**Business environment as the determinant of economic growth**

**Abstract:** Does the business determine economic growth? What factors do provide the stable business development? Recent studies explore business environment as a key factor of prosperous business functioning. The subjective estimates of the business obstacles based on the firm-level World Bank Enterprise Survey (WBES) are aggregated on the country level. Using the country average values of 13 business obstacles 128 countries are classified into six clusters. Cross tables analysis and correlation analysis find that there is a correlation between the prevalence of the business obstacles and national income growth, export growth, high-technology export, expenditure on R&D. Considering regional differences the results show the priority of the business obstacles that could be used in policymaking.

**Keywords:** business environment, business obstacles, business constraints, business development, business functioning, business growth, firm growth, economic growth, World Bank Enterprise Survey, WBES.

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**1 Introduction**

Business functioning vastly defines economic growth at national, regional and international level. At the same time, business development substantially depends on business environment. Appropriate business environment increases firms’ productivity and promotes innovation activity whereas uncertain business environment forms business constraints and, as a result, declines business and economic growth capabilities. Overall, business environment combines a huge number of macroeconomic factors: macroeconomic and policy certainty, security, legal and fiscal systems, labor market, financial market, competition, infrastructure. Many of these factors are correlated with firm growth.

Considering this evidence, policymakers can contribute to business and economic growth by reforming legal and fiscal system, avoiding corruption and crime, providing fair competition, developing financial and physical infrastructure. Obviously, complex improvement of business environment is preferably for business but addressing all business constraints at once would be challenging for any government [Ayyagari, Demirgüç-Kunt and Malsimovic, (2008), p.484]. Thus, understanding the priority of business obstacles, their interaction and impact on firm growth is crucial for policymaking. Besides, regional and country differences of business environment should be taken into account.

The paper aims to classify countries by the prevalence of business obstacles based on business owners and top managers’ opinions. It also analyzes regional differences of business environment. Finally, it finds a significant correlation between subjective estimates of business constraints and the indicators of economic growth.

The study is based on the firm-level World Bank Enterprise Survey (WBES). The subjective estimates of business obstacles are aggregated by country. An obstacle is defined as a constraint if a business owner/top manager reports this as a major or very severe obstacle.

The paper is organized as follows. The next section reviews previous studies concerning business environment and its impact on business and economic growth. Methodology and data are described in the third section. Regional differences of business environment are analyzed in the fourth section. The fifth section contains countries classification by business constraints. The influence of business environment on economic growth is examined in the sixth section. The last section summarizes the main findings.

**2 Backgrounds**

Business growth is considered to be the essential part of economic growth and its causes have become a much researched area in economics. Business environment influenced on firm growth turns to a new focus of this field. Previous studies argue that firms report many business environment features as constraints to their growth. They cover corruption, crime (Gaviria, 2002), legal system (Beck, Demirgüç-Kunt and Maksimovic, 2005; La Porta et al., 1998; Durnev and Han Kim, 2005), governance (Kaufmann, et al., 1999), business licensing and regulations (Djankov et al., 2002; Klapper, Laeven and Rajan, 2004), employment regulations (Autor, Kerr and Kugler, 2007), finance (Demirguc-Kunt and Maksimovic, 1998; Beck, Demirguc-Kunt and Maksimovic, 2005; Galindo and Micco, 2007), informality, competition (Schwab, 2014), infrastructure (Aterido, Hallward-Driemeir, Pages, 2009), macroeconomic factors (Levine and Renelt,1992).

These studies use different methodologies that produce biased estimates because of omitted variables, endogeneity regressors [Commander and Svejnar, (2007), p. 2]. Some authors compare the objective measures of country business environment with its macroeconomic indicators. In particular, Botero et al. (2004) examine the impact of labor regulations on country outcomes.

Other studies explore the business environment at the country-industry level. This approach allows defining business barriers in particular industry. For example, financially dependent industries grow faster in financially developed markets (Raja and Zingales, 1998). Moreover, some authors examine the variation of the business environment not only across countries and industries but also across sub-national areas, firm size and ownership (Besley and Burgess, 2004).

