Explaining the performance of firms and countries: what role does the business environment play?

Simon Commander

Jan Svejnar

Katrin Tinn

Geneva 2 April, 2008

Business environment and performance

- Widely believed that institutional features of a country affects the performance of firms

- As barriers to doing business vary widely across countries and regions, also argued that business environment affects aggregate performance

- Simply put: countries and firms facing 'better' business environments can also be expected to perform better

- Significant theoretical and empirical literature supporting these assertions

- In this paper we examine the robustness of these assertions using two sources of data;

  - 2002 and 2005 rounds of the Business Environment and Enterprise Performance Survey (BEEPS); n=6/9000 firms in 26 transition countries

  - World Bank's annual Doing Business survey that covers 175 countries since 2003

Business environment and performance: implementation

- Using BEEPS dataset we use an augmented Cobb Douglas revenue function to look at the efficiency with which firms generate sales revenue from input

$$\ln y_{it} = \beta_0 + \sum_k \beta_k \ln x_{ikt} + \rho Z_{it} + \delta I_{it} + \theta C + \varsigma T_t + v_i + \varepsilon_{it}$$

  - where y is revenue of the firm; X's represent capital and labour inputs, Z is vector of business environment and structural variables; I's, C's and T's are dummies for industry, country and year; V is unobserved time-varying firm specific effect; and e is an error term

- Estimation allows efficiency to vary across institutional and structural variables, industries, countries and time

- To deal with endogeneity, we use instrumental variables

  - We estimate first stage regressions with as few IVs as possible making sure that they have explanatory power and pass over-identification tests

  - For business environment, an average value of each constraint is used

  - Standard errors are clustered by year, country, industry and firm size

Business environment and performance: firm level results

- We estimate a base regression relating performance to labour, capital; export share, competition and ownership variables + year, country and sector fixed effects– that yields plausible results

- We then add to base regression, the constraints variables; individually, as an average of all constraints and all entered together

  - We implement with and without country, year and sector fixed effects

- Without fixed effects we find;

  - Entered individually almost all enter negatively and most are significant – but clear omitted variables problem

  - Average value – also negative and significant

  - All entered simultaneously; most lose significance and/or change sign

- With fixed effects we find;

  - Entered individually most constraints terms are insignificant

  - Average value – insignificant

  - All entered simultaneously - insignificant

  - Country + country cum year fixed effects are knocking out significance of individual constraints

Business environment and performance: conclusions from firm level analysis

- Extensions using interactions of constraints also yield no statistically significant results

- In short, we find that country differences in business environment – but also in other aspects – matter for firm performance

    - Note that country effects capture many features of heterogeneity

- Within-country cross-firm differences do not appear to matter

- Merging BEEPs with other measures of the business environment (Doing Business), we also find little evidence of a negative relationship between the constraining environment and performance

Business environment and performance: country level analysis

- Doing Business covers 175 countries; has been implemented up to 5 times since 2003

- Uses template questionnaire administered to 'experts' and collects information on ten sets of indicators plus giving an aggregate ranking

- Causality assumed to be from institutions to performance and raises obvious issues of endogeneity; we start by estimating;

$$Growth = \ln(GDP_{2005} / GDP_{2003}) = \alpha + \beta \ln(GDP_{pc,2003}) + \gamma DB_{2003} + \delta X + \varepsilon$$

Business environment and performance: country level results

- No statistically significant association between growth and DB indicators can be found

    - But: this may be due to small number of observations on time; lags and limited number of variables for 2003

    - Issue of reverse causality cannot be addressed – lack of instruments

- Second stage: relate intermediate outcomes to DB indicators (plus controls)

    - Results show few statistically significant associations – for example, better legal rights are positively associated with private credit, capital inflows and FDI

    - In general, little that is robust

Why does the business environment explain so little?

- Possible explanations include:

  - *Mismeasurement*

    - For example; firm and country level measures of constraints are not actually consistent!

    - Firm level variation is large; more within-than between-industry variation – suggesting large subjective element and possible bias

    - Sample selection issues – if many constraints only most entrepreneurial will be at work

    - Country level measures based on average representative firm

  - *Indicators may be incomplete and/or too specific*

    - For example, credit and enforcing contracts in DB; absence of indicators on R&D and technology adoption

Why does the business environment explain so little?

- *Underlying relationships may be more complex and non-linear*

    - For example, constraints to productive activity may differ across income groups – thresholds of income per capita or other indicators – such as labour force or equity market size – may affect whether constraints matter or not

- *Identification strategy is inappropriate*

    - But in this paper we have been careful to address endogeneity/causality issues in the firm analysis through IV