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Lao PDR

Investment Climate Assessment 2014

Policy uncertainty in the midst of a natural resources boom

Trade and Competitiveness Global Practice
East Asia and Pacific Region
December 2014



WORLD BANK GROUP

Currency Equivalents

Currency unit = Lao Kip
US\$ 1 = 8,000 Kip

Acronyms and Abbreviations

AEC	ASEAN Economic Community
ALGI	Association of Lao Garment Industries
ASEAN	Association of Southeast Asian Nations
ASYCUDA	Automated System for Customs Data
BTT	Business Turnover Tax
CIT	Corporate Income Tax
DTA	Double Taxation Agreement
ES	Enterprise Surveys
FDI	Foreign Direct Investment
FIL	Foreign Investment Law
GDP	Gross Domestic Product
GNI	Gross National Income
ICA	Investment Climate Assessment
IFC	International Finance Corporation
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification
LAD	Least Absolute Deviations
Lao PDR	Lao People's Democratic Republic
LECS	Lao Expenditure and Consumption Survey
LDR	Lao PDR Development Report
LNCCI	Lao National Chamber of Commerce and Industry
NA	National Assembly
OLS	Ordinary Least Squares
PPP	Purchasing Power Parity
REER	Real Effective Exchange Rate
STEP	Skills Towards Employment and Productivity
TE	Technical Efficiency
TFP	Total Factor Productivity
TVET	Technical and Vocational Education and Training
VAT	Value Added Tax
WBG	World Bank Group
WTO	World Trade Organization

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The findings and interpretations expressed here are those of the authors and do not necessarily reflect the views of the World Bank Group, its Executive Directors, or the countries they represent.

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Photo by Bart Verweij / World Bank, 2014

Executive Summary

1. The World Bank undertakes periodic Investment Climate Assessments in order to provide policymakers with a better understanding of how the private sector is performing and where the principal constraints to increased private sector investment are to be found. These assessments are informed by Enterprise Surveys that follow a standardized approach and are conducted with the objective of providing detailed information on firm-level performance and constraints. So far, Enterprise Surveys have been conducted in more than 135 different countries and capturing data from over 130,000 individual businesses.

2. This is the third Investment Climate Assessment carried out in Lao PDR, and builds on findings from the previous assessments carried out by the World Bank in 2007 and 2011, each of which was in turn informed by an Enterprise Survey. This 2014 Investment Climate Assessment (ICA) is based on an Enterprise Survey undertaken across Lao PDR for the World Bank in late 2012. The survey covered nearly 400 formal private firms across six provinces, including small, medium-sized and large firms. Half of the businesses surveyed were in manufacturing and half in services. The World Bank Enterprise Surveys are the only firm-level data collected in Lao PDR that use stratified random sampling, and thus allow for results from the sample to be considered statistically representative of the entire Lao private sector. It is also the only Enterprise Survey in the country that captures detailed firm performance data on sales and cost of sales, from which aggregate estimates of firm level profitability and productivity can be computed.

3. The economy of Lao PDR has been growing rapidly based principally on the development of natural resource based industries. The transformation of natural wealth in terms of the country's mineral and water resources has propelled high rates of investment and economic expansion for more than a decade. Lao PDR has become a middle income economy and the country has achieved success in reducing poverty and delivering improved public services. The natural resource development process has also created spillover effects, mostly notably via strong expansion in the services and construction domestic private sectors.

4. However, Lao PDR's rapid growth has masked the costs of a still largely unreformed business enabling environment. In the absence of natural resources endowments, the country would not have been able to achieve the same sort of high rates of economic growth based on private sector activity in the agriculture, manufacturing and services sectors. Deeper investment climate reforms will be necessary to unlock the full potential of the Lao economy, to attract higher quality private sector investment in a wider range of diversified sectors, and to benefit more fully from natural resource development spillovers.

5. Inadequate workforce skills has emerged as the top constraint to private sector expansion in Lao PDR. Earlier ICAs saw "hard" infrastructure related constraints such as transport, energy and telecommunications as the most significant constraints. Over time, and in response to large scale investments in connectivity, these constraints have been overtaken by issues associated with "soft" infrastructure related issues. Other major constraints identified by firms include tax administration, practices of competitors in the informal sector, access to finance and corruption. Similarly, while the country's hard infrastructure has improved over recent years, underdeveloped regulatory governance still limits the quality of provision in the key backbone service sectors that are necessary for improved competitiveness.

