performance of countries? This is a long-standing and constantly recurring question in academia and policy. The factors underlying export growth are again receiving great attention: in the euro area the focus is on "how", as some countries have struggled to grow out of the crisis by increasing positive net trade contributions. On the world scene, this question takes on a more fundamental, even political value, as protectionist discourses take foot again. For a rigorously founded policy analysis on how to enhance external performance, it is essential to identify the drivers behind the competitive position of individual countries, which is particularly difficult given the all-encompassing nature of the concept of competitiveness.

This paper develops a framework for analysing competitiveness, narrowly defined as the growth of export market shares, by analysing the importance of a comprehensive set of potential explanatory variables.

In policy discussions on how to enhance competitiveness, price and cost competitiveness indicators feature prominently. However, the analysis based solely on traditional price- and cost-based macroeconomic indicators has proven unable to provide a comprehensive explanation of the recent trade developments. Also, it is not very clear empirically which of the various indicators relate better to trade outcomes.

We consider 42 potential competitiveness drivers to capture various non-price dimensions of competitiveness on top of traditional price and cost measures; these additional dimensions relate to the macroeconomic environment, labour market and demographics, institutions, business environment, financial markets and trade specialisation.

Several public and private institutions, such as the World Economic Forum and the World Bank, have tried to measure non-price competitiveness by considering an extremely broad range of economic and social indicators. However, these approaches have as main limitation the fact that they do not provide a rigorous empirical assessment of the link between each considered indicator and a specific measure of competitiveness.

The challenge of selecting the main drivers of economic performance from a broad range of possible variables has been discussed in the economic growth literature, which faces a similar lack of clear guidance from economic theory. This is known as the problem of "open-endedness of theories", i.e. the variables proposed as competitiveness drivers in previous studies have some ex-ante plausibility and cannot be excluded a priori. In this case, one faces both the classical problem of estimation uncertainty and an additional one of model uncertainty related to the choice of regressors. We address this problem by employing BMA, which provides a formal treatment of model uncertainty by considering all possible sets of variables and assigning to each such set a posterior model probability of being "true" based on Bayesian inference.

Our paper extends the related literature by analysing the drivers of external competitiveness by means of searching through a comprehensive dataset that also includes novel indicators developed within the ESCB CompNet and by employing a full BMA approach in a panel setting. For robustness, we consider several model specifications in terms of time- and country-fixed effects.

We consider several model specifications, but the main pattern that emerges is that the expansion of export market shares is linked to different factors in the old and new EU Member States, with one exception: for both the old and new EU Member States, competitive pressures from rapidly developing China have strongly affected export performance since the early 2000s. In the case of the old EU Member States, investment, the quality of institutions and liquidity available to firms also appear to play a role for trade outcomes. For the new EU Member States, labour and total factor productivity are particularly important, and export market share growth is sustained by inward FDI rather than by domestic investment. In both sets of countries, price competitiveness does not seem to play a very important role. Relative export prices do show some consistent correlation with export performance for the new EU Member States, but only when they are adjusted for quality. Our results point to the importance of considering the "exporting stage" of a country when discussing export-enhancing policies.

Our analysis focuses on discovering empirical regularities, hence it can hardly be used as a platform for policy prescriptions. But a clear one does emerge: what sustains market share expansion changes according to the "maturity" of the exporting economy, with catching-up factors in terms of labour and total factor productivity being more important in emerging economies. Also, domestic investment and domestic financing have a central role in more advanced economies, while the catching-up ones typically rely on inward FDI.

1. INTRODUCTION

What drives external performance of nations is a long-standing question in academic and policy makers' circles. Especially in the aftermath of the 2008–2009 financial crisis, the factors underlying export growth have received increased attention, as euro area stressed countries have struggled to grow out of the crisis by increasing positive net trade contributions. For a rigorously founded policy analysis on how to enhance external performance, it is essential to identify the drivers behind the competitive position of individual countries, which is particularly difficult given the all-encompassing nature of the concept of competitiveness.

This paper develops a framework for analysing competitiveness, narrowly defined as the growth of export market shares, by analysing the importance of a comprehensive set of potential explanatory variables.

Price and cost competitiveness indicators feature prominently in policy discussions on how to enhance competitiveness. However, the analysis based solely on traditional price- and cost-based macroeconomic indicators has proven unable to provide a comprehensive explanation of recent trade developments. There is also little consensus on the appropriate indicators of price and cost competitiveness to be considered, as each relative price measure has conceptual and statistical advantages and drawbacks.¹ Also, it is not very clear empirically which of the various indicators relate better to trade outcomes (see, e.g. Ca' Zorzi and Schnatz (2007), Christodouloupoulou and Tkacevs (2016) and Giordano and Zollino (2015)).

We consider a broad set of competitiveness drivers (42 variables) in order to capture various non-price dimensions of competitiveness on top of traditional price and cost measures; these additional dimensions relate to the macroeconomic environment, labour market and demographics, institutions, business environment, financial markets and trade specialisation.

Several public and private institutions have tried to measure non-price competitiveness by considering an extremely broad range of economic and social indicators. Relevant examples are the World Economic Forum's Global Competitiveness Report or World Bank's Doing Business Report, which are benchmarks in competitiveness assessment of a country relative to the rest of the world (see, e.g. Schwab and World Economic Forum (2013) and World Bank (2013)). However, they are largely based on survey-derived indicators, and the underlying methodology has been subject to revisions. The European Competitiveness Report 2014 published by the European Commission focuses on policies which can help firms grow, foster and compete internationally (European Commission (2012)). Another relevant example is the World Bank's Trade Competitiveness Diagnostic Toolkit, which brings together a plethora of indicators useful to diagnose competitiveness under a unified conceptual framework and puts forward policy options based on country-specific case studies (Reis and Farole (2012)). However, the

¹ Real effective exchange rates that use consumer prices as deflator ensure comparability across countries but contain an important share of non-traded consumption goods and services; a producer price-based real effective exchange rate mainly considers tradable goods prices, but the underlying price measures are not fully comparable across countries (due to differences in composition and compilation); unit labour costs-based deflators have the drawback that they consider only one cost component and disregard capital-related and other costs, e.g. energy and commodities; the GDP deflator has also been considered in computing real effective exchange rates, but the underlying statistics can be subject to relatively large revisions.

main limitation of these approaches lies in the fact that they do not provide a rigorous empirical assessment of the link between each considered indicator and a specific measure of competitiveness.

The challenge of selecting the main drivers of economic performance among a broad range of possible variables has been discussed in the economic growth literature, which faces a similar lack of clear guidance from economic theory. This is known as the problem of "open-endedness of theories" (Brock and Durlauf (2001)), i.e. the variables proposed as competitiveness drivers in previous studies have some ex-ante plausibility and cannot be excluded a priori. In this case, one faces both the classical problem of estimation uncertainty and the additional one of model uncertainty related to the choice of regressors. We address this problem by employing BMA, which provides a formal treatment of model uncertainty by considering all possible sets of variables and assigning to each such set a posterior model probability of being "true" based on Bayesian inference.

Our paper extends the related literature by analysing the drivers of external competitiveness by means of searching through a comprehensive dataset that also includes novel indicators developed within the ESCB CompNet and by employing a full BMA approach in a panel setting. For robustness, we consider several model specifications in terms of time- and country-fixed effects.

The country set in our analysis is limited to 25 EU countries (excluding Croatia, Malta and Luxembourg due to limited data availability) for the period covering 2002 to 2012. The use of the time dimension, as opposed to running cross-section regressions, helps us to better explore the information provided by the unfolding of the business cycle.

The rest of the paper is organised as follows. The next section presents the dataset and provides the rationale for considering each class of indicators for competitiveness assessment. Section 3 presents the methodology and Section 4 discusses the results. Sections 5 and 6 perform various robustness checks and the last section concludes.

2. POTENTIAL DRIVERS OF EXTERNAL COMPETITIVENESS

The concept of competitiveness is broad, encompassing among other aspects export performance, productivity, the quality of institutions and governance, ability to innovate and absorb technology. Consequently, the potential drivers of competitiveness can be sought in very wide areas of economics.

The first conceptual step consists in choosing the dependent variable. Here we narrow down our definition to the international trade dimension, defining competitiveness as a measure of a country's advantage or disadvantage in selling its products in international markets.² More specifically, we define the dependent variable as the growth rate in the market share of nominal exports of goods and services.³ There are several reasons behind this choice. First, export market shares summarise various aspects of competitiveness, as increasing labour productivity or improving quality of government institutions is likely to be reflected in export performance of a country. Second, data on nominal exports are timely and harmonised across countries, whereas other candidate variables, such as the quality of institutions, can be defined very differently across countries.

While constructing the set of explanatory variables for the market share of nominal exports, we considered the following criteria: (i) economic relevance, (ii) data availability, i.e. comparable statistics for EU25 over the period 2002–2011 (2003–2012 for the dependent variable), and (iii) comprehensiveness, i.e. all possible economic pillars commonly correlated with external competitiveness and arguably influence it feature in the dataset through key indicators. Correlated variables proxying for the same effects were not included, as the BMA methodology performs poorly in terms of model convergence when regressors are highly correlated. For instance, the two indicators introduced by Koopman et al. (2010), namely participation and position in global value chains, are correlated by construction, so only one of them was included. Finally, most of the considered regressors are structural variables likely to capture fundamental drivers of competitiveness, but we also include several indicators linked to business cycle fluctuations. In speaking about "drivers" it is important to keep in mind that our methodology aims at detecting systematic empirical regularities, but precise identification of causal relationships would require a more structural approach that cannot handle this amount of data. With this caveat in mind, we use the term "driver" to refer to variables that are detected as being systematically correlated with increases or decreases in export competitiveness when conditioning on a very rich information set.

The final dataset comprises 42 explanatory variables that capture relative price and cost measures, trade specialisation, macroeconomic environment, institutions and business environment as well as financial and labour market developments. Most of the variables from the first two blocks (relative prices and trade specialisation) are novel indicators computed by the ESCB CompNet (Karadeloglou et al. (2015)). The next three blocks include variables that are traditionally used in the analysis of a

² See the OECD's definition of competitiveness in international trade: <http://stats.oecd.org/glossary/detail.asp?ID=399>.

³ Arguably, export performance in goods and services may be driven by different factors. However, separate data on services exports are not sufficiently available and reliable; therefore, we look at total exports. Furthermore, the use of nominal export market shares (instead of real market shares or real export growth) has a long tradition in the literature; see, e.g. the work of Armington (1969).

country's competitiveness position as well as in growth literature.⁴ Taking account of the increased attention on financial markets following the recent international crisis, we also add a set of variables characterising the financing conditions for non-financial corporations.

The main categories of potential competitiveness drivers are discussed below (see Table 1 for the names of variables, sources and data transformations and Table 2 for descriptive statistics).

Relative price variables

REERs are the most widely discussed determinants of competitiveness. Their history can be traced back to Armington (1969), who decomposed the change in a nominal trade flow into two components: changes in demand and changes in relative prices. Later, McGuirk (1987) used this framework to construct a rudimentary REER indicator. Since then, a large number of REERs or HCIs have been constructed based on various price indices and different weighting schemes.

We consider the HCI, using consumer prices as deflator and investigate the robustness of the results compared to the HCIs deflated by unit labour costs for the total economy. The HCIs are considered in turn rather than simultaneously in a single model due to their high correlation.

Next to the traditional HCIs, we also look at an increase in RXP adjusted for quality and taste (see Benkovskis and Wörz (2016)). RXP indices are based on disaggregated UN Comtrade data and measure both price and non-price competitiveness, as they are constructed to capture changes in the physical quality of export products and shifts in consumers' taste, the factors missing in the traditional HCIs.

Trade related variables

This block of variables consists of various statistics that are informative for trade outcomes computed based on detailed trade data from UN Comtrade and from the newly developed WIOD (see Timmer et al. (2014)). These indicators have been developed within CompNet and, although some of them have a long-standing history in economic literature (e.g. indices of RCAs), they make use of the most detailed sector/partner trade statistics and are computed in a harmonised fashion across countries (see Karadeloglou et al. (2015) for more details). These variables capture several dimensions, i.e. competitive pressure, revealed comparative advantage, and internationalisation of production.

Export gains are driven not only by local conditions determining firms' ability to export but also by the degree of competition in external markets. This effect is proxied by the dynamic trade link analysis proposed by Silgoner et al. (2013) and used by Benkovskis and Wörz (2016) to assess whether the competitive pressure from China poses a serious threat to EU exporters in third markets. We include three variables capturing competitive pressures from rapidly developing China, namely the existing overlap with China, new overlap with China and potential crowding out. The existing overlap indicator evaluates the share of product-destination markets simultaneously and continually served by two competing exporters (an EU country and China). In

⁴ See, e.g. Durlauf et al. (2005), Moral-Benito (2012) and Danquah et al. (2014).

other words, it shows how often both countries overlap in third markets. By contrast, the new overlap indicator focuses on the cases where one of the exporters (an EU country or China) enters the market served by another exporter. Finally, the potential crowding-out indicator describes cases when either an EU country or China leaves the market while the other competitor remains active or has just become active. Thus, these three variables provide useful information on competitive pressures from China and may explain changes in the EU countries' export market shares.

Regarding trade specialisation, we are also interested in whether export performance is driven by specialising in a certain category of goods. To this purpose, we include two indices of revealed comparative advantage (as introduced by Balassa (1965)), namely RCAs for exports of high-tech and medium-tech products. The indices are computed following the OECD classification; high-technology sectors include industries, such as aircraft, computing machinery and communication equipment, whereas medium-high technology sectors refer to industries, such as electrical machinery, motor vehicles and chemicals. While high technology can be thought of as providing higher value added and market power, concentration on medium-high technology exposes a country to a faster-growth external market.