Finally, some studies focus on small groups of countries or a particular country, their business environment and economic outcomes: Dollar, Hallward-Driemer and Megistae (2005) for India, Pakistan, Bangladesh and China, Fisman and Svensson (2007) for Uganda, Bigsten and Soderbom (2006) for Africa. Pissarides (2003) examines the absolute and relative severity of constraints in Bulgaria and Russia. This approach may consider similar countries’ specific socio-economic features influencing on business environment.

The studies of business environment may include one or more its factors. Levine and Renelt (1991) argue that there is not a reliable, independent statistical relationship between a huge number of single macroeconomic indicators and growth because of other explanatory variables. Most studies consider a few explanatory variables to examine a relationship between growth and a particular variable. In particular, Barro (1990, 1991) do not take into account trade policy in the relationship between fiscal policy and growth. In contrast, Feder (1983) ignores fiscal indicators in the relationship between trade policy and growth. Using the World Bank Enterprise Survey (WBES) with the broad range of business constraints, Ayyagari, Demirguc-Kunt and Maksimovic (2006) focus on finance, corruption and property rights.

All mentioned above factors are highly correlated. The countries with more open political system have less burdensome entry regulation than do countries with less free governments (Djankov et al., 2002). A high level of corruption and weak institutions increase the size of the informal sector (Johnson, Kaufman and Zoido-Lobaton, 1998) and the crime rate (Gaviria, 2002). Entry regulations also become less effective in corrupt countries (Shleifer and Vishny, 1997; Djankov et al., 2002). Therefore, some factors may influence on firm activity through other factors. Particularly, weak legal system and the lack of competition contribute to undeveloped financial markets that lead to financial barriers for business (Claessens, 2006). Strong legal, information and physical infrastructure, international competitiveness determine low financial barriers for business (Beck, Demirgüç-Kunt and Peria, 2008). Protection of property rights is a key factor of the developed financial institutions and the efficient functioning of contracts (Ayygari, Demirguc-Kunt, Maksimovic, 2006). Overall, correlations between long-term business growth and single macroeconomic indicators are less robust that explain the complexity of macroeconomic factors (Levine and Renelt, 1992).

Business environment varies across countries and regions. The financial obstacle is the most common problem for business development in the world. Shleifer and Vishny (1997) reveal that financing and inflation are the top problems for small business, financing and taxes and regulations are more crucial for medium business, and policy instability and financing are the major constraints for large business. In general, developed countries have less business constraints than developing countries (Beck, Demirguc-Kunt and Maksimovic, 2005). Gelb et al. (2007) identifies the dependence of business obstacles estimations on countries’ income level. Shleifer and Vishny (1997) find that the majority of firms in OECD countries regardless their size experiences low level of obstacles. Corruption and crime are more common in Latin America (Gaviria, 2002), corruption and poor infrastructure are typical for Africa (Ayyagari, Demirguc-Kunt and Maksimovic, 2008).

Previous literature show that business environment have a significant impact both on firm and economic growth. Empirical studies by Mauro (1995), Kaufmann (1997a), Tanzi (1998) explore the negative impact of corruption on business development, economic growth, public expenditure, domestic and foreign investment.

Hall and Jones (1999) and Acemoglu, Johnson and Robinson (2001) suggest that government institutions quality matter for economic performance. Countries with higher regulation of entry have less performance in economic, social and political indicators (Djankov, et al. 2002). Heavier labor regulation is associated with a larger informal economy, lower labor force participation and higher unemployment (Botero, et al., 2004). Labor regulations are considered to be a determinant of economic performance in OECD countries (Blanchard and Wolfers, 2000).