6. In fact, while natural resource development has propelled strong rates of economic growth it has also concealed the costs of workforce education and skills that are at a level well behind that of comparable economies. Skill levels in the Lao labor force compare poorly with comparator countries on just about every metric, resulting in a workforce that is ill-equipped to contribute towards a more modern economy. Productivity in Lao PDR is estimated to be about half what would be expected for a country at this level of development. In addition, there has been almost no observable growth in labor productivity during the last decade.

7. While efforts have been made to improve the investment climate in Lao PDR, the costs of doing business remain high in relation to comparator countries at similar levels of development. Significant aspects of the investment climate remain characterized by a lack of transparency and predictability for investors. Much of the reform agenda has been driven by efforts to improve investment facilitation for natural resource sector investments and “mega projects”, with more limited focus on diversified sectors that create more jobs. Similarly, natural resource investors have so far been more able to absorb high investment transactions costs given larger resource rents and economies of scale. The high costs of “doing business”, as a share of business investment costs, have acted as a disincentive for small investors in diversified sectors of the economy. Even in areas where Lao PDR has implemented investment climate reforms, the gap with comparator countries has not been closed as reforms have been implemented elsewhere in the region.

8. Lao PDR, not unlike many other developing countries, suffers from a significant gap between the “de jure” legal framework and the “de facto” environment that enterprises experience on the ground. This means that there is a large gap between what is written in law, and what businesses actually experience on a day-to-day basis. It is not unexpected that the country, which is still in the midst of a major transition from a planned economy to a market economy, should experience substantial policy gaps. However, the result is a persistent and widespread problem commonly referred to as “lack of implementation” that results in inconsistent and unpredictable enforcement of laws and regulations. In fact, the root causes of this problem are likely to be more complex and associated with the political economy of reform in a socialist state and a still unsettled consensus on the direction of reform. Much of the headline investment climate reforms have been driven by the desire to change the outward appearance of the country, including through accession to the WTO and commitments to ASEAN, but without a widespread understanding of the full implications of such commitments. This may have led to a partial reform syndrome with much more success in building the “form” of modern investment climate institutions than in building the “substance”.

9. Meanwhile, labor costs have been rising rapidly in line with a growing economy, but without growth in productivity. Firms that compete on international markets (and are thus “price takers”) such as manufacturers have become stuck in a low profitability, low productivity and low wage cycle, that has constrained growth. The same situation has not, however, acted as a brake on natural resource sector investments which are not labor intensive. Weak skills and poor productivity present a major barrier to private sector development in the diversified sectors, particularly in areas where knowledge acquisition, service delivery and learning-by-doing are important parts of the economic development process. Future growth will have to come from higher productivity and performance, not just in manufacturing but also in agriculture and services.

10. In addition, the rapid expansion of the mining and hydropower sectors, in an otherwise small economy, has put strains on the competitiveness of the non-natural resource sectors. While there are clearly large and obvious benefits to Lao PDR associated with the sustainable development of natural resources, including land, minerals, forest and water resources, this process has begun to seriously distort the wider economy—a phenomenon known as “dutch disease”. Moreover,

lack of transparency and predictability in the investment climate, as well as a unreformed regulatory environment for services, has hampered the emergence of higher value spillover effects from the natural resources boom.

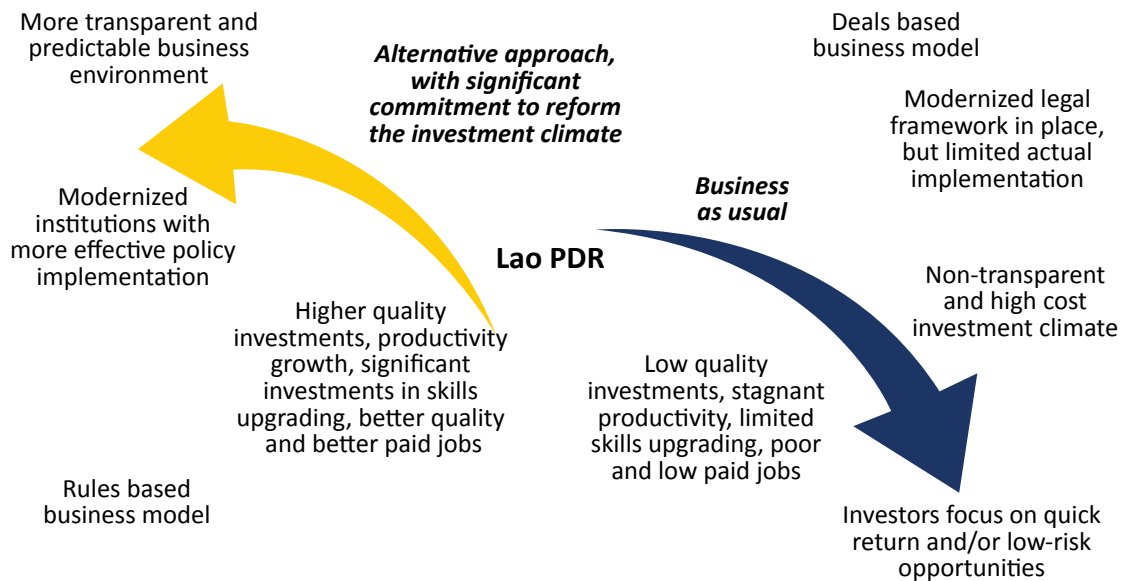
11. Recent years have seen a compression of manufacturing profitability while construction and services profitability has expanded strongly. This could lead to an unbalanced development model with Lao PDR exposed to high systemic risks from sector specific shocks. Moreover, there is a risk that the country experiences high rates of growth, but without significant job creation or development in diversified sectors of the economy.