Finally, external competitiveness is likely to be influenced by the degree of internationalisation of production, which allows a country to increase efficiency by outsourcing or to easily ensure demand for exports by taking part in GVCs. These aspects are extremely relevant, as the production process has become increasingly fragmented across countries and intermediate goods cross borders multiple times, reducing the reliability of traditional trade statistics as a measure of a country's competitiveness. Thus, we include an indicator introduced by Koopman et al. (2010), namely the position in GVCs, computed using the WIOD data. The position in the GVC is defined as the log ratio of a country's supply of intermediates used in other countries' exports to the use of imported intermediates in its own production. It captures a country's position (i.e. upstream or downstream) in the production chain. A higher value indicates that a country operates upstream in the GVC, e.g. specialising in raw materials or R&D, while a lower value indicates that a country operates downstream, e.g. in final assembly. It is possible that the level of export market shares is driven by changes in fragmentation of production, thus changes in GVC position are also included in the set of explanatory variables.

Macroeconomic variables

We include ratios describing the structure of the economy: investment and government consumption ratios to GDP, which is usually considered to be a measure of distortions in the economy (see, e.g. Barro (1991)). This is complemented by a measure of the tax burden⁵ and public debt ratio to GDP.

Given that both capital stock and the build-up of productive capacities may have a positive impact on export performance, we also include real investment growth to complement the share of investment in GDP. As a proxy for the importance of the non-tradable sector in the economy, we control the structure of investment by including the share of investment in construction. Another variable capturing the business cycle is the so-called growth surprise, or the difference between the actual

⁵ Our measure of tax burden follows the definition used in the Stability and Convergence Programmes submitted by the EU Member States.

growth rate of real GDP and the five-year ahead forecast contained in the IMF World Economic Outlook (WEO).

Productivity is a key variable in competitiveness analysis, and competitiveness is often discussed as a quasi-synonym of productivity (see Porter (1990) or Krugman (1994)). We include the TFP measure from the AMECO database, calculated as the Solow residual in a production function. However, one needs to be cautious when interpreting the results for the TFP measure: it is unobservable and varies with the estimation method. Moreover, the Solow residual may include cyclical factors related to the utilisation of production factors. Thus, we also include labour productivity growth, which is observable.

Finally, one also needs to take into account the importance of natural resources in determining competitiveness; we augment the set of explanatory variables by the share of rents from natural resources to GDP and the ratio of energy imports to the use of primary energy.

Labour market and demographic variables

The external performance of a country is tightly connected with the quality of human capital and the structure of the labour market. In particular, the share of the labour force with secondary and tertiary education as well as the index of human capital provided by the Penn World Tables capture the skill endowment of the labour force. The availability of the labour force is described by labour demographic conditions (population growth and age-dependency ratio) and labour force participation rate. Labour market flexibility may also play an important role in determining competitiveness, thus we include the share of temporary and part-time employment as explanatory variables.

Institutions and business environment

The quality of government institutions and of the business environment has a crucial role in a country's competitiveness; policies, which promote more flexible product and factor markets reducing costs of entry and exit, may foster more efficient allocation of resources towards more productive activities. The dataset includes indices provided by the Fraser Institute, namely the size of the government, quality of legal system, regulations and freedom to trade and also Worldwide Governance Indicators that measure the severity of corruption and government efficiency.

Financial variables

Since the onset of the crisis, financial variables have gained prominence in explaining the performance of firms and countries. We consider measures characterising firms' financing conditions, including loans to non-financial corporations and their liability structure (equity, debt, loans). In addition, we look at the effect of FDI inflows which also proxy international technological spillovers. Finally, taking into account the globalisation of the financial sector, we include the growth of loans from foreign banks.

3. METHODOLOGY

Given the all-encompassing nature of the concept of competitiveness and the lack of clear guidance from economic theory on what drives it, the degree of uncertainty regarding the "true" model is significant. We employ BMA to identify robust drivers of trade outcomes, as the methodology allows us to take account of both the uncertainty associated with the importance of each driver conditional for a given model and of the uncertainty surrounding the specification of the model.

More precisely, BMA provides a formal treatment of model uncertainty by considering all possible combinations of indicators; when k potential variables are considered, there are 2^k variable combinations, which means estimating 2^k models. Under the BMA approach, the importance of each variable can be assessed by aggregating information regarding that variable from all possible models (unconditional statistics) or, alternatively, only from models which contain that variable (posterior statistics conditional on inclusion). The weights are given by PMPs.

The literature dealing with model uncertainty when there is little guidance from economic theory regarding which explanatory variables to consider goes back to Raftery (1995). Each model is defined by the specific subset of variables it includes and is treated as an unknown parameter that lies in the set of models entertained (the model space). Bayesian inference offers the tools to attach probabilities to the different possible models. Raftery (1995) showed that when there are many candidate independent variables, standard model selection criteria based on p-values can be misleading, and he promoted the use of Bayesian inference to take into account model uncertainty explicitly.

Sala-i-Martin et al. (2004) investigate the drivers of economic growth following the approach of Raftery (1995) and take into account model uncertainty by applying Bayesian inference on the posterior odds of each model; the models consist of the considered explanatory variables in all possible combinations. The methodology has since been known as Bayesian Averaging of Classical Estimates (BACE), as the models are estimated using classical OLS, and the weights given to each model have a Bayesian justification similar to the Schwarz model selection criterion.

Fernández et al. (2001a) lay the ground for a full BMA approach to deal with model uncertainty by proposing a benchmark prior distribution both for the models and the parameters within each model. More precisely, they propose to use improper non-informative priors for the parameters that are common to all models and a g-prior structure for the slope. This hierarchical prior structure has gained popularity in the literature, mainly because it is analytically convenient and has a small computational burden. It has been frequently employed in subsequent analyses of economic growth drivers (see Fernández et al. (2001b)).

The above-mentioned studies use cross-section data, whereas Moral-Benito (2012) extends the BACE approach to a dynamic panel framework by employing a novel maximum likelihood estimator. He shows that the set of robust growth drivers changes substantially when country-specific effects correlated with other regressors are included. Danquah et al. (2014) employ the same methodology to analyse drivers of TFP and find that country-specific unobserved heterogeneity is its most important

one. Only three variables robustly appear as drivers of productivity, namely the initial GDP, consumption share and trade openness.

Using the sample of Sala-i-Martin et al. (2004) containing 64 potential growth determinants, Ciccone and Jarociński (2010) investigate the sensitivity of results for two different available estimates of income, which is the dependent variable. They use BMA with agnostic priors and show that the results are highly sensitive to how income is estimated. They suggest that when the indicator set is too vast, results are likely to be non-robust to minor errors in measurement in the dependent variable. Therefore, we keep the set of potential export drivers rather parsimonious in our analysis, as results can be sensitive when the number of included variables is too large.

We consider a static panel, taking into account the uncertainty as to which subset of variables $x_j \in x$ is included in each model. We define the following econometric specification for each model M_j :

$$y_{it} = \alpha_j + x'_{j,it-1} \beta_j + \gamma_{j,i} + \nu_{j,t} + \varepsilon_{j,it} \quad \forall t=1, \dots, T \quad i=1, \dots, n \quad j=1, \dots, 2^k \quad (1)$$

where the dependent variable y_{it} is the growth in export market share for country i , α_j is a constant term, $\beta_j \in \mathfrak{R}_{k_i}$ ($0 \leq k_i \leq k$) groups the relevant regression coefficients, $\gamma_{j,i}$ captures unobservable time-invariant country heterogeneity, $\nu_{j,t}$ is a time-fixed effect to control common factors across countries, and $\varepsilon_{j,it}$ is a Gaussian IID error term with variance σ^2 . The imposed lagged response of trade outcomes to our set of competitiveness drivers addresses the problem of reverse causality and accounts for delayed effects from the explanatory variables.

In addition to the model uncertainty, we are also confronted with substantial uncertainty surrounding the correct econometric specification. In order to address this type of uncertainty, we estimate five different versions of equation (1). First, we impose $\gamma_{j,i} = 0$ and $\nu_{j,t} = 0$, which is equivalent to pooled OLS. Next, we consider a model with only country-fixed effects ($\nu_{j,t} = 0$), where country-fixed effects are included via within transformation of variables. Another set of results is based on a model with country-fixed effects (via within transformation) and time dummies, and finally we estimate a model with country-fixed effects and time-fixed effects. Note that we treat time dummies as normal regressors, and hence the inclusion of dummy variables allows us to investigate the empirical relevance of time-fixed effects, the introduction of fixed effects via variable transformations assumes the presence of fixed effects a priori.

The model weights ($p(M_j | y, X)$) are posterior model probabilities that arise from Bayes' theorem:

$$p(M_j | y, X) = \frac{p(y | M_j, X) p(M_j)}{p(y | X)} = \frac{p(y | M_j, X) p(M_j)}{\sum_{s=1}^{s=2^k} p(y | M_s, X) p(M_s)} \quad (2).$$

where $p(y|M_j, X)$ is the marginal likelihood of model M_j , $p(y|X)$ is the integrated likelihood, and $p(M_j)$ is the model prior. The marginal likelihood $p(y|M_j, X)$ is obtained as follows:

$$p(y|M_j, X) = \int p(y|\alpha_j, \beta_j, \sigma, M_j) p(\alpha_j, \sigma) p(\beta_j|\alpha_j, \sigma, M_j) d\alpha_j d\beta_j d\sigma \quad (3)$$

where $p(y|\alpha_j, \beta_j, \sigma, M_j)$ is the conditional probability of the data, $p(\alpha_j, \sigma)$ and $p(\beta_j|\alpha_j, \sigma, M_j)$ are the priors for the parameters of model M_j . The posterior model probability in (2) is thus proportional to the marginal likelihood of the model (the probability of the data given the model M_j) and a prior model probability $p(M_j)$.

The posterior distribution of any quantity of interest, say Δ , is an average of the posterior distributions of that quantity under each of the models which include that variable, with weights given by the posterior model probabilities, as follows:

$$p(\Delta|y, X) = \sum_{j=1}^{j=2^k} p(\Delta|M_j, y, X) p(M_j|y, X) \quad (4)$$

Expression (4) gives the posterior distribution of parameters, such as the regression coefficients where $p(\Delta|M_j, y, X)$ denotes the posterior distribution of Δ conditional on model j and the data.

In order to apply the BMA procedure described above, we need to specify priors for both the generic model M_j and for the model's parameters α_j , β_j and σ .

For the parameters common across all models we assume complete uncertainty where the prior is located, i.e. intercept and variance are characterised by 'improper' priors with $p(\alpha) \propto 1$ and $p(\sigma) \propto \sigma^{-1}$.

Regarding the slope coefficients β_j , we follow the natural-conjugate g-prior specification of Zellner (1986), assuming a normal density with zero mean and prior covariance matrix defined as $\sigma^2 g(X_j'X_j)^{-1}$, which is proportional to the posterior covariance of the sample $(X_j'X_j)^{-1}$. The hyper-parameter g captures the uncertainty related to the coefficients being indeed zero: a small g implies a small coefficient variance and a higher confidence in the coefficient being zero. The opposite is true when g is large. The conditional prior on β_j is formally defined as:

$$\beta_j | \sigma^2, M_j, g : N(0, \sigma^2 g(X_j'X_j)^{-1}) \quad (5)$$

We depart from the popular choice of fixed g-priors used in previous studies (for a comprehensive overview on different prior structures used in the context of model uncertainty see, e.g. Moral-Benito (2015)). As emphasised by Liang et al. (2008) and Feldkircher and Zeugner (2009), posterior results depend substantially on the researcher's prior choice under a fixed g-prior, essentially ignoring the true underlying data generating process. In particular, Feldkircher and Zeugner (2009) provide extensive Monte Carlo evidence on the performance of different g-priors under

different degrees of noise in the data. The results confirm the superior performance of data-dependent g-priors over fixed g-priors, i.e. flexible g-priors tend to reflect the information content in the data with respect to the dependent variable more accurately as indicated by an adjustment of the average posterior shrinkage factor.

In line with the above-mentioned study, we use a model specific g-prior which adapts to the data. In particular, we follow an EBL approach to elicit g depending on the information contained in the data. Therefore, a separate g is estimated via maximum likelihood for each model. Under this approach, the model-specific EBL prior amounts to:

$$g_j = \max(0, F_j - 1) \quad (6)$$

where $F_j = \frac{R_j^2(n-1-k_j)}{(1-R_j^2)k_j}$ is the standard OLS F-statistic of model M_j , R_j^2 is the associated R-squared of model M_j , n is the number of observations in the dataset, and k_j is the number of covariates for model M_j .

An additional advantage of the EBL prior is that the posterior distribution of the shrinkage factor allows for an interpretation in terms of model fit. The expected value of the shrinkage factor is equal to $1-1/\hat{F}_j$ where \hat{F}_j is the adjusted OLS F-statistic for model M_j . Therefore, an average posterior shrinkage factor of close to one indicates that the posterior results can explain a large fraction of the variation in the data.