A substantial part of authors determine financial development as a key factor of economic growth (Saint-Paul, 1992; King and Levine, 1993a, 1993b; Boyd and Smith, 1996). Particularly, King and Levine (1993a) investigate that it significantly contributes to growth over the next 10 to 30 years. Jayaratne and Strahan (1996) find that the banking sector liberalization in different states in the USA has the positive influence on a state’s growth. Levine and Zervos (1998) reveal that measures of market liquidity are strongly correlated to growth, capital accumulation, and productivity while stock market size is not robustly correlated. Bank lending to the private sector has a strong independent effect on growth.

**3 Methodology & Data**

The paper is based on the firm-level World Bank Enterprise Survey (WBES). A representative sample of an economy’s private sector typically contains 150, 360 and 1200-1800 firms for small, medium-sized and large economies correspondingly in manufacturing and services (construction, retail, restaurants, transport, storage, communications, IT) sectors. In a few countries, education and health-related businesses are also included in the survey. Only formal (registered) firms with 5 and more employees participate in the survey.

The sampling methodology for WBES is stratified random sampling where the strata are firm size, business sector, and geographic region within a country. Firm size is a composite measure of permanent and temporary workers. Firm size levels are 5-19 (small), 20-99 (medium), 100 and more employees (large-sized firms). In most economies, the majority of firms are small and medium-sized, WBES oversample large firms.

Business sector classification of WBES includes manufacturing, retail, and other services. In larger economies, specific manufacturing sub-sectors are used on the basis of employment, value-added, and total number of establishments as additional strata. Selected geographic regions present the largest centers of production and business within a country.

The respondents of WBES are mainly business owners and top managers, company accounts and human resources managers for the sales and labor sections of the survey. WBES cover a broad range of business environment topics including business-government relations, infrastructure, access to finance, innovation and technology and others.

13 questions based on the respondents’ opinions about business obstacles are selected for the current research. The questions are formed as “To what degree is [the name of the obstacle] an obstacle to the current operations of this establish?” There are 5 levels for the respondents’ choice: (0) No obstacle; (1) Minor obstacle; (2) Moderate obstacle; (3) Major obstacle; (4) Very severe obstacle. Country-level average percentage of firms identifying a “major” or “very severe” obstacle is calculated as a result. The selected business obstacles are (1) corruption, (2) functioning of the courts, (3) crime, theft and disorder, (4) access/cost of finance, (5) practices of competitors in the informal sector, (6) electricity, (7) transportation, (8) tax rates, (9) tax administration, (10) business licensing and permits, (11) customs and trade regulations, (12) labor regulations and (13) labor skill level. These obstacles characterize business environment at country level.

The described above business environment factors are analyzed using correlation and factor analysis. Based on the results of factor analysis, 128 analyzed countries are classified into clusters by the factors of business environment.

Further analysis is based on the indicators of economic growth constructed on OECD and the World Bank database. Considering the time period of the last WBES the average values of the indicators are calculated for the further research. The selected indicators and their description are in Table 1.

Table 1 is here

The correlation between the subjective estimates of business environment and the indicators of economic growth is measured by (1) cross tables’ analysis using chi-squared criteria and (2) correlation analysis. For cross tables’ analysis, the World Development Indicators provided by the World Bank are converted to categorical variables. The subjective estimates of business environment are also categorical variables based on the countries classification and its clusters. The relationship between OECD indicators of economic growth and the subjective estimates of business environment is measured by Pirson’s correlation coefficients.

**4 Regional Differences**

The WBES results show that the most common business obstacles in the world are corruption (33.7%), electricity (33.5%) and tax rates (30.5%). Business owners and top managers also report access to finance (28.7%) and competition in the informal sector (27.9%) as significant business constraints. At the same time, subjective estimates of the business obstacles demonstrate regional and country diversity. For example, the respondents consider corruption as a major or very severe business obstacle from 0.0% in Dominica and Eritrea to 83.7% in Niger, electricity – from 0.7% in Azerbaijan to 83.6% in Guinea.

High-income OECD countries, Eastern Europe & Central Asia, East Asia & Pacific have less business constraints than other regions. The proportion of business owners and top managers reported major business constraints is 2-3 times lower the world averages. Corruption is a major business obstacle for only 11.9% of manages in high-income OECD countries, access to finance – for 12.8% of respondents.

High-income non-OECD countries have similar values of the business obstacles as the described above regions except tax rates. 43.7% of top managers mentioned this as a major constraint. Electricity and labor skill level are business obstacles for almost one third of respondents.

South Asia shows higher values for the majority of the business obstacles than Europe, Asia and Pacific. The most common constraints are electricity (43.6%), corruption (35.7%) and access to finance (34.2%).

Latin America & Caribbean is the leader among regions in courts system (29.10%), access to finance (35.90%), labor regulations (17.90%) and labor skill level (35.90%). Corruption is also widely common (44.9%).

Middle East & North Africa has the highest values in corruption (50.20%) and electricity (45.80%). The following business obstacles are access to finance (38.5%) and tax rates (33.1%).

Finally, Sub-Saharan Africa has higher the world average values for all described business constraints. This region is the leader in the following obstacles: access to finance (41.6%), competition in the informal sector (40.8%), transport (28.6%), tax administration (28.7%), customs and trade regulations (25.4%). Electricity is almost the highest (44.8%), corruption (42.6%) and crime (28.0%) are significantly higher the world average.

Figure 1 presents three common world business obstacles across regions.

Figure 1 is here

**5 Countries Classification**

Correlation analysis of the business obstacles reveals the significant direct correlations between them. There is a strong correlation between corruption and functioning of the courts (0.729), tax rates and tax administration (0.781). The correlation is weaker between corruption and crime (0.676), infrastructure constraints – electricity and transportation (0.692), business licensing and permits and labor regulations (0.668). All correlation coefficients are significant and positive.

The results of previous correlation analysis indicate multicollinearity of the business obstacles. Factor analysis allows excluding this and grouping 13 business constraints in three factors with 74.5% of total dispersion. Corruption, functioning of courts, crime, business licensing and permits, labor regulations and labor skill level form the first factor. Access to finance, infrastructure (electricity and transportation), and trade regulations are the second factor. Lastly, the third factor consists of competition in the informal sector, tax rates and tax administration. Previous background assumes these correlations. Courts system and any regulations do not function effectively in corrupt countries. At the same time, ineffective courts system and corruption lead to crime growth. Excessive taxation promotes the informal sector of economy growth.

Ward’s clustering method allows classifying 128 countries into 6 clusters (clusters 1\_1, 1\_2, 2, 3\_1\_1, 3\_1\_2 and 3\_2 on Figure 2).

Figure 2 is here

The majority of countries in clusters 1\_1 and 1\_2 are East European and CIS countries which demonstrate the lowest values of the business obstacles. They do not exceed 0.72 of the world average in cluster 1\_1. This cluster consists of 36 countries including Azerbaijan, Czech Republic, Estonia, Kazakhstan, Moldova, Mongolia, Uzbekistan, China, Israel, Philippines, South Africa, Vietnam and others. The most common business obstacles are electricity (21.25%), corruption (20.24%), and competition in the informal sector (17.84%).

Cluster 1\_2 includes 28 countries: Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Hungary, Latvia, Lithuania, Poland, Russia, Serbia, Slovak Republic, Slovenia, Tajikistan, Ukraine, Jordan, Morocco, Sri Lanka, Turkey and others. The main difference from the countries of the previous cluster is almost two times higher tax rates and tax administration values. Tax rates (32.62%), access to finance (21.23%), competition in the informal sector (20.89%) are the most common business constraints.

Cluster 2 has the intermediate place between the described above and the rest clusters. 26 countries including Algeria, Central African Republic, Dominica, Ghana, Guinea, Nepal, Niger, Senegal form this cluster. These countries have the highest values in electricity (57.80%) and access to finance (49.68%) as business obstacles.

Cluster 3\_1\_1 consists of 18 countries (Afghanistan, Angola, Chad, Colombia, Costa Rica, Iraq, Mexico, Tanzania and others). These countries are the leaders in the following business constraints: corruption (56.99%), transportation (35.50%) and business licensing and permits (24.59%). This cluster also has one of the largest values in electricity (51.68%), labor skill level (37.15%), crime (36.96%) and trade regulation (26.67%).

Bolivia, Chile, Ecuador, El Salvador, Guatemala, Honduras, Kenya, Nicaragua, Paraguay, Peru, Suriname and Venezuela – 12 countries all – are cluster 3\_1\_2. In these countries the largest proportion of business owners and top managers report crime (39.33%) and functioning of courts (34.48%) as a major business obstacle. Corruption is also widely common (47.34%).

Finally, 8 countries (Antigua and Barbuda, Argentina, Brazil, Burkina Faso, Cameroon, Egypt, Jamaica and Romania) form cluster 3\_2. These countries have the highest values of the business obstacles. They are the leaders in tax rates (66.51%) and tax administration (50.36%), competition in the informal sector (48.75%), labor skill level (42.61%), labor regulation (29.51%) and trade regulation (27.76%). Corruption (54.01%), access to finance (45.60%) and crime (36.99%) are also considered to be significant constraints to business.

Table 2 presents the average values of the business obstacles for each cluster.

Table 2 is here

Countries with the lowest business constraints are concentrated in cluster 1\_1 whereas countries with the highest business obstacles form cluster 3\_2. The comparison of these clusters with the world average values of the business obstacles are in Figure 3.

Figure 3 is here

Figure 3 presents two main findings. Firstly, all business obstacles in cluster 1\_1 are lower the world average. In contrast, the business obstacles in cluster 3\_2 exceed the world average, in some cases more than twice. Secondly, the figure shows almost the same common business constraints both in appropriate and uncertain business environment – corruption, electricity, tax rates and tax administration, labor skill level.

**6 Business Environment And Economic Growth**

Further research is based on the cross tables’ analysis including the results of the countries classification and selected WDI provided by the World Bank. These quantitative WDI are converted in categorical variables (3 categories). OECD indicators are not included in cross tables’ analysis due to a small number of observations.

Providing the appropriate number of observations in categories three countries clusters are used (cluster 1, 2 and 3 on Figure 2). The first cluster (cluster 1) consists of countries where easy to do business. On the contrary, the third cluster (cluster 3) has the highest business constraints. The second cluster (cluster 2) has the intermediate position between these the previous two clusters in most business obstacles except the highest constraints in access to finance and competition in the informal sector.

Chi-squared criteria show the significant correlation between business environment and economic growth indicators. In particular, annual adjusted net national income growth, annual export growth, the proportion of high-technology exports in manufactured exports are higher in countries where business owners and top managers estimate the business constraints lower. However, there is non-significant correlation between business environment and new business density (new registrations per 1 000 people aged 15-64), business environment the share of research and development expenditure in GDP.

Figure 4 shows the countries distribution by annual export growth in cluster gap. The proportion of countries with annual export growth more than 110% is twice higher in the first cluster with the lowest business constraints than in two others. On the contrary, more than 80% of countries in the third cluster have annual export growth less than 110%. Finally, the countries of the second cluster have the intermediate position both in annual export growth and business constraints.

Figure 4 is here

Further correlation analysis is based on OECD economic growth indicators (business expenditure on R&D as a percentage of GDP and gross domestic expenditure on R&D as a percentage of GDP) and 13 described above business obstacles in 20 OECD countries. The number of countries is limited by both OECD database and the WBES. All correlations between these OECD indicators and business constraints are negative. Particularly, there is a moderate correlation between business expenditure on R&D as a percentage of GDP and competition in the informal sector (-0.592), gross domestic expenditure on R&D as a percentage of GDP and corruption (-0.599).

**7 Conclusion**

This paper contributes to the studies of national business environment and its impact on country economic growth. Based on business owners and top managers’ subjective estimates it examines the correlation between the business constraints and the indicators of economic growth at macro level. The results show that countries with less business constraints have larger annual growth of national income and exports and have larger R&D expenditure as the proportion of GDP.

The research also finds out the regional differences of the business obstacles across countries. In general, corruption, electricity and tax rates are the most common business obstacles in the world. In addition, crime and labor skill level are also common in Latin America & Caribbean whereas access to finance is a significant business constraint in Middle East & North Africa and South Asia. Along with the mentioned above business obstacles competition in the informal sector is frequently common in Sub-Saharan Africa. Overall, high-income countries have less business obstacles in compare with other countries.

Considering countries differences of the business environment this research presents countries’ classification by the prevalence of the business constraints. Using Ward’s method of cluster analysis, 128 countries are classified into 6 clusters by 13 business obstacles. Taking into account the experience of foreign reforms in business support this classification allows defining countries with similar business constraints that could be used in policymaking. Considering financial and organizational costs the prevalence of business constraints indicates on the priority of the reforms for policy makers.

The research covers only the subjective estimates of the business obstacles. At the same time, business owners and top managers determine their business activity considering business constraints in a country. Thus, subjective estimates of business environment significantly influence on business development and, as a result, on economic growth.

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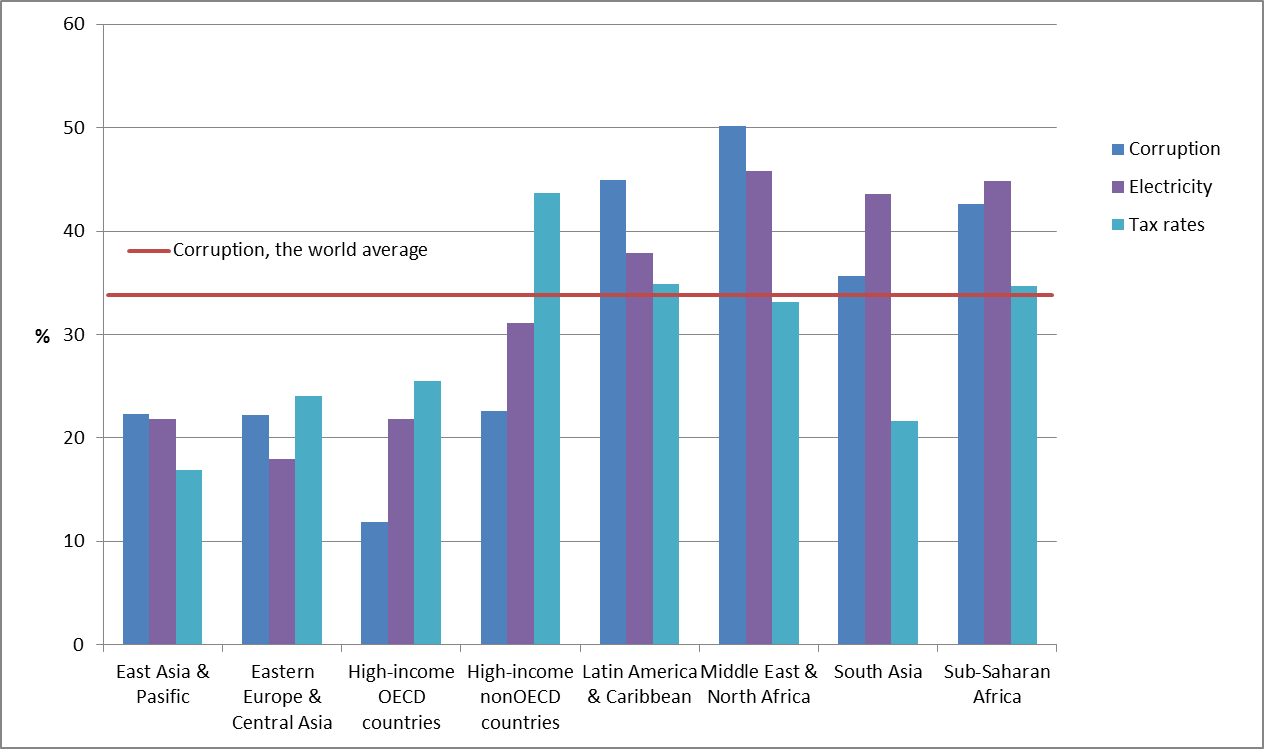
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**Table 1** The World Development Indicators

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| --- | --- | --- | --- |
| Indicator name | Description | Time period | Source |
| Adjusted net national income (annual percentage growth) | GNI minus consumption of fixed capital and natural resources depletion | 2010-2012 | The World Bank |
| Business expenditure on R&D (percentage of GDP) | Total intramural expenditure on R&D performed by the business enterprise sector on the national territory during a given period | 2010-2013 | OECD |
| Exports of goods and services (annual percentage growth) | The value of all goods and services provided to the rest of the world including the value of merchandise, freight, insurance, transport, royalties, license fees, and other services and excluding compensation of employees and investment income (formally called factor services) and transfer payments | 2010-2013 | The World Bank |
| Gross domestic expenditure on R&D (percentage of GDP) | Total intramural expenditure on R&D performed on the national territory during a given period | 2010-2014 | OECD |
| High-technology exports (percentage of manufactured exports) | Products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery | 2010-2012 | The World Bank |
| New business density (new registrations per 1 000 people aged 15-64) | The number of new limited liability corporations registered in the calendar year | 2010-2012 | The World Bank |
| Research and development expenditure (percentage of GDP) | Current and capital expenditures (both public and private) on basic and applied research, experimental development | 2010-2012 | The World Bank |

*Source:* The World Bank, OECD

**Figure 1** Three major business obstacles across regions



*Source:* the World Bank

**Figure 2** Countries classification

*Source:* author’s calculations

**Table 2** The average values of the business obstacles

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Cluster 1\_1** | **Cluster 1\_2** | **Cluster 2** | **Cluster 3\_1\_1** | **Cluster 3\_1\_2** | **Cluster 3\_2** |
| **Corruption** | 20,24 | 20,06 | 37,42 | 56,99 | 47,34 | 54,01 |
| **Courts system** | 6,68 | 7,90 | 13,12 | 27,98 | 34,48 | 24,06 |
| **Crime** | 13,11 | 8,57 | 27,65 | 36,96 | 39,33 | 36,99 |
| **Access to finance** | 17,00 | 21,23 | 49,68 | 40,93 | 21,03 | 45,60 |
| **Competition in the informal sector** | 17,84 | 20,89 | 38,83 | 38,20 | 30,98 | 48,75 |
| **Electricity** | 21,25 | 18,10 | 57,80 | 51,68 | 31,76 | 40,23 |
| **Transportation** | 11,38 | 10,98 | 27,21 | 35,50 | 24,37 | 24,38 |
| **Tax rates** | 16,45 | 32,62 | 36,37 | 40,56 | 20,78 | 66,51 |
| **Tax administration** | 10,40 | 17,71 | 23,00 | 32,67 | 16,23 | 50,36 |
| **Business licensing and permits** | 7,21 | 6,90 | 13,67 | 24,59 | 19,83 | 21,50 |
| **Trade regulation** | 10,41 | 10,05 | 22,85 | 26,67 | 19,98 | 27,76 |
| **Labor regulation** | 5,32 | 9,55 | 6,22 | 16,96 | 19,11 | 29,51 |
| **Labor skill level** | 17,42 | 18,49 | 18,99 | 37,15 | 35,48 | 42,61 |

*Source:* author’s calculations

**Figure 3** Business obstacles in clusters and in the world

*Notes:* X1 – corruption; X2 - functioning of the courts; X3 – crime, theft and disorder; X4 – access/cost of finance; X5 – competition in the informal sector; X6 – electricity; X7 – transportation; X8 – tax rates; X9 – tax administration; X10 – business licensing and permits; X11 – customs and trade regulations; X12 – labor regulations; X13 – labor skill level.

*Source:* author’s calculations

**Figure 4** Annual export growth in cluster gap

*Source:* author’s calculations