12. There are also early warning signs that the natural resource based development model is placing strains on governance. Businesses in Lao PDR are increasingly likely to report corruption as a constraint, and the volume and value of rent seeking payments appears to be growing, putting gains in terms of poverty and shared prosperity at risk.

13. The principle conclusion from this Investment Climate Assessment is that policymakers in Lao PDR face two different pathways: business as usual, or radical change in the approach to private sector development (see chart):

- **Business as usual, meaning the continuation of the current, principally natural resource extraction model,** with limited growth in diversified sectors and a focus on “mega projects”. While this approach is still likely continue to drive high rates of growth in the short to medium term, momentum will eventually slow. Moreover, growth rates that are generated by the capital-intensive hydro and mining sectors are unlikely to generate a lot of jobs. With approximately 90,000 additional young people entering the job market every year in the coming decade (four times as many as are currently employed in the hydro and mining sector), a strategy that creates more jobs is needed. In the longer term, there will be significant risks that incremental growth delivers fewer returns in terms of poverty reduction, and an undiversified economy will be vulnerable to sector specific shocks.
- **An alternative development approach that seeks to radically reform the business enabling environment improving transparency and predictability.** The objective would be to put in place an investment climate that can attract higher quality investors and investments, encourage substantially larger investments in skills upgrading in areas that the private sector needs, facilitating productivity growth and the creation of a lot more and better jobs in a wider range of sectors. The focus would be much less on putting in place the “form” of modernized institutions for private sector development, and much more on the actual “substance” of service delivery. This may mean less use of “first-best” institutional solutions, and more context-specific approaches that result in changes to the investment climate that can be observed at the enterprise level. While natural resource based development projects would still play a dominant role in the economy, much greater emphasis would be placed on facilitating higher productivity and performance in diversified and higher value manufacturing, agriculture and services. This would allow for Lao PDR to fully participate in regional production networks across an integrated ASEAN Economic Community.

Two possible future scenarios for Lao PDR



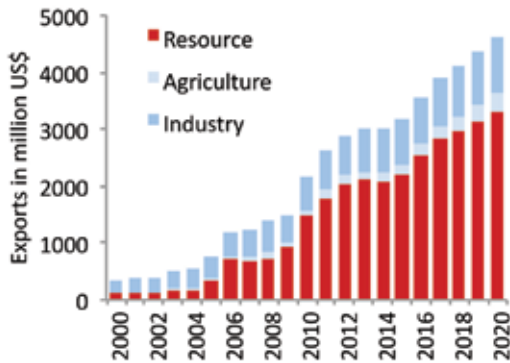
14. Implementing this new approach will require a number of policy actions with a greater focus on full implementation of a more limited set of reforms, rather than partial implementation in many areas:

- **Much greater efforts to streamline and simplify transactions costs in the business enabling environment.** This will require wholesale efforts to rethink the way that the state engages and interacts with private enterprise, and a generalized movement in the public sector away from direct regulation of business activity through licensing, permits and taxation to one of facilitation.
- **A public commitment to transparency in all aspects with which the state engages with the private sector,** including prompt publication of regulations, equal treatment of electronic and printed versions, the application of readiness filters, stronger prior consultation on draft legislation, and implementation of sunset clauses to revoke redundant legislation.
- **Much fuller commitment to the establishment of a rule-of-law state,** including reductions in bureaucratic discretion, the establishment of a low-cost transparent and independent appeals process for administration decisions, and effective separation of regulatory and ownership functions in sectors where state ownership remains significant.
- **Greater certainty and consistency with the way that the private sector is taxed,** with a movement away from negotiation to rules based procedures, access to low-cost administrative arbitration, and wider options for the use of tax credits and risk based refund systems.
- **Increased incentives for firm-level investment in education and skills,** including the ability for firms to offset the costs of workforce skills upgrading against tax liabilities.
- **Accept that significant skills gaps will remain in the private sector for the considerable future, and ensure that gaps can be filled quickly and efficiently with imported skills.**
- **Deeper investments in backbone infrastructure and services for competitiveness, but on an affordable basis,** including border facilities, power, telecommunications and regulatory infrastructure.
- **Modernize the financial sector as a key support base for private sector development,** including opening up of the banking sector to full competition, elimination of controls on interest rates, and the promotion of other forms of non-bank lending.
- **Ensure macroeconomic stability as a prerequisite** for broad based job creation and private sector development.

Lao PDR's investment climate in pictures

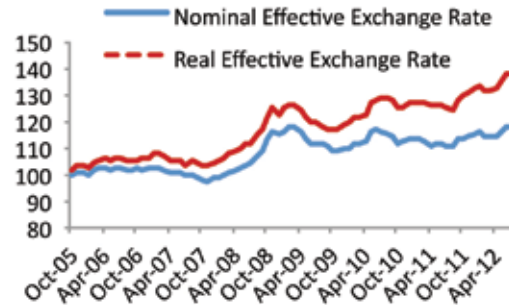


Natural resources account for the majority of Lao exports...



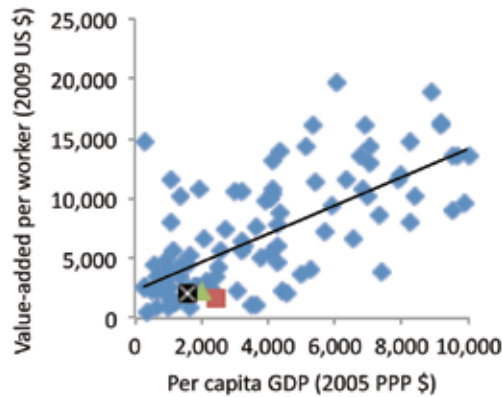
Source: World Bank staff calculations

...contributing towards a strong kip



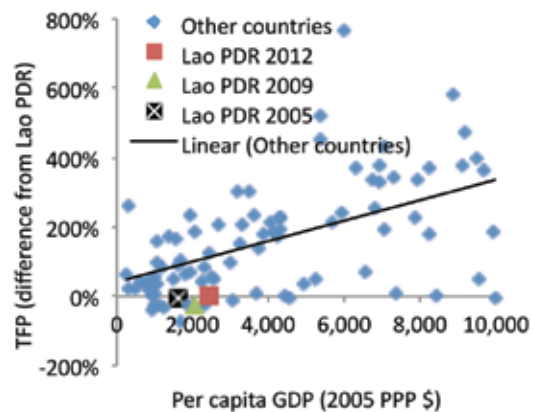
Source: World Bank staff calculations

Growth in value added per worker has been very weak...



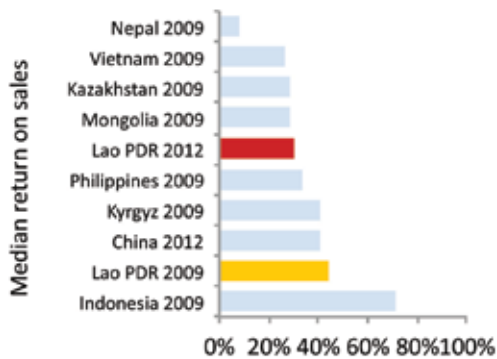
Source: World Bank Enterprise Surveys

...and estimates of total factor productivity show a similar trend



Source: World Bank Enterprise Surveys

Manufacturing profitability has dwindled...



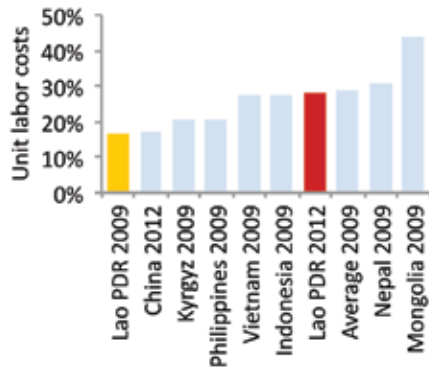
Source: World Bank Enterprise Surveys

...but services profitability increased markedly over the same period



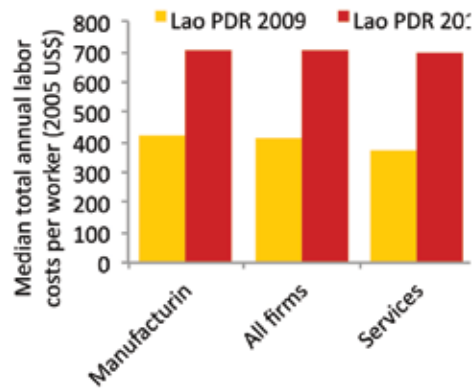
Source: World Bank Enterprise Surveys

Labor costs are rising rapidly...



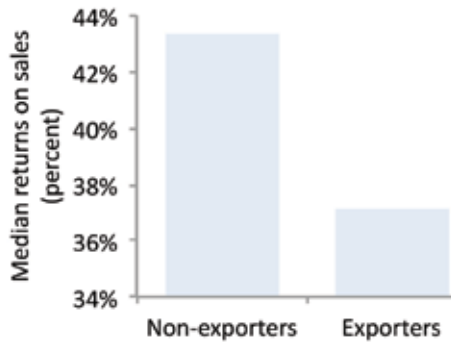
Source: World Bank Enterprise Surveys

...equally across sectors



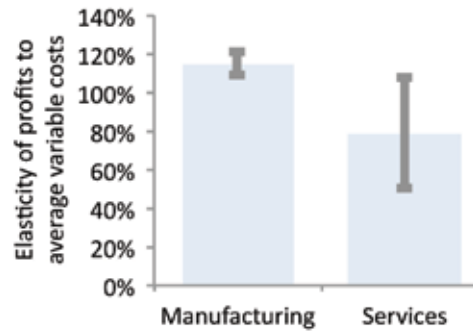
Source: World Bank Enterprise Surveys

Putting pressure on exporters in particular...



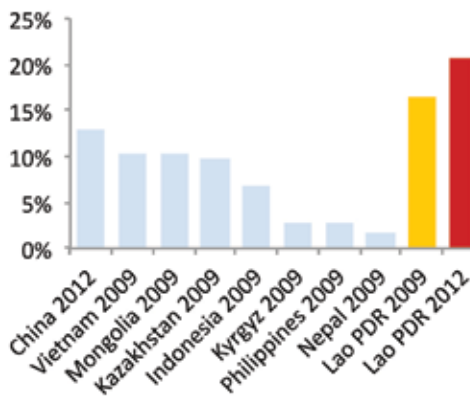
Source: World Bank Enterprise Surveys

...as well as manufacturers



Source: World Bank Enterprise Surveys

Employers in Lao PDR are much more likely to complain about poor skills compared to in other Asian countries...



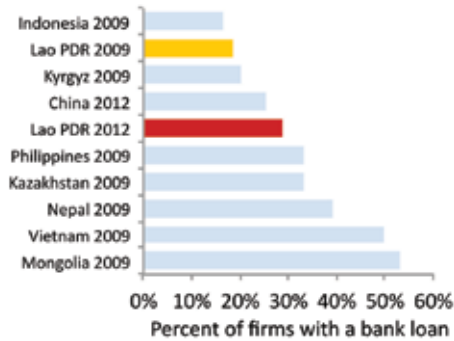
Source: World Bank Enterprise Surveys

...and in particular are complaining about few applicants and/or few applicants with the right skills