Finally, we need to specify a prior distribution over the space M of all 2^k possible models. We assume a beta-binomial prior distribution over the model space which constitutes a popular choice in the related literature. Under this model prior, each variable enters a model independently of all other variables in line with a binomial distribution of prior model probability. The prior expected model size ($E(\bar{m})$) depends on the number of covariates k and the prior inclusion probability for each variable (θ). Since the expected model size is $E(\bar{m}) = k\theta$, the prior inclusion probability can be defined by fixing the prior expected model size $E(\bar{m})$. Under the beta-binomial prior θ is treated as a random variable following a beta distribution with the mean and variance to be fixed by the researcher. This assumption induces prior model mass to be less concentrated around the expected prior model size, essentially reflecting the researcher's prior uncertainty about the model size. In particular, we implement the 'random θ ' prior proposed by Ley and Steel (2009).⁶ Moreover, we follow Sala-i-Martin et al. (2004) in imposing a rather small prior expected model size of 7, as we do not want to form strong beliefs that the number of included variables should be large. Given our set of 42 independent variables, the resulting prior inclusion probability of each regressor is about 0.16.

With 42 possible regressors, the number of models to be estimated is enormous. Since it is infeasible to compute the posterior distributions of all models, we use MCMC

⁶ The "random θ " prior defines the hyper-parameters mean (a) and variance (b) of the beta distribution as follows: $a = 1$ and $b = (K - E(\bar{m}))/E(\bar{m})$.

samplers that visit the model space and keep the models with higher posterior probabilities. The number of times each model is kept is used to approximate the posterior model probability. The degree of convergence of the MCMC sampler towards the true analytical solution is indicated by the correlation between the sampling PMPs and true PMPs for the top 100 models. The empirical results are based on nine different sampling chains in order to improve convergence of the MCMC sampler to the true PMP distribution.⁷

Another source of model uncertainty is related to the functional form of the panel model; it is not clear a priori whether time and/or fixed effects should be included. On the one hand, the inclusion of country- and time-fixed effects diminishes the omitted variable problem: by including country-fixed effects we would take into account unobservable time-invariant country-specific characteristics, such as cultural differences. On the other hand, the inclusion of fixed effects makes interpreting the results more difficult for the variables that vary very little across time in each country, such as corruption control or regulatory quality. In other words, we will not capture the effect of better corruption control in country A compared with country B, but will limit ourselves to the effect of changes in corruption control over time (which are marginal in most cases).

⁷ Computations are performed using the R-package Bayesian Model Averaging Library (Feldkircher and Zeugner (2009)). Each sampling chain consists of one million iterations using 500 000 burn-in points.

4. RESULTS

The results are based on estimating the panel models over the period of 2003–2012 for 25 EU countries (excluding Croatia, Malta and Luxembourg due to limited data availability). To address cross-country heterogeneity in terms of the structure of the economy, the sample of countries is split into two groups: the old EU Member States and the new EU Member States.⁸ We report results from alternative specifications in Table 3 (the old EU Member States) and Table 4 (the new EU Member States).

An important measure of the relevance of each indicator in explaining trade outcomes is PIP, which quantifies the probability of each indicator to be included in the true model and is computed as the sum of posterior model probabilities for all models which contain the relevant variable (all statistics are conditioned on the variable being included in a model). We label in bold variables as robust if two criteria are met simultaneously: (i) PIP should exceed the prior inclusion probability which in this case roughly equals 0.17 given the prior model size of 7, and (ii) the ratio of conditional posterior mean to conditional posterior standard deviation is larger than 1.65 in absolute value, corresponding to a 90% coverage interval under the Gaussian posterior parameter distribution (similarly, a 95% coverage interval was employed by Sala-i-Martin et al. (2004)).

While most of the previous studies choose an ex-ante benchmark specification, we analyse robustness of results by looking across various specifications of the panel models in terms of the inclusion of country- and time-fixed effects. Although there are some differences in relation to the type of panel model employed, the comparison of the results obtained from alternative model types lead to some broad conclusions. Note that some of the year dummies are highly significant for both country groups. The time dummy variables explain a decline in export market shares in 2003–2005, possibly due to the integration of China and the new EU Member States in global trade and the subsequent worsening of trade outcomes during the financial crisis.⁹

We take as reference the results from the panel with country-fixed effects in the second vertical pane of each table. The variables are ordered by decreasing posterior inclusion probability in this model. We also report the ratio between the posterior coefficient estimates and its standard deviation, and we refer to the ratios higher than about 1.7 as "significant", though significance does not strictly have a meaning in a Bayesian setting. For both the old and new EU Member States, competitive pressures from rapidly developing China strongly affect external competitiveness. In the case of the old EU Member States, this is by far the most important factor that limited the increase in market shares over this sample (together with the weight of debt in total liabilities, possibly as a factor hindering the expansion of long-term investment), while investment, liquidity available to firms and regulatory quality appear to play a stimulative role with regard to export outcomes. There is a considerable degree of heterogeneity within the EU in terms of the drivers of external performance between the new and old EU Member States. In particular, we find that the performance of the new EU Member States depends more on labour, TFP growth and inflows of foreign direct investment. These factors also play a substantial role in the old EU Member

⁸ The group of old EU Member States includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Sweden, Spain, and the UK. The group of new EU Member States includes Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

⁹ Both effects are more clear-cut for the old EU Member States.

States for which, somewhat counter-intuitively, institutional quality variables are also more important (not only freedom to trade but also regulatory quality and legal system variables come close to the significance threshold when country-fixed effects are taken into account).

Our findings suggest that some of the novel indicators recently developed by the ESCB CompNet are robust drivers of export performance. For instance, the existent overlap with China decreases export market shares both for the new and old EU Member States. Thus, having specialisation similar to China appears to be harmful for growth of exports irrespective of the country group. This effect is robust to changes in model specifications for the new EU Member States. The disruptive impact of the integration of China on the expansion of market shares of the old EU Member States may also be behind the result that appears when introducing time-fixed effects into the picture: the dummies for 2003 and 2004, i.e. the years when China was erupting in world trade, catch most of the explanatory power. The dummy for 2004 is also significant for the new EU Member States, but the importance of labour productivity remains very high. In this specification, the change in GVC position also has a positive and significant effect on export market shares of the new EU Member States. Positive changes in GVC position can be interpreted as movement upstream in the value chain, e.g. the shift from the final assembly to earlier stages of production like R&D or intermediate inputs. Thus, our results suggest that moving upstream the value chain improves the growth of export market share for the new EU Member States.

The RCA in high-tech industries appears to negatively affect the export growth of the new EU Member States, robustly across the pooled and fixed-effects specifications of the model. We attribute this negative relationship to the fact that, according to the OECD classification, high-tech industries include sectors, such as aircraft, computing machinery, communication equipment, etc., whereas the new EU Member States have managed to gain a market share by focusing on other sectors, such as machinery and electric equipment, where more gross value is generated.

As to the traditional drivers of export market share changes, we found a positive and significant effect of labour productivity growth on export market share changes for the new EU Member States. This effect is highly robust across three model specifications. According to Table 3, some specifications of the model also point to a positive link between labour productivity and exports for the old EU Member States, but it is not as pronounced as in the case of the new EU Member States. The performance of EU countries on the foreign markets appears to be positively driven by the share of investment in GDP, while we did not find dependence between investment and market shares for the new EU Member States. This can be explained by the parallel finding that foreign direct investment is very important for these countries: i.e. export capacity seems to have been financed by FDI rather than by domestic investment. Given the importance of the investment ratio for more mature economies, one could talk of stages of export power construction, from foreign-driven to domestic-driven. The importance of both TFP and labour productivity growth also speaks to a "catching-up" story.

Institutional factors are commonly considered to also play an important role in determining a country's success on foreign markets. The lack of barriers to exports, as captured by freedom to trade, positively impacts export performance of the old EU Member States (see Table 3, all specifications). By contrast, these variables do not

seem to make a difference when the reference group is the smaller subset of the new EU Member States.

Different financial variables are important drivers of export performance for the two sets of countries. For the new EU Member States, the important role of foreign capital is captured by the positive and significant sign of real FDI liabilities growth. For the old EU Member States, a higher amount of loans to non-financial corporations is associated with market share gains.

A special policy focus is often placed on measures of price and cost competitiveness indicators. Results in Tables 3 and 4 suggest a negative elasticity of export market share growth to movements in CPI-based HCI in both sets of countries. However, the dispersion of the value is relatively high and PIP is small in most cases which questions the robustness of the effect. For the new EU Member States, quality-adjusted export unit values are much more important (see Benkovskis and Wörz (2013) for a description of this indicator as well as Benkovskis and Wörz (2012) and Benkovskis and Wörz (2016) for more detailed analyses of non-price factors in the export performance of emerging economies).

5. ROBUSTNESS

Summary statistics of posterior results are presented in Tables 5 and 6. Across most specifications, we obtain a high degree of sampler convergence for both subsamples given a correlation coefficient of close to one between sampling and analytical PMPs, while noticing that convergence is somewhat unsatisfactory for the sample of the old EU Member States in the case of pooled OLS. The posterior model mass covered by the top 100 models is relatively low for all specifications, providing a rationale for model averaging rather than model selection. In line with our prior assumptions on model size, the posterior model size is relatively small, i.e. between 7 and 10 for the old EU Member States and between 5 and 11 for the new EU Member States. The evidence in favour of rather parsimonious models is visualised in Figures 1 and 2, which illustrate the set of indicators included in the top 100 models ordered by their posterior model probabilities. The two images also confirm that for a given variable the signs of posterior means remain strongly stable across models as indicated by the same colour.¹⁰ In terms of model fit, average posterior shrinkage statistics show a somewhat better fit of the data for the new EU Member States compared to the old EU Member States.

In addition to analysing results across various model specifications according to the inclusion of time- and country-fixed effects, we evaluate the robustness of our results across two other dimensions: the chosen g -prior and the chosen price/cost competitiveness measure. First, we assess the sensitivity of PIP rankings and posterior mean coefficients to two fixed g -priors commonly used in the literature, namely the UIP and the so-called benchmark or BRIC prior. Under the UIP, the hyperparameter g equals the number of observations in the dataset, inducing the Bayes factor to mimic the behaviour of the Bayesian information criterion (for further details see, e.g. Kass and Wasserman (1995)). The BRIC prior put forward by Fernández et al. (2001b) bridges the Bayesian information criterion and the risk inflation criterion where it is recommended to set $g = \max(n, k^2)$ where n corresponds to the number of observations and k is the number of regressors. Tables 7 and 8 provide evidence of the robustness of the posterior results to the elicited g -priors, by displaying the PIP rankings for the three alternative prior specifications (EBL, UIP, BRIC). The main message is that PIP rankings are much more variable across g -priors for the old EU Member States. However, most PIPs remain above their corresponding prior inclusion probabilities for the variables which have been found often selected and significant under the benchmark prior setting.

We complete the robustness analysis by looking at the sensitivity of PIP rankings when using the EBL prior to the inclusion of a different indicator of price and cost competitiveness, namely real effective exchange rate deflated, using the ULC for the total economy (HCI-ULC) (see Tables 9 and 10). For both the old and new EU Member States, there is little variation in the PIP rankings when changing the measure of price/cost competitiveness.

¹⁰ The red colour indicates a negative posterior mean and the blue colour – a positive one.

6. JOINTNESS

A usual issue of concern in regressions with many predictors relates to the problem of highly collinear variables. We shed light on this aspect by computing the jointness measure proposed by Ley and Steel (2007) which allows us to characterise the degree of bivariate dependence between two variables.¹¹ Formally, the jointness measure J_{ij} is defined as the posterior odds ratio of models, including both variables i and j versus models which include them only separately:

$$J_{ij} = \frac{P(i \cap j)}{P(i) + P(j) - 2P(i \cap j)} \quad (7)$$

where $P(i)$ denotes the posterior inclusion probability of regressor i and $P(i \cap j)$ denotes the posterior model probability of including both variables i and j defined by the sum of the posterior probabilities for all models that jointly contain these variables.

Higher values of jointness imply that variables tend to enter the visited models jointly and, therefore, capture distinct effects. These regressors act as complements in the sense that each captures a different aspect in explaining the dependent variable. By contrast, a low value of jointness, also referred to as disjointness, provides evidence of collinearity among regressors which tend to capture similar effects essentially acting as substitutes for each other. These variables should not be included jointly in a model. Our jointness results are based on the sampling PMPs of the 100 top models. We follow Ley and Steel (2007) in defining the cut-off values for different degrees of jointness (see also Jeffreys (1961)). According to these cut-off values, the highest degree of disjointness (decisive disjointness) implies that the posterior model mass of models, including regressors i and j only individually, is at least 100 times as much as for the models containing both regressors. Figures 3 and 4 provide an overall picture on the presence of jointness/disjointness among our set of regressors by plotting the log of the posterior odds ratio for all pairs.¹²

Evidently, the majority of variable pairs experiences moderate to strong degrees of bivariate disjointness. These figures show the distribution of disjointness counts across different degrees of disjointness. For both country groups, almost all pairs display some degree of disjointness.¹³

Broadly in line with the findings by Ley and Steel (2007), very strong degrees of disjointness predominantly occur among variable pairs with low PIPs. One notable exception for the new EU Member States is very strong disjointness among the New Overlap with China and Potential Crowding-Out from China which are indeed likely to proxy for similar effects. In contrast to Ley and Steel (2007), we do not find any evidence of decisive disjointness in our dataset. This suggests that collinearity problems do not seem to be a major issue of concern in our variable set, enhancing further the robustness of our reported posterior results.

¹¹ Note that an alternative jointness measure is presented by Doppelhofer and Weeks (2009). We restrict our analysis to the jointness statistic by Ley and Steel (2007), as their measure is also well defined for cases where one of the regressors is included in all or none of the models.

¹² The jointness analysis in this section refers to a model with country-fixed effects only. Jointness results for our other model specifications are available upon request.

¹³ Note that it is not uncommon to find a high share of regressor pairs to display some degree of disjointness. For example, Ley and Steel (2007) find shares of 92.3% and 99.1% for the two datasets they analyse.

7. CONCLUSIONS

This paper looks at systematic empirical correlations between export market share growth and variables commonly discussed as drivers of external competitiveness, exploring the space of all combinations of these variables. Our information set covers various economic and institutional pillars and investigates their link with trade outcomes by building on the growth literature that deals with model uncertainty.

Several model specifications are considered, but the expansion of export market shares is linked to different factors in the old and new EU Member States, with one exception: competitive pressures from rapidly developing China have strongly affected export performance of both the old and new EU Member States since the early 2000s. In the case of the old EU Member States, investment, the quality of institutions and liquidity available to firms also appear to play a role for trade outcomes. For the new EU Member States, labour and total factor productivity are particularly important, and export market share growth is sustained by inward FDI rather than by domestic investment. In both sets of countries, price competitiveness does not seem to play a very important role. Relative export prices do show some consistent correlation with export performance for the new EU Member States, but only when they are adjusted for quality.

Overall, the BMA-based evidence supports the usefulness of the newly developed CompNet indicators as explanatory variables of changes in export market shares. These indicators make use of detailed six-digit product level data (the Harmonised System classification, about 5 000 product categories), using the UN Comtrade database compiled by the UN Statistics Division as raw data. Such a high level of disaggregation allows going beyond the simple analysis of aggregate costs and market shares and gives an opportunity to assess important aspects as competitive pressures.

Our analysis focuses on discovering empirical regularities, hence it can hardly be used as a platform for policy prescriptions. But a clear one does emerge: what sustains market share expansion changes according to the "maturity" of the exporting economy, with catching-up factors in terms of labour and total factor productivity being more important in emerging economies. Also, domestic investment and domestic financing have a central role in more advanced economies, while the catching-up ones typically rely on inward FDI.

APPENDIX

Table 1

Dataset description

Variable name	Source	Description
Relative prices		
HCI–CPI	European Central Bank	Year-on-year; %
Relative export prices adjusted for quality	CompNet, UN Comtrade	Year-on-year; %
Trade specialisation		
Existent overlap with China	CompNet, UN Comtrade	Share of total trade links
New overlap with China	CompNet, UN Comtrade	Share of total trade links
Potential crowding-out (versus China)	CompNet, UN Comtrade	Share of total trade links
RCA in high-tech industries	CompNet, UN Comtrade	OECD classification
RCA in medium-high-tech industries	CompNet, UN Comtrade	OECD classification
GVC position	CompNet, WIOD	Koopman et al. (2010)
Change in GVC position	CompNet, WIOD	First difference in GVC position to the use of primary energy
Macroeconomic environment		
Government consumption (% of GDP)	AMECO	Based on current prices
Investment (% of GDP)	AMECO	Based on current prices
Investment growth	AMECO	Year-on-year; %
Share of construction in investment	AMECO	Based on current prices
Tax burden	Eurostat	(Indirect, income and capital taxes + social contributions)/GDP
Public debt (% of GDP)	AMECO	General government consolidated gross debt
Rents from natural resources	WDI	% of GDP
Energy imports (% of energy use)	WDI	Ratio of energy imports
TFP growth	AMECO	Year-on-year; %
Growth surprise	WEO	Difference in actual GDP growth rate and 5-year ahead WEO forecast
Labour market and demographic variables		
Labour force with secondary education	WDI	% of total labour force
Labour force with tertiary education	WDI	% of total labour force
Index of human capital	Pen World Tables	Years of schooling and returns to education
Labour force participation rate	WDI	Proportion of active population aged 15–64
% of temporary employees	Eurostat	Share in the total number of employees
% of part-time employment	WDI	Share in the total number of employees
Labour productivity growth	AMECO	Year-on-year; %
Population growth	Eurostat	Year-on-year; %
Age dependency ratio	Eurostat	Ratio of people younger than 15 or older than 64 to those aged 15–64
Institutions and business environment		
Rule of law	WGI	Index from –2.5 to 2.5
Government effectiveness	WGI	Index from –2.5 to 2.5
Control of corruption	WGI	Index from –2.5 to 2.5
Regulatory quality	WGI	Index from –2.5 to 2.5
Size of government	Fraser Institute	Index from 0 to 10
Legal system and property rights	Fraser Institute	Index from 0 to 10
Freedom to trade	Fraser Institute	Index from 0 to 10
Patent applications to the EPO	Eurostat	Per million inhabitants
Financial market variables		
Real FDI liabilities growth	External Wealth of Nations	Year-on-year; % – CPI deflated
Loans growth	Eurostat	Year-on-year; % – non-financial corporations
Loans from foreign banks growth	BIS	Year-on-year; %
Equity (% of total liabilities)	Eurostat	Non-financial corporations, financial liabilities – shares and other equity
Debt (% of total liabilities)	Eurostat	Non-financial corporations, financial liabilities – securities other than shares
Loans (% of total liabilities)	Eurostat	Non-financial corporations, financial liabilities – loans

Table 2
Descriptive statistics of the variables

	Old EU Member States				New EU Member States			
	Mean	Standard deviation			Mean	Standard deviation		
		Total	Between-country	Within-country		Total	Between-country	Within-country
Export market share growth	-0.03	0.05	0.01	0.05	0.03	0.07	0.03	0.06
HCI-CPI	0.01	0.03	0.01	0.03	0.02	0.05	0.02	0.05
Relative export prices adjusted for quality	0.01	0.03	0.01	0.02	-0.02	0.05	0.01	0.04
Existent overlap with China	0.59	0.07	0.02	0.06	0.58	0.07	0.05	0.05
New overlap with China	0.11	0.02	0.02	0.01	0.15	0.03	0.02	0.02
Potential crowding-out (versus China)	0.08	0.02	0.02	0.01	0.10	0.02	0.02	0.01
RCA in high-tech industries	0.91	0.49	0.50	0.10	0.67	0.45	0.42	0.21
RCA in medium-high-tech industries	1.26	1.05	1.07	0.16	0.72	0.26	0.24	0.12
GVC position	-0.15	0.06	0.06	0.02	-0.20	0.06	0.05	0.02
Change in GVC position	0.00	0.01	0.00	0.01	0.00	0.02	0.01	0.02
Government consumption (% of GDP)	21.69	3.29	3.20	1.11	19.09	1.88	1.53	1.17
Investment (% of GDP)	20.30	3.22	2.43	2.19	23.86	4.42	2.92	3.42
Investment growth	0.00	0.09	0.02	0.08	0.04	0.15	0.04	0.15
Share of construction in investment	0.58	0.08	0.08	0.03	0.55	0.08	0.06	0.05
Tax burden	0.40	0.06	0.06	0.01	0.32	0.05	0.05	0.01
Public debt	66.60	27.27	24.93	12.75	34.26	20.00	19.07	8.16
Rents from natural resources	0.74	0.82	0.80	0.27	1.51	1.34	1.19	0.70
Energy imports	51.69	35.04	35.68	6.05	47.80	22.96	23.27	5.53
TFP growth	0.00	0.02	0.00	0.02	0.01	0.04	0.01	0.04
Growth surprise	-0.01	0.03	0.01	0.03	-0.01	0.05	0.01	0.05
Labour force with secondary education	42.56	12.00	12.27	1.81	62.41	10.37	10.70	1.57
Labour force with tertiary education	27.24	7.14	7.00	2.27	23.08	7.65	7.38	2.92
Index of human capital	2.95	0.21	0.21	0.05	3.09	0.19	0.20	0.04
Labour force participation rate	60.46	8.04	8.27	0.86	57.43	3.82	3.83	1.05
% of temporary employees	13.64	6.38	6.43	1.40	8.81	6.75	6.79	1.79
% of part-time employment	17.22	9.41	9.55	1.81	6.68	3.16	3.12	1.02
Labour productivity growth	0.01	0.02	0.01	0.02	0.04	0.04	0.02	0.03
Population growth	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.01
Age dependency ratio	81.46	5.22	4.85	2.29	75.96	5.31	5.02	2.24
Rule of law	1.47	0.45	0.46	0.08	0.62	0.41	0.41	0.11
Government effectiveness	1.54	0.52	0.52	0.16	0.69	0.45	0.45	0.10
Control of corruption	1.56	0.69	0.70	0.14	0.38	0.42	0.42	0.12
Regulatory quality	1.44	0.34	0.33	0.11	0.97	0.30	0.29	0.10
Size of government	4.97	1.01	0.89	0.52	5.87	0.99	0.86	0.56
Legal system and property rights	7.76	1.03	1.00	0.35	6.20	0.70	0.64	0.33
Freedom to trade	8.44	0.41	0.27	0.32	7.96	0.46	0.33	0.33
Patent applications to the EPO	141.01	94.36	96.83	11.63	12.65	14.63	14.40	4.89
Real FDI liabilities growth	0.10	0.19	0.05	0.19	0.18	0.23	0.04	0.22
Loans growth	0.04	0.08	0.03	0.08	0.10	0.14	0.06	0.13
Loans from foreign banks growth	0.11	0.19	0.04	0.19	0.32	0.42	0.11	0.41
Equity (% of total liabilities)	0.51	0.09	0.08	0.05	0.52	0.09	0.08	0.05
Debt (% of total liabilities)	0.05	0.03	0.03	0.01	0.01	0.01	0.01	0.01
Loans (% of total liabilities)	0.37	0.09	0.08	0.04	0.35	0.10	0.09	0.04

Table 3
Estimation results for the old EU Member States

Specification	Pooled OLS			Country-fixed effects (within a group)			Country- and time- fixed effects			Country-fixed effects and optional time dummies		
	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.
Potential crowding-out from China	0.24	-0.11	-0.84	0.86	-0.42	-2.71	0.12	-0.17	-0.72	0.15	0.00	-0.01
New overlap with China	0.23	-0.11	-0.81	0.70	-0.31	-2.53	0.13	0.23	0.95	0.33	0.13	1.59
Debt (% of total liabilities)	0.21	-0.08	-0.84	0.51	-0.17	-2.09	0.16	-0.11	-1.52	0.19	-0.06	-0.85
Investment (% of GDP)	0.43	0.23	1.61	0.44	0.28	1.59	0.16	0.18	1.24	0.21	0.11	0.88
Loans growth	0.56	0.17	2.14	0.34	0.14	1.64	0.08	0.07	0.81	0.17	0.04	0.69
Change in GVC position	0.30	-0.12	-1.32	0.33	-0.15	-1.62	0.06	-0.01	-0.11	0.14	0.01	0.13
Regulatory quality	0.18	0.10	0.53	0.31	0.14	1.59	0.18	0.12	1.61	0.18	0.05	0.74
Labour productivity growth	0.35	0.15	1.43	0.31	0.17	1.51	0.09	0.08	0.76	0.15	0.02	0.26
TFP growth	0.33	0.16	1.07	0.25	0.20	0.97	0.13	0.19	1.05	0.16	0.05	0.48
Freedom to trade	0.44	0.22	1.76	0.24	0.17	1.25	0.97	0.50	4.23	0.30	0.12	1.43
Legal system and property rights	0.19	0.13	0.68	0.24	0.12	1.38	0.16	0.12	1.51	0.19	0.05	0.87
Size of government	0.21	-0.10	-0.91	0.23	-0.11	-1.26	0.07	-0.03	-0.41	0.14	0.00	-0.04
HCI-CPI	0.15	0.00	0.02	0.23	-0.11	-1.19	0.07	-0.03	-0.34	0.14	0.00	-0.08
Public debt (% of GDP)	0.21	0.15	0.76	0.22	0.19	0.83	0.09	0.11	0.60	0.17	0.07	0.61
Existent overlap with China	0.52	-0.20	-1.86	0.21	-0.20	-0.87	0.08	-0.11	-0.52	0.15	0.00	-0.04
Labour force with tertiary education	0.22	-0.09	-0.87	0.20	-0.14	-0.93	0.08	-0.09	-0.77	0.15	-0.01	-0.19
Energy imports (% of energy use)	0.17	0.06	0.45	0.19	0.09	1.11	0.06	0.00	0.03	0.15	-0.01	-0.10
Loans from foreign banks growth	0.19	-0.07	-0.71	0.19	-0.10	-1.05	0.16	-0.14	-1.42	0.18	-0.05	-0.77
GVC position	0.18	-0.06	-0.49	0.19	-0.10	-0.79	0.07	-0.04	-0.38	0.15	-0.01	-0.26
Control of corruption	0.17	0.05	0.20	0.19	0.09	0.99	0.07	0.05	0.62	0.16	0.03	0.41
Growth surprise	0.31	0.12	0.72	0.18	0.00	-0.01	0.08	-0.07	-0.27	0.15	-0.02	-0.24
Loans (% of total liabilities)	0.21	0.09	0.57	0.18	0.15	0.69	0.07	0.03	0.26	0.15	0.02	0.15
Labour force with secondary education	0.16	0.02	0.13	0.18	0.08	0.94	0.10	0.08	1.09	0.16	0.03	0.47
Age dependency ratio	0.17	0.01	0.08	0.16	-0.09	-0.77	0.11	-0.10	-1.14	0.17	-0.05	-0.63
Equity (% of total liabilities)	0.21	-0.07	-0.55	0.16	0.10	0.37	0.07	0.06	0.42	0.16	0.04	0.40
Real FDI liabilities growth	0.18	-0.06	-0.64	0.16	-0.07	-0.72	0.06	-0.01	-0.13	0.14	0.01	0.14
Share of construction in investment	0.17	-0.05	-0.38	0.16	0.04	0.32	0.11	0.09	1.10	0.18	0.06	0.72
RCA in medium-high-tech industries	0.18	-0.06	-0.38	0.16	0.06	0.75	0.06	0.00	0.04	0.15	0.02	0.34
Government consumption (% of GDP)	0.16	-0.02	-0.17	0.15	0.06	0.44	0.10	0.11	0.99	0.19	0.06	0.87
Investment growth	0.19	0.05	0.34	0.15	-0.05	-0.25	0.08	0.08	0.67	0.16	0.04	0.46
Tax burden	0.17	-0.04	-0.23	0.15	0.05	0.52	0.07	0.04	0.51	0.16	0.03	0.44
Relative export prices adjusted for quality	0.31	-0.11	-1.41	0.15	-0.06	-0.72	0.06	-0.01	-0.17	0.14	0.00	-0.03
Index of human capital	0.17	0.05	0.41	0.15	-0.03	-0.18	0.06	-0.02	-0.13	0.15	0.00	0.01
Population growth	0.25	-0.13	-1.07	0.15	-0.06	-0.57	0.07	-0.03	-0.32	0.15	0.01	0.08
Rents from natural resources	0.16	0.00	0.00	0.14	0.06	0.68	0.09	-0.07	-1.02	0.17	-0.04	-0.59
% of part-time employment	0.17	-0.08	-0.39	0.14	-0.03	-0.31	0.07	0.03	0.32	0.15	0.01	0.14
Government effectiveness	0.18	-0.12	-0.61	0.13	-0.02	-0.20	0.07	0.04	0.47	0.15	0.02	0.37
Labour force participation rate	0.17	0.10	0.47	0.13	-0.01	-0.05	0.06	0.01	0.12	0.15	-0.01	-0.14
Rule of law	0.16	0.03	0.10	0.13	-0.02	-0.21	0.06	0.00	-0.01	0.15	-0.01	-0.18
Patent applications	0.17	-0.03	-0.17	0.13	0.00	0.00	0.06	-0.02	-0.32	0.15	0.01	0.19
% of temporary employees	0.18	0.05	0.49	0.13	0.01	0.16	0.06	-0.03	-0.39	0.15	-0.01	-0.19
RCA in high-tech industries	0.19	-0.05	-0.34	0.12	0.03	0.33	0.08	0.06	0.85	0.15	0.02	0.41
Time-fixed effects												
2003	-	-	-	-	-	-	0.87	-0.24	-3.22	-	-	-
2004	-	-	-	-	-	-	1.00	-0.41	-4.40	-	-	-
2005	-	-	-	-	-	-	0.11	-0.15	-0.86	-	-	-
2006	-	-	-	-	-	-	0.07	0.02	0.16	-	-	-
2007	-	-	-	-	-	-	0.09	-0.10	-0.81	-	-	-
2008	-	-	-	-	-	-	0.88	0.25	2.94	-	-	-
2009	-	-	-	-	-	-	0.86	-0.35	-3.53	-	-	-
2010	-	-	-	-	-	-	0.23	0.16	1.48	-	-	-
2011	-	-	-	-	-	-	0.15	-0.08	-0.59	-	-	-

Note: The Table shows BMA posterior results based on a beta-binomial model prior and an EBL g-prior. PIP refers to posterior inclusion probability; Mean and St. dev. refer to the posterior mean and standard deviation of the coefficient estimates respectively. Country-fixed effects are based on within-group data transformation.

Table 4
Estimation results for the new EU Member States

Specification	Pooled OLS			Country-fixed effects (within a group)			Country- and time- fixed effects			Country-fixed effects and optional time dummies		
	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.
Labour productivity growth	0.80	0.34	3.24	0.70	0.31	3.19	0.39	0.19	2.04	0.35	0.12	1.26
Existent overlap with China	0.37	-0.25	-2.05	0.68	-0.35	-2.96	0.96	-0.57	-3.79	0.53	-0.22	-1.75
Real FDI liabilities growth	0.52	0.21	2.40	0.31	0.22	2.19	0.18	0.15	1.36	0.30	0.09	1.07
TFP growth	0.27	0.29	1.77	0.28	0.30	2.11	0.22	0.20	1.29	0.24	0.05	0.37
RCA in high-tech industries	0.74	-0.31	-2.57	0.28	-0.22	-2.14	0.24	-0.15	-1.54	0.27	-0.08	-0.79
New overlap with China	0.13	0.17	1.00	0.12	0.19	1.31	0.14	0.00	-0.02	0.24	-0.02	-0.16
Labour force participation rate	0.17	-0.16	-1.43	0.12	-0.14	-1.53	0.16	-0.10	-1.30	0.30	-0.09	-1.04
Relative export prices adjusted for quality	0.18	0.13	1.58	0.12	0.13	1.54	0.09	0.04	0.47	0.22	0.02	0.27
Share of construction in investment	0.07	0.04	0.27	0.11	0.17	1.37	0.10	0.07	0.57	0.26	0.08	0.86
Loans from foreign banks growth	0.12	-0.12	-1.14	0.10	-0.15	-1.29	0.36	-0.22	-2.00	0.46	-0.15	-1.64
Tax burden	0.08	-0.01	-0.05	0.09	0.11	1.29	0.53	0.20	2.41	0.55	0.19	1.88
Labour force with tertiary education	0.09	-0.04	-0.24	0.08	-0.12	-0.63	0.12	0.18	0.77	0.26	0.09	0.77
Size of government	0.10	-0.10	-0.85	0.08	-0.11	-1.12	0.08	0.00	0.04	0.21	0.03	0.37
Patent applications	0.20	-0.16	-1.54	0.07	-0.10	-0.95	0.08	0.00	0.01	0.21	0.01	0.13
GVC position	0.07	-0.01	-0.06	0.07	0.09	1.03	0.10	0.00	-0.01	0.24	-0.03	-0.24
Growth surprise	0.09	-0.05	-0.26	0.07	0.04	0.20	0.11	0.05	0.27	0.21	-0.02	-0.14
Legal system and property rights	0.09	0.10	0.66	0.07	0.09	0.93	0.08	-0.03	-0.32	0.24	-0.06	-0.69
Investment (% of GDP)	0.08	-0.07	-0.62	0.06	-0.08	-0.74	0.13	-0.11	-0.90	0.31	-0.12	-1.03
Investment growth	0.07	0.02	0.20	0.06	0.08	0.59	0.14	0.11	0.89	0.22	0.03	0.31
Loans (% of total liabilities)	0.21	-0.19	-1.40	0.06	-0.10	-0.68	0.09	-0.05	-0.40	0.21	-0.03	-0.33
% of temporary employees	0.10	-0.09	-0.92	0.06	-0.07	-0.72	0.09	-0.04	-0.42	0.21	0.01	0.10
HCI-CPI	0.07	-0.04	-0.55	0.06	-0.07	-0.79	0.18	-0.12	-1.37	0.41	-0.14	-1.49
Freedom to trade	0.16	0.15	1.35	0.06	0.06	0.57	0.20	-0.13	-1.35	0.26	-0.09	-0.73
Labour force with secondary education	0.31	0.26	1.84	0.05	0.07	0.58	0.09	0.05	0.41	0.22	0.03	0.28
Government consumption (% of GDP)	0.09	0.08	0.74	0.05	0.07	0.66	0.09	0.02	0.15	0.22	0.04	0.35
Change in GVC position	0.09	0.08	0.98	0.05	0.06	0.70	0.60	0.23	2.52	0.67	0.23	2.28
Age dependency ratio	0.08	-0.03	-0.17	0.05	-0.06	-0.49	0.09	0.04	0.35	0.22	0.05	0.44
Index of human capital	0.08	0.02	0.11	0.05	0.04	0.31	0.09	0.04	0.37	0.22	0.04	0.38
RCA in medium-high-tech industries	0.09	-0.07	-0.67	0.05	-0.04	-0.51	0.08	-0.01	-0.10	0.21	0.00	-0.01
Potential crowding-out from China	0.12	-0.14	-1.01	0.05	-0.04	-0.38	0.09	0.00	-0.03	0.24	0.04	0.34
Energy imports (% of energy use)	0.08	-0.02	-0.18	0.05	0.03	0.28	0.09	0.03	0.34	0.21	0.01	0.05
Equity (% of total liabilities)	0.09	-0.01	-0.08	0.05	-0.03	-0.30	0.09	-0.03	-0.33	0.21	0.01	0.07
Loans growth	0.07	-0.05	-0.47	0.05	-0.03	-0.35	0.12	0.09	0.87	0.24	0.05	0.53
Rents from natural resources	0.07	0.04	0.38	0.05	0.03	0.34	0.12	0.08	0.94	0.26	0.08	0.73
Population growth	0.08	-0.07	-0.76	0.05	-0.04	-0.47	0.25	-0.13	-1.70	0.37	-0.11	-1.34
Rule of law	0.10	-0.11	-0.54	0.04	0.00	-0.01	0.08	0.04	0.39	0.21	0.03	0.29
Public debt (% of GDP)	0.09	-0.01	-0.05	0.04	0.00	0.03	0.11	-0.08	-0.74	0.25	-0.08	-0.69
% of part-time employment	0.09	-0.07	-0.65	0.04	0.01	0.08	0.08	-0.01	-0.15	0.20	-0.01	-0.11
Government effectiveness	0.10	0.00	0.01	0.04	0.03	0.34	0.08	0.02	0.32	0.21	0.03	0.28
Control of corruption	0.10	-0.09	-0.55	0.04	-0.02	-0.18	0.09	0.05	0.58	0.26	0.07	0.78
Regulatory quality	0.13	0.16	0.98	0.04	0.01	0.15	0.08	0.00	0.04	0.21	0.01	0.14
Debt (% of total liabilities)	0.07	0.01	0.12	0.04	0.00	0.05	0.08	0.03	0.37	0.21	0.03	0.39
Time-fixed effects												
2003	-	-	-	-	-	-	0.09	-0.03	-0.29	-	-	-
2004	-	-	-	-	-	-	0.32	-0.15	-1.75	-	-	-
2005	-	-	-	-	-	-	0.10	-0.03	-0.34	-	-	-
2006	-	-	-	-	-	-	0.96	0.36	3.39	-	-	-
2007	-	-	-	-	-	-	0.46	0.19	2.05	-	-	-
2008	-	-	-	-	-	-	0.15	0.04	0.22	-	-	-
2009	-	-	-	-	-	-	0.32	-0.24	-1.64	-	-	-
2010	-	-	-	-	-	-	0.94	0.32	3.39	-	-	-
2011	-	-	-	-	-	-	0.14	-0.09	-0.41	-	-	-

Note: The Table shows BMA posterior results based on a beta-binomial model prior and an EBL g-prior. PIP refers to posterior inclusion probability; Mean and St. dev. refer to the posterior mean and standard deviation of the coefficient estimates respectively. Country-fixed effects are based on within-group data transformation.

Table 5
Summary statistics for the old EU Member States

Specification	Pooled OLS	Country-fixed effects (within a group)	Time- and within-group country-fixed effects	Time- and country-fixed effects within a group
Mean no. regressors	9.69	9.67	8.93	6.89
No. models visited	6448253	5438354	3048699	7168751
% visited	0.00015	0.00012	0.00000	0.00016
% 100 Topmodels	6.00	11.00	21.00	19.00
% 10 Topmodels	0.92	6.20	11.00	4.60
Corr PMP	0.80	0.94	1.00	0.95
Shrinkage-Stats	Av = 0.733	Av = 0.85	Av = 0.9332	Av = 0.3356

Note: "%-visited" refers to the percentage of all models evaluated by the MCMC sampler. "% 100 Topmodels" refers to the sum of PMPs of the top 100 models according to their PIP (analogous definition applies for "% 10 Topmodels"). "Corr PMP" denotes the correlation between the sampling PMPs and analytical PMPs for the top 100 models and "Shrinkage-Stats" defines the average posterior shrinkage statistics.

Table 6
Summary statistics for the new EU Member States

Specification	Pooled OLS	Country-fixed effects (within a group)	Time- and within-group country-fixed effects	Time- and country-fixed effects within a group
Mean no. regressors	6.71	4.60	10.63	11.12
No. models visited	3826390	3099803	3739431	7547131
% visited	0.00009	0.00007	0.00000	0.00017
% 100 Topmodels	16.00	38.00	8.30	8.40
% 10 Topmodels	7.80	22.00	3.90	2.10
Corr PMP	1.00	1.00	1.00	0.97
Shrinkage-Stats	Av = 0.923	Av = 0.9287	Av = 0.9224	Av = 0.51

Note: "% visited" refers to the percentage of all models evaluated by the MCMC sampler. "% 100 Topmodels" refers to the sum of posterior model probabilities (PMPs) of the top 100 models according to their PIP (analogous definition applies for "% 10 Topmodels"). "Corr PMP" denotes the correlation between the sampling PMPs and analytical PMPs for the top 100 models and "Shrinkage-Stats" defines the average posterior shrinkage statistics.

Table 7
Robustness of PIPs to different g-priors – the old EU Member States

Specification	Pooled OLS			Country-fixed effects (within a group)			Country- and time- fixed effects			Country-fixed effects and optional time dummies		
	EBL	BRIC	UIP	EBL	BRIC	UIP	EBL	BRIC	UIP	EBL	BRIC	UIP
Potential crowding-out from China	0.24	0.01	0.03	0.86	0.99	0.97	0.12	0.01	0.02	0.24	0.00	0.01
New overlap with China	0.23	0.00	0.01	0.70	0.03	0.15	0.13	0.00	0.02	0.24	0.04	0.12
Debt (% of total liabilities)	0.21	0.01	0.02	0.51	0.01	0.08	0.16	0.01	0.04	0.21	0.00	0.02
Investment (% of GDP)	0.43	0.02	0.06	0.44	0.01	0.06	0.16	0.01	0.03	0.31	0.00	0.01
Loans growth	0.56	0.02	0.11	0.34	0.02	0.09	0.08	0.01	0.02	0.24	0.00	0.01
Change in GVC position	0.30	0.02	0.08	0.33	0.00	0.02	0.06	0.00	0.01	0.67	0.00	0.00
Regulatory quality	0.18	0.00	0.01	0.31	0.01	0.06	0.18	0.01	0.05	0.21	0.00	0.01
Labour productivity growth	0.35	0.08	0.14	0.31	0.00	0.02	0.09	0.00	0.02	0.35	0.00	0.01
TFP growth	0.33	0.10	0.16	0.25	0.00	0.01	0.13	0.02	0.04	0.24	0.00	0.01
Freedom to trade	0.44	0.03	0.08	0.24	0.01	0.04	0.97	0.96	0.99	0.26	0.04	0.13
Legal system and property rights	0.19	0.00	0.01	0.24	0.00	0.01	0.16	0.00	0.03	0.24	0.00	0.01
Size of government	0.21	0.00	0.01	0.23	0.00	0.01	0.07	0.00	0.01	0.21	0.00	0.00
HCI-CPI	0.15	0.00	0.01	0.23	0.00	0.01	0.07	0.00	0.02	0.41	0.00	0.00
Public debt (% of GDP)	0.21	0.00	0.01	0.22	0.00	0.01	0.09	0.00	0.01	0.25	0.00	0.00
Existent overlap with China	0.52	0.16	0.36	0.21	0.00	0.01	0.08	0.01	0.01	0.53	0.00	0.00
Labour force with tertiary education	0.22	0.00	0.02	0.20	0.00	0.01	0.08	0.00	0.02	0.26	0.00	0.00
Energy imports (% of energy use)	0.17	0.00	0.01	0.19	0.00	0.01	0.06	0.00	0.01	0.21	0.00	0.00
Loans from foreign banks growth	0.19	0.00	0.01	0.19	0.00	0.01	0.16	0.01	0.04	0.46	0.00	0.01
GVC position	0.18	0.00	0.01	0.19	0.01	0.02	0.07	0.00	0.01	0.24	0.00	0.00
Control of corruption	0.17	0.00	0.01	0.19	0.01	0.02	0.07	0.01	0.02	0.26	0.01	0.02
Growth surprise	0.31	0.25	0.33	0.18	0.00	0.01	0.08	0.00	0.02	0.21	0.00	0.00
Loans (% of total liabilities)	0.21	0.00	0.02	0.18	0.00	0.01	0.07	0.00	0.01	0.21	0.00	0.00
Labour force with secondary education	0.16	0.00	0.01	0.18	0.00	0.01	0.10	0.00	0.02	0.22	0.00	0.01
Age dependency ratio	0.17	0.00	0.02	0.16	0.00	0.01	0.11	0.00	0.02	0.22	0.00	0.01
Equity (% of total liabilities)	0.21	0.00	0.02	0.16	0.00	0.01	0.07	0.00	0.01	0.21	0.00	0.01
Real FDI liabilities growth	0.18	0.00	0.01	0.16	0.00	0.01	0.06	0.00	0.01	0.30	0.00	0.00
Share of construction in investment	0.17	0.00	0.01	0.16	0.00	0.01	0.11	0.00	0.02	0.26	0.00	0.01
RCA in medium-high-tech industries	0.18	0.00	0.01	0.16	0.00	0.01	0.06	0.00	0.01	0.21	0.00	0.01
Government consumption (% of GDP)	0.16	0.00	0.01	0.15	0.00	0.01	0.10	0.00	0.02	0.22	0.01	0.02
Investment growth	0.19	0.03	0.05	0.15	0.00	0.01	0.08	0.00	0.02	0.22	0.00	0.01
Tax burden	0.17	0.00	0.01	0.15	0.00	0.01	0.07	0.00	0.01	0.55	0.00	0.01
Relative export prices adjusted for quality	0.31	0.01	0.04	0.15	0.00	0.01	0.06	0.00	0.01	0.22	0.00	0.00
Index of human capital	0.17	0.00	0.01	0.15	0.00	0.01	0.06	0.01	0.01	0.22	0.00	0.01
Population growth	0.25	0.00	0.01	0.15	0.00	0.01	0.07	0.00	0.01	0.37	0.00	0.00
Rents from natural resources	0.16	0.00	0.01	0.14	0.00	0.01	0.09	0.00	0.02	0.26	0.00	0.01
% of part-time employment	0.17	0.00	0.01	0.14	0.00	0.01	0.07	0.00	0.01	0.20	0.00	0.00
Government effectiveness	0.18	0.00	0.01	0.13	0.00	0.01	0.07	0.00	0.01	0.21	0.00	0.00
Labour force participation rate	0.17	0.00	0.01	0.13	0.00	0.01	0.06	0.00	0.01	0.30	0.00	0.00
Rule of law	0.16	0.00	0.01	0.13	0.00	0.01	0.06	0.00	0.01	0.21	0.00	0.01
Patent applications	0.17	0.00	0.01	0.13	0.00	0.01	0.06	0.00	0.01	0.21	0.00	0.00
% of temporary employees	0.18	0.00	0.01	0.13	0.00	0.01	0.06	0.00	0.01	0.21	0.00	0.00
RCA in high-tech industries	0.19	0.00	0.01	0.12	0.00	0.01	0.08	0.00	0.02	0.27	0.00	0.00
Time-fixed effects												
2003	–	–	–	–	–	–	0.87	0.36	0.77	–	–	–
2004	–	–	–	–	–	–	1.00	0.99	1.00	–	–	–
2005	–	–	–	–	–	–	0.11	0.00	0.01	–	–	–
2006	–	–	–	–	–	–	0.07	0.00	0.01	–	–	–
2007	–	–	–	–	–	–	0.09	0.00	0.02	–	–	–
2008	–	–	–	–	–	–	0.88	0.49	0.84	–	–	–
2009	–	–	–	–	–	–	0.86	0.97	0.96	–	–	–
2010	–	–	–	–	–	–	0.23	0.01	0.05	–	–	–
2011	–	–	–	–	–	–	0.15	0.03	0.06	–	–	–

Note: The Table shows posterior inclusion probabilities for different g-priors. EBL refers to an empirical local Bayes approach; UIP denotes the unit information prior and BRIC refers to the prior setting proposed by Fernández et al. (2001a).

Table 8
Robustness of PIPs to different g-priors – the new EU Member States

Specification	Pooled OLS			Country-fixed effects (within a group)			Country- and time- fixed effects			Country-fixed effects and optional time dummies		
	EBL	BRIC	UIP	EBL	BRIC	UIP	EBL	BRIC	UIP	EBL	BRIC	UIP
Labour productivity growth	0.80	0.81	0.81	0.70	0.53	0.67	0.39	0.16	0.28	0.35	0.01	0.05
Existent overlap with China	0.37	0.03	0.18	0.68	0.85	0.80	0.96	0.94	0.97	0.53	0.01	0.06
Real FDI liabilities growth	0.52	0.32	0.49	0.31	0.06	0.14	0.18	0.02	0.06	0.30	0.00	0.01
TFP growth	0.27	0.19	0.20	0.28	0.17	0.22	0.22	0.05	0.09	0.24	0.00	0.01
RCA in high-tech industries	0.74	0.49	0.69	0.28	0.06	0.13	0.24	0.02	0.09	0.27	0.00	0.01
New overlap with China	0.13	0.01	0.04	0.12	0.03	0.05	0.14	0.01	0.03	0.24	0.00	0.01
Labour force participation rate	0.17	0.01	0.04	0.12	0.01	0.03	0.16	0.00	0.02	0.30	0.00	0.01
Relative export prices adjusted for quality	0.18	0.01	0.05	0.12	0.01	0.03	0.09	0.00	0.01	0.22	0.00	0.01
Share of construction in investment	0.07	0.01	0.02	0.11	0.00	0.02	0.10	0.00	0.01	0.26	0.00	0.01
Loans from foreign banks growth	0.12	0.00	0.02	0.10	0.00	0.01	0.36	0.00	0.05	0.46	0.01	0.05
Tax burden	0.08	0.00	0.02	0.09	0.00	0.02	0.53	0.01	0.12	0.55	0.01	0.05
Labour force with tertiary education	0.09	0.01	0.02	0.08	0.02	0.03	0.12	0.00	0.02	0.26	0.00	0.01
Size of government	0.10	0.00	0.02	0.08	0.00	0.02	0.08	0.00	0.01	0.21	0.00	0.01
Patent applications	0.20	0.02	0.08	0.07	0.00	0.02	0.08	0.00	0.01	0.21	0.00	0.00
GVC position	0.07	0.00	0.02	0.07	0.00	0.01	0.10	0.00	0.02	0.24	0.00	0.01
Growth surprise	0.09	0.00	0.02	0.07	0.01	0.02	0.11	0.01	0.03	0.21	0.00	0.00
Legal system and property rights	0.09	0.00	0.02	0.07	0.00	0.02	0.08	0.00	0.01	0.24	0.00	0.00
Investment (% of GDP)	0.08	0.00	0.01	0.06	0.00	0.01	0.13	0.00	0.02	0.31	0.00	0.01
Investment growth	0.07	0.00	0.01	0.06	0.01	0.01	0.14	0.01	0.05	0.22	0.00	0.01
Loans (% of total liabilities)	0.21	0.05	0.13	0.06	0.01	0.01	0.09	0.00	0.01	0.21	0.00	0.00
% of temporary employees	0.10	0.00	0.02	0.06	0.00	0.01	0.09	0.00	0.01	0.21	0.00	0.01
HCI-CPI	0.07	0.00	0.01	0.06	0.00	0.01	0.18	0.00	0.02	0.41	0.00	0.02
Freedom to trade	0.16	0.01	0.05	0.06	0.00	0.01	0.20	0.00	0.04	0.26	0.00	0.01
Labour force with secondary education	0.31	0.04	0.17	0.05	0.00	0.01	0.09	0.00	0.01	0.22	0.00	0.00
Government consumption (% of GDP)	0.09	0.01	0.03	0.05	0.00	0.01	0.09	0.00	0.01	0.22	0.00	0.01
Change in GVC position	0.09	0.00	0.02	0.05	0.00	0.01	0.60	0.01	0.13	0.67	0.02	0.08
Age dependency ratio	0.08	0.00	0.02	0.05	0.00	0.01	0.09	0.00	0.01	0.22	0.00	0.01
Index of human capital	0.08	0.00	0.02	0.05	0.00	0.01	0.09	0.00	0.01	0.22	0.00	0.01
RCA in medium-high-tech industries	0.09	0.00	0.02	0.05	0.00	0.01	0.08	0.00	0.01	0.21	0.00	0.00
Potential crowding-out from China	0.12	0.01	0.04	0.05	0.00	0.01	0.09	0.00	0.02	0.24	0.00	0.01
Energy imports (% of energy use)	0.08	0.01	0.02	0.05	0.00	0.01	0.09	0.00	0.01	0.21	0.00	0.01
Equity (% of total liabilities)	0.09	0.01	0.03	0.05	0.00	0.01	0.09	0.00	0.01	0.21	0.00	0.01
Loans growth	0.07	0.00	0.02	0.05	0.00	0.01	0.12	0.00	0.02	0.24	0.00	0.01
Rents from natural resources	0.07	0.00	0.02	0.05	0.00	0.01	0.12	0.00	0.02	0.26	0.00	0.00
Population growth	0.08	0.00	0.02	0.05	0.00	0.01	0.25	0.01	0.07	0.37	0.02	0.09
Rule of law	0.10	0.01	0.03	0.04	0.00	0.01	0.08	0.00	0.01	0.21	0.00	0.01
Public debt (% of GDP)	0.09	0.00	0.02	0.04	0.00	0.01	0.11	0.00	0.01	0.25	0.00	0.00
% of part-time employment	0.09	0.00	0.02	0.04	0.00	0.01	0.08	0.00	0.01	0.20	0.00	0.01
Government effectiveness	0.10	0.00	0.03	0.04	0.00	0.01	0.08	0.00	0.01	0.21	0.00	0.01
Control of corruption	0.10	0.01	0.03	0.04	0.00	0.01	0.09	0.00	0.01	0.26	0.00	0.01
Regulatory quality	0.13	0.01	0.04	0.04	0.00	0.01	0.08	0.00	0.01	0.21	0.00	0.00
Debt (% of total liabilities)	0.07	0.00	0.01	0.04	0.00	0.01	0.08	0.00	0.01	0.21	0.00	0.00
Time-fixed effects												
2003	–	–	–	–	–	–	0.09	0.00	0.01	–	–	–
2004	–	–	–	–	–	–	0.32	0.02	0.12	–	–	–
2005	–	–	–	–	–	–	0.10	0.00	0.01	–	–	–
2006	–	–	–	–	–	–	0.96	0.78	0.93	–	–	–
2007	–	–	–	–	–	–	0.46	0.06	0.25	–	–	–
2008	–	–	–	–	–	–	0.15	0.03	0.04	–	–	–
2009	–	–	–	–	–	–	0.32	0.05	0.09	–	–	–
2010	–	–	–	–	–	–	0.94	0.70	0.92	–	–	–
2011	–	–	–	–	–	–	0.14	0.04	0.04	–	–	–

Note: The Table shows posterior inclusion probabilities for different g-priors. EBL refers to an empirical local Bayes approach; UIP denotes the unit information prior and BRIC refers to the prior setting proposed by Fernández et al. (2001a).

Table 9

Estimation results for the old EU Member States when including HCI-ULC

Specification	Pooled OLS			Country-fixed effects (within a group)			Country- and time- fixed effects			Country-fixed effects and optional time dummies		
	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.
Potential crowding-out from China	0.24	-0.11	-0.84	0.85	-0.41	-2.69	0.12	-0.17	-0.72	0.15	0.00	-0.01
New overlap with China	0.23	-0.11	-0.81	0.68	-0.31	-2.50	0.13	0.24	0.96	0.33	0.13	1.61
Debt (% of total liabilities)	0.21	-0.08	-0.83	0.50	-0.17	-2.06	0.16	-0.11	-1.52	0.19	-0.06	-0.85
Investment (% of GDP)	0.43	0.23	1.61	0.44	0.28	1.59	0.16	0.18	1.24	0.21	0.11	0.88
Loans growth	0.56	0.17	2.15	0.35	0.15	1.70	0.08	0.07	0.83	0.17	0.04	0.71
Change in GVC position	0.30	-0.12	-1.32	0.33	-0.16	-1.64	0.07	-0.01	-0.13	0.14	0.01	0.12
Regulatory quality	0.18	0.10	0.53	0.31	0.14	1.57	0.18	0.12	1.61	0.18	0.05	0.74
Labour productivity growth	0.36	0.16	1.44	0.30	0.17	1.49	0.09	0.08	0.76	0.15	0.02	0.26
Freedom to trade	0.43	0.22	1.75	0.24	0.18	1.27	0.97	0.50	4.21	0.30	0.12	1.44
TFP growth	0.33	0.16	1.06	0.24	0.20	0.96	0.14	0.20	1.06	0.16	0.05	0.48
Legal system and property rights	0.19	0.12	0.68	0.23	0.12	1.36	0.16	0.12	1.51	0.19	0.05	0.87
Size of government	0.21	-0.10	-0.91	0.23	-0.11	-1.30	0.07	-0.03	-0.41	0.14	0.00	-0.04
Public debt (% of GDP)	0.21	0.15	0.76	0.21	0.19	0.85	0.09	0.11	0.62	0.17	0.07	0.61
Existent overlap with China	0.52	-0.20	-1.86	0.20	-0.20	-0.84	0.08	-0.11	-0.53	0.15	0.00	-0.03
Labour force with tertiary education	0.22	-0.09	-0.87	0.20	-0.15	-0.96	0.08	-0.09	-0.77	0.14	-0.01	-0.19
GVC position	0.18	-0.06	-0.49	0.19	-0.11	-0.85	0.07	-0.04	-0.39	0.15	-0.02	-0.26
Loans from foreign banks growth	0.19	-0.07	-0.71	0.19	-0.11	-1.07	0.16	-0.14	-1.43	0.18	-0.05	-0.78
Control of corruption	0.17	0.05	0.20	0.19	0.10	1.01	0.07	0.05	0.62	0.15	0.03	0.41
Energy imports (% of energy use)	0.17	0.06	0.44	0.18	0.08	1.07	0.06	0.00	0.03	0.14	-0.01	-0.10
Growth surprise	0.31	0.12	0.71	0.18	0.00	0.01	0.09	-0.07	-0.28	0.15	-0.02	-0.24
HCI-ULC	0.16	0.01	0.08	0.18	-0.09	-0.87	0.06	0.01	0.06	0.14	0.00	0.09
Loans (% of total liabilities)	0.21	0.09	0.57	0.17	0.14	0.68	0.07	0.04	0.28	0.15	0.01	0.14
Labour force with secondary education	0.16	0.02	0.13	0.17	0.08	0.92	0.10	0.08	1.08	0.16	0.03	0.47
Age dependency ratio	0.17	0.01	0.08	0.16	-0.09	-0.78	0.11	-0.10	-1.14	0.17	-0.05	-0.63
Government consumption (% of GDP)	0.16	-0.02	-0.17	0.16	0.07	0.47	0.10	0.11	0.99	0.19	0.06	0.87
Real FDI liabilities growth	0.18	-0.06	-0.64	0.16	-0.08	-0.77	0.06	-0.01	-0.13	0.14	0.01	0.14
Equity (% of total liabilities)	0.21	-0.07	-0.54	0.16	0.09	0.37	0.07	0.06	0.42	0.15	0.04	0.40
RCA in medium-high-tech industries	0.18	-0.06	-0.38	0.16	0.06	0.77	0.06	0.00	0.04	0.15	0.02	0.35
Investment growth	0.19	0.05	0.34	0.15	-0.05	-0.27	0.09	0.08	0.67	0.16	0.04	0.46
Share of construction in investment	0.17	-0.05	-0.38	0.15	0.04	0.30	0.12	0.09	1.09	0.18	0.06	0.72
Tax burden	0.16	-0.04	-0.23	0.15	0.05	0.54	0.07	0.04	0.52	0.15	0.03	0.44
Relative export prices adjusted for quality	0.31	-0.11	-1.41	0.15	-0.06	-0.72	0.06	-0.01	-0.18	0.14	0.00	-0.03
Index of human capital	0.17	0.05	0.42	0.15	-0.04	-0.21	0.07	-0.02	-0.13	0.15	0.00	0.00
Population growth	0.25	-0.13	-1.07	0.14	-0.06	-0.58	0.07	-0.03	-0.31	0.15	0.01	0.09
Rents from natural resources	0.16	0.00	0.00	0.14	0.06	0.69	0.09	-0.07	-1.02	0.16	-0.04	-0.60
% of part-time employment	0.17	-0.08	-0.39	0.13	-0.04	-0.33	0.07	0.03	0.33	0.15	0.01	0.13
Government effectiveness	0.18	-0.12	-0.60	0.13	-0.02	-0.21	0.07	0.04	0.48	0.15	0.02	0.37
Labour force participation rate	0.17	0.10	0.47	0.13	0.00	-0.04	0.06	0.01	0.09	0.15	-0.01	-0.13
Rule of law	0.16	0.03	0.11	0.13	-0.02	-0.20	0.06	0.00	-0.01	0.15	-0.01	-0.17
Patent applications	0.16	-0.03	-0.17	0.13	0.00	0.01	0.06	-0.02	-0.31	0.14	0.01	0.17
% of temporary employees	0.18	0.05	0.49	0.12	0.01	0.16	0.07	-0.03	-0.40	0.15	-0.01	-0.18
RCA in high-tech industries	0.19	-0.06	-0.34	0.12	0.03	0.33	0.08	0.06	0.85	0.15	0.02	0.41
Time-fixed effects												
2003	-	-	-	-	-	-	0.88	-0.24	-3.23	-	-	-
2004	-	-	-	-	-	-	1.00	-0.41	-4.34	-	-	-
2005	-	-	-	-	-	-	0.11	-0.15	-0.88	-	-	-
2006	-	-	-	-	-	-	0.07	0.02	0.15	-	-	-
2007	-	-	-	-	-	-	0.10	-0.10	-0.81	-	-	-
2008	-	-	-	-	-	-	0.88	0.26	2.93	-	-	-
2009	-	-	-	-	-	-	0.85	-0.35	-3.50	-	-	-
2010	-	-	-	-	-	-	0.23	0.16	1.50	-	-	-
2011	-	-	-	-	-	-	0.16	-0.08	-0.58	-	-	-

Note: The Table shows posterior inclusion probabilities for different g-priors. EBL refers to an empirical local Bayes approach; UIP denotes the unit information prior and BRIC refers to the prior setting proposed by Fernández et al. (2001a).

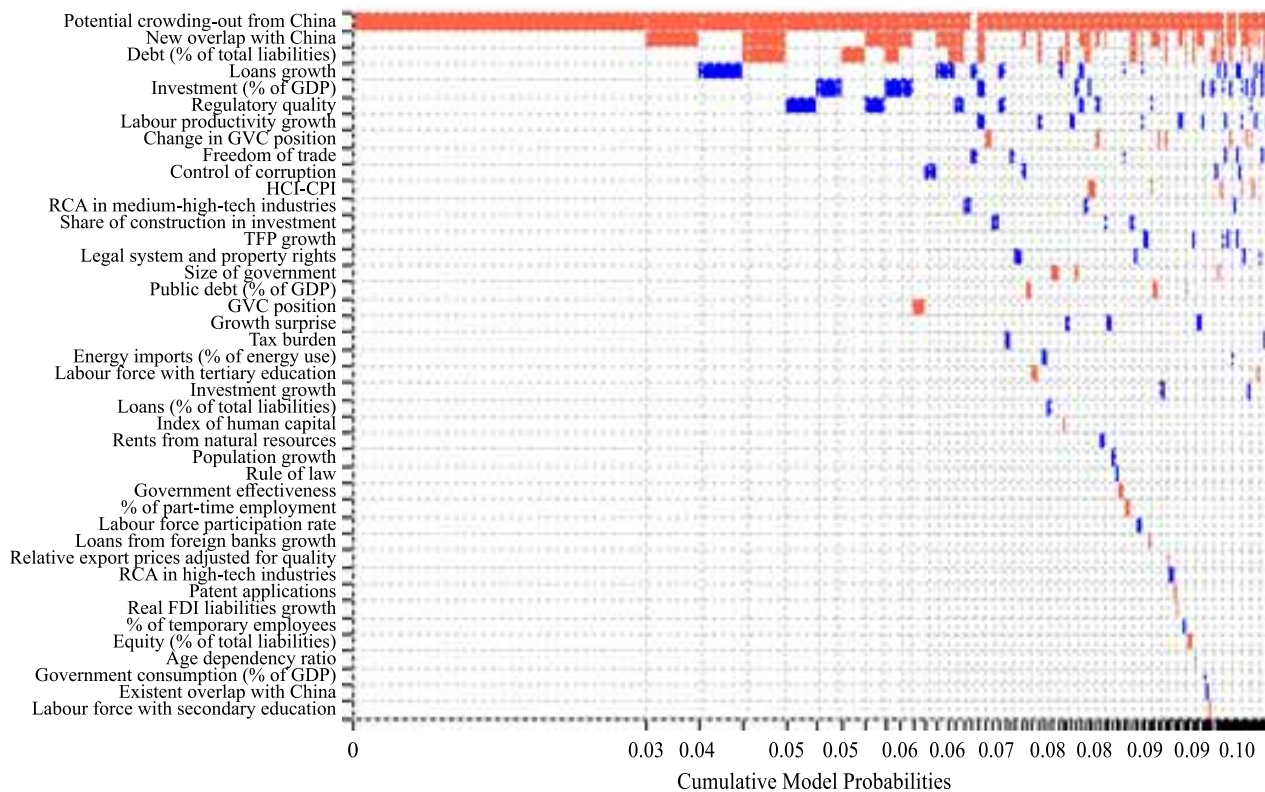
Table 10

Estimation results for the new EU Member States when including HCI-ULC

Specification	Pooled OLS			Country-fixed effects (within a group)			Country- and time- fixed effects			Country-fixed effects and optional time dummies		
	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.	PIP	Mean	Mean/ St. dev.
Labour productivity growth	0.80	0.34	3.25	0.70	0.31	3.19	0.40	0.19	2.09	0.36	0.12	1.33
Existent overlap with China	0.37	-0.25	-2.06	0.68	-0.35	-2.95	0.96	-0.56	-3.88	0.51	-0.21	-1.72
Real FDI liabilities growth	0.52	0.21	2.41	0.31	0.22	2.19	0.18	0.15	1.38	0.29	0.08	1.06
TFP growth	0.27	0.29	1.77	0.29	0.30	2.11	0.23	0.20	1.34	0.24	0.05	0.37
RCA in high-tech industries	0.75	-0.31	-2.57	0.28	-0.22	-2.14	0.24	-0.15	-1.60	0.28	-0.09	-0.88
Labour force participation rate	0.17	-0.16	-1.43	0.12	-0.14	-1.53	0.16	-0.10	-1.32	0.30	-0.10	-1.06
New overlap with China	0.13	0.16	0.98	0.12	0.19	1.30	0.13	0.01	0.04	0.23	-0.02	-0.13
Relative export prices adjusted for quality	0.18	0.13	1.59	0.12	0.13	1.55	0.09	0.05	0.58	0.22	0.04	0.47
Share of construction in investment	0.07	0.04	0.27	0.11	0.17	1.37	0.09	0.06	0.51	0.25	0.08	0.81
Loans from foreign banks growth	0.12	-0.12	-1.14	0.10	-0.15	-1.28	0.34	-0.22	-1.97	0.43	-0.14	-1.58
Tax burden	0.08	-0.01	-0.06	0.09	0.11	1.28	0.50	0.19	2.36	0.48	0.17	1.72
Labour force with tertiary education	0.09	-0.04	-0.24	0.09	-0.12	-0.62	0.11	0.15	0.70	0.24	0.07	0.63
Size of government	0.10	-0.10	-0.84	0.08	-0.11	-1.12	0.08	0.00	0.03	0.21	0.03	0.35
Patent applications	0.20	-0.16	-1.54	0.07	-0.10	-0.95	0.08	0.00	0.00	0.20	0.01	0.13
GVC position	0.07	-0.01	-0.06	0.07	0.09	1.02	0.09	0.01	0.14	0.22	-0.01	-0.12
Growth surprise	0.08	-0.05	-0.24	0.07	0.04	0.20	0.11	0.06	0.34	0.21	0.00	-0.03
Legal system and property rights	0.09	0.10	0.67	0.07	0.09	0.94	0.08	-0.02	-0.26	0.23	-0.05	-0.61
Investment growth	0.07	0.03	0.21	0.06	0.08	0.60	0.14	0.12	0.98	0.22	0.05	0.42
Loans (% of total liabilities)	0.20	-0.19	-1.39	0.06	-0.10	-0.69	0.08	-0.05	-0.39	0.21	-0.03	-0.32
Investment (% of GDP)	0.08	-0.07	-0.60	0.06	-0.08	-0.73	0.11	-0.10	-0.82	0.27	-0.10	-0.88
% of temporary employees	0.10	-0.09	-0.92	0.06	-0.07	-0.72	0.09	-0.04	-0.43	0.21	0.01	0.13
Freedom to trade	0.16	0.15	1.37	0.06	0.06	0.59	0.18	-0.12	-1.27	0.25	-0.08	-0.63
Labour force with secondary education	0.31	0.26	1.85	0.06	0.07	0.59	0.09	0.05	0.40	0.21	0.04	0.29
Change in GVC position	0.09	0.08	0.99	0.06	0.06	0.71	0.58	0.22	2.51	0.63	0.22	2.24
HCI-ULCT	0.08	-0.06	-0.78	0.06	-0.07	-0.76	0.14	-0.10	-1.14	0.34	-0.11	-1.25
Government consumption (% of GDP)	0.09	0.08	0.74	0.05	0.07	0.67	0.09	0.02	0.23	0.23	0.06	0.54
Age dependency ratio	0.08	-0.02	-0.17	0.05	-0.06	-0.48	0.08	0.04	0.35	0.22	0.05	0.45
Index of human capital	0.08	0.02	0.11	0.05	0.03	0.30	0.08	0.04	0.35	0.21	0.03	0.30
RCA in medium-high-tech industries	0.09	-0.07	-0.67	0.05	-0.04	-0.52	0.08	-0.01	-0.09	0.20	0.00	0.02
Potential crowding-out from China	0.12	-0.14	-1.00	0.05	-0.04	-0.37	0.09	-0.01	-0.07	0.23	0.03	0.27
Energy imports (% of energy use)	0.08	-0.02	-0.18	0.05	0.03	0.28	0.08	0.03	0.33	0.20	0.00	0.01
Equity (% of total liabilities)	0.09	-0.02	-0.09	0.05	-0.03	-0.31	0.08	-0.04	-0.40	0.20	0.00	-0.04
Loans growth	0.07	-0.05	-0.47	0.05	-0.03	-0.34	0.13	0.10	0.97	0.25	0.07	0.71
Rents from natural resources	0.07	0.05	0.39	0.05	0.03	0.34	0.11	0.08	0.93	0.25	0.08	0.72
Population growth	0.08	-0.07	-0.77	0.05	-0.04	-0.46	0.24	-0.13	-1.70	0.36	-0.11	-1.32
Rule of law	0.10	-0.11	-0.53	0.04	0.00	-0.01	0.08	0.04	0.38	0.21	0.03	0.27
Public debt (% of GDP)	0.09	-0.01	-0.05	0.04	0.00	0.02	0.10	-0.08	-0.74	0.25	-0.08	-0.72
Government effectiveness	0.10	0.00	0.01	0.04	0.03	0.34	0.08	0.02	0.30	0.21	0.02	0.25
Control of corruption	0.10	-0.09	-0.55	0.04	-0.01	-0.17	0.09	0.05	0.59	0.25	0.08	0.81
Debt (% of total liabilities)	0.07	0.01	0.11	0.04	0.00	0.04	0.08	0.02	0.32	0.20	0.02	0.29
Regulatory quality	0.13	0.16	0.99	0.04	0.01	0.15	0.08	0.00	0.02	0.21	0.00	0.05
% of part-time employment	0.09	-0.07	-0.66	0.04	0.01	0.07	0.07	-0.01	-0.13	0.20	-0.01	-0.09
Time-fixed effects												
2003	-	-	-	-	-	-	0.08	-0.02	-0.26	-	-	-
2004	-	-	-	-	-	-	0.32	-0.16	-1.78	-	-	-
2005	-	-	-	-	-	-	0.09	-0.03	-0.36	-	-	-
2006	-	-	-	-	-	-	0.96	0.35	3.42	-	-	-
2007	-	-	-	-	-	-	0.46	0.19	2.07	-	-	-
2008	-	-	-	-	-	-	0.14	0.04	0.22	-	-	-
2009	-	-	-	-	-	-	0.28	-0.22	-1.57	-	-	-
2010	-	-	-	-	-	-	0.95	0.32	3.45	-	-	-
2011	-	-	-	-	-	-	0.13	-0.08	-0.37	-	-	-

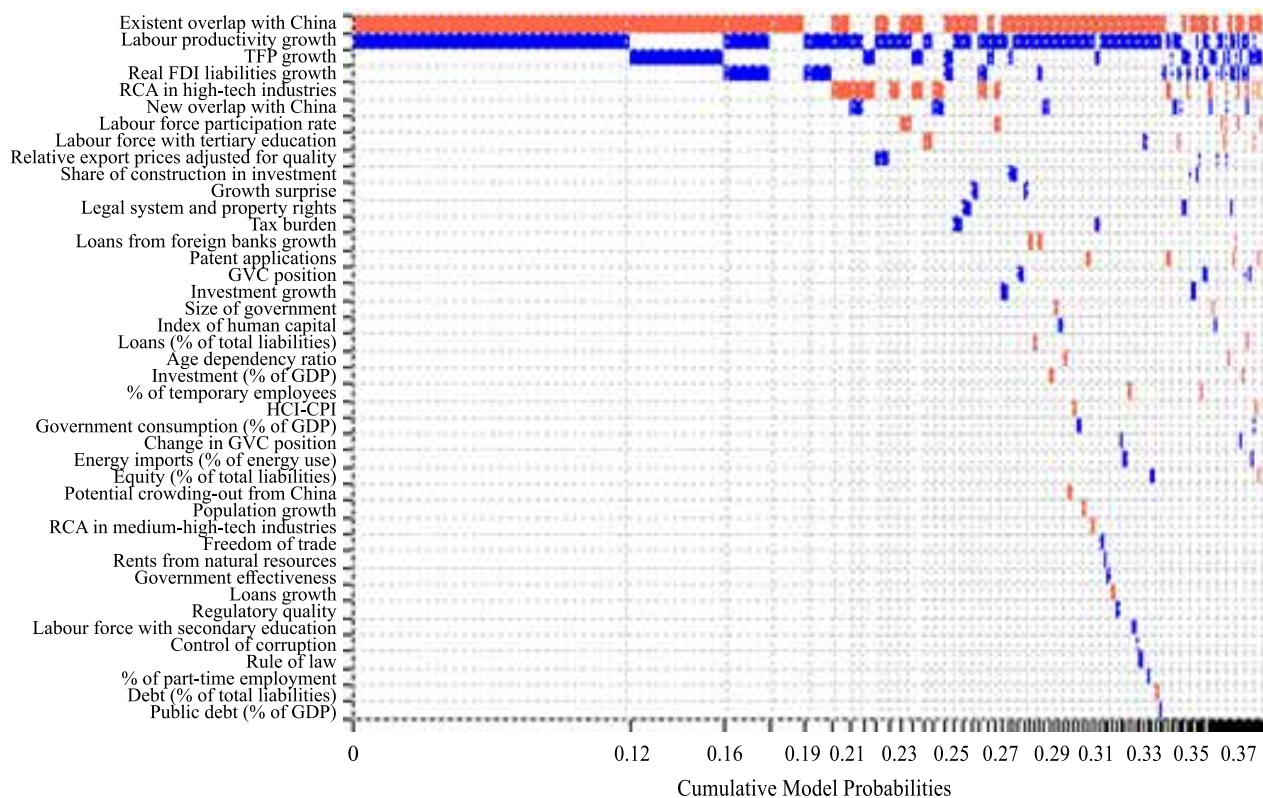
Note: The Table shows posterior inclusion probabilities for different g-priors. EBL refers to an empirical local Bayes approach; UIP denotes the unit information prior and BRIC refers to the prior setting proposed by Fernández et al. (2001a).

Figure 1
First 100 models ordered by their PMP – the old EU Member States
 (model inclusion based on best 100 models)



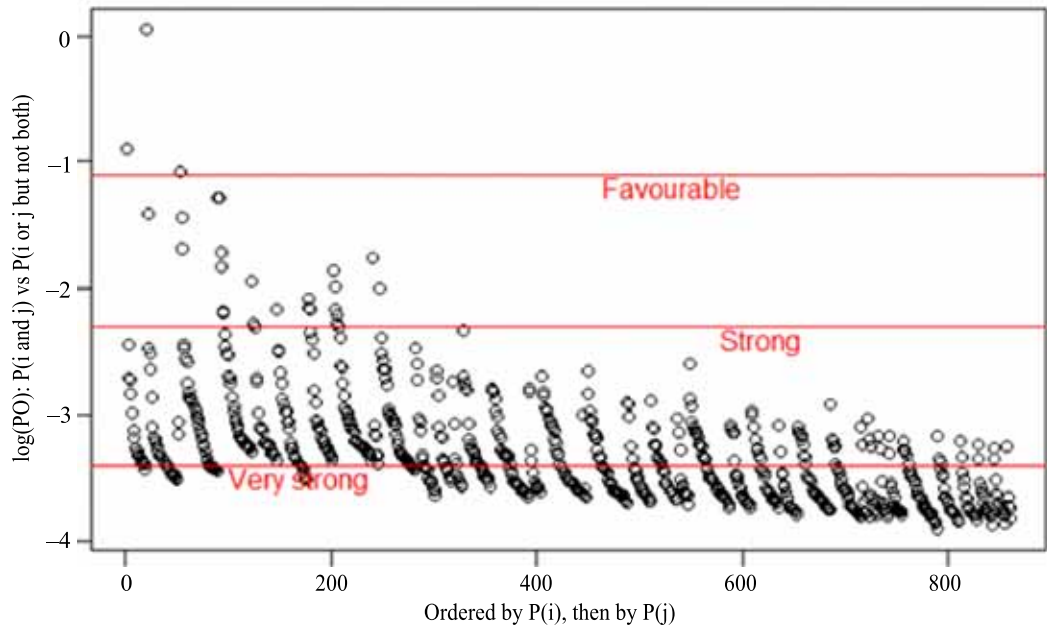
Note: Each column in the Figure refers to a particular model. The red or blue colour indicates that this variable has, respectively, a negative or positive posterior mean coefficient in a given model. The white colour indicates that this variable is not included in a model.

Figure 2
First 100 models ordered by their PMP – the new EU Member States
 (model inclusion based on best 100 models)



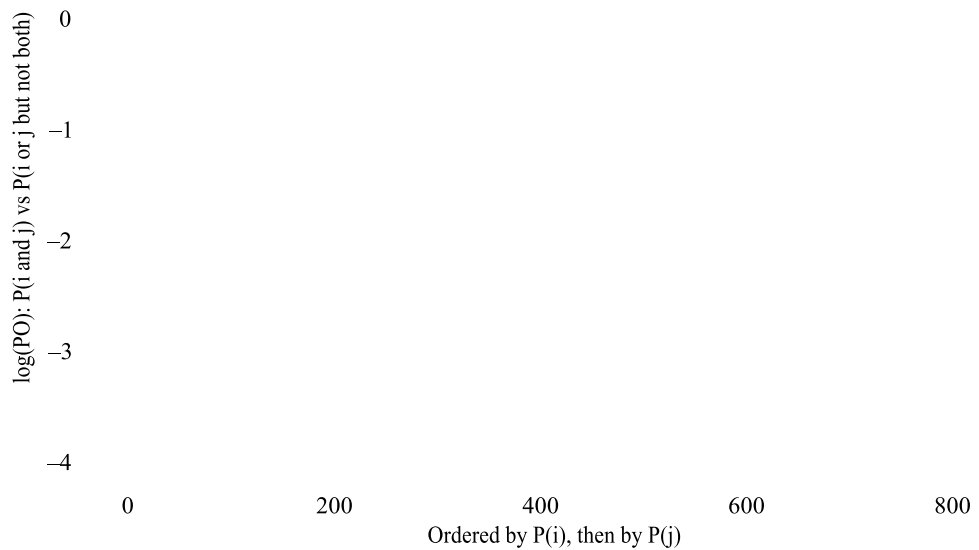
Note: Each column in the Figure refers to a particular model. The red or blue colour indicates that this variable has, respectively, a negative or positive posterior mean coefficient in a given model. The white colour indicates that this variable is not included in a model.

Figure 3
Jointness analysis – the old EU Member States
 (jointness: log of posterior odds)



Note: The Figure shows the logarithm of the posterior odds ratio for all variable pairs. The variable pairs are ordered by their PIPs. The horizontal red lines indicate cut-off values for different degrees of bivariate disjointness.

Figure 4
Jointness analysis – the new EU Member States
 (jointness: log of posterior odds)



Note: The Figure shows the logarithm of the posterior odds ratio for all variable pairs. The variable pairs are ordered by their PIPs. The horizontal red lines indicate cut-off values for different degrees of bivariate disjointness.

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