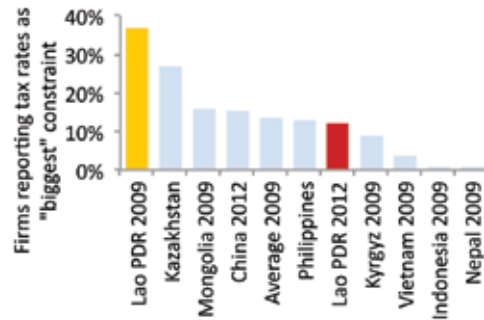
Source: World Bank STEP Employer Survey

Access to finance appears to be less of a problem than in the past



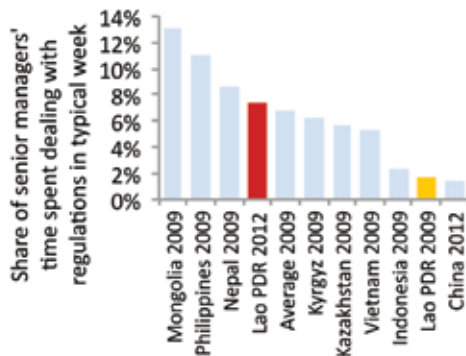
Source: World Bank Enterprise Surveys

Firms are now also less likely to identify tax rates as a problem



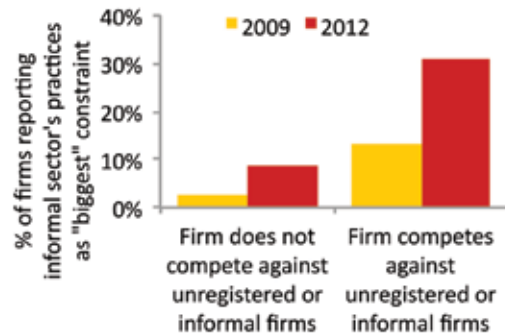
Source: World Bank Enterprise Surveys

However the compliance costs of tax administration remain very high...



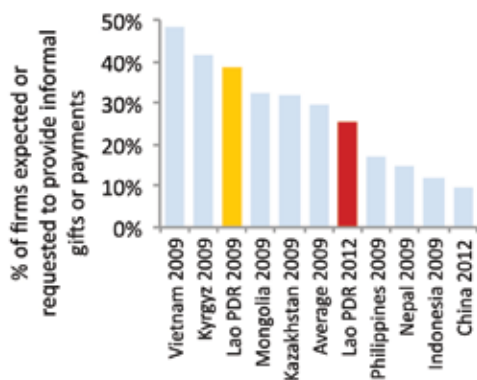
Source: World Bank Enterprise Surveys

...and firms complain about unfair competition from unregistered firms



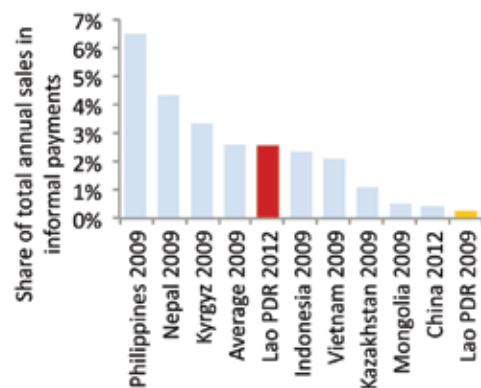
Source: World Bank Enterprise Surveys

Corruption is an increasing concern, and while the number of firms reporting that they make informal payments has gone down...



Source: World Bank Enterprise Surveys

...the cost has gone up dramatically



Source: World Bank Enterprise Surveys

1. Introduction to a new Investment Climate Assessment for Lao PDR



1. The World Bank undertakes periodic Investment Climate Assessments throughout developing countries as part of efforts to provide policymakers with a better understanding of how the private sector is performing in a particular country and where the principle constraints to increased private sector investment are to be found. These assessments are informed principally by Enterprise Surveys that follow a standardized approach and are conducted with the objective of providing detailed information on firm-level performance and constraints. So far, Enterprise Surveys have been conducted in more than 135 different countries and capturing data from over 130,000 individual businesses.

2. This is the third Investment Climate Assessment prepared in Lao PDR, and builds on findings from the previous assessments carried out by the World Bank in 2007 and 2011, each of which was in turn informed by an Enterprise Survey. This 2014 Investment Climate Assessment is based on an Enterprise Survey undertaken across Lao PDR for the World Bank in late 2012. The survey covered nearly 400 formal private firms across six provinces, including small, medium-sized and large firms. Half of the businesses surveyed were in manufacturing and half in services. These data can then be compared with results from the other 135 countries where similar data are available, and with results from the two Enterprise Surveys previously undertaken in Lao PDR. Of the 400 firms surveyed in 2012, half are panel firms that were also interviewed in the last survey, and half are fresh firms that have not been previously surveyed¹.

3. The World Bank Enterprise Surveys are the only firm-level data collected in Lao PDR that use stratified random sampling, and thus allow for results from the sample to be considered statistically representative of the entire Lao private sector². It is also the only Enterprise Survey in the country that captures detailed firm performance data on sales and cost of sales, from which aggregate estimates of firm level profitability and productivity can be computed.

4. The analysis and interpretation of data from the new Lao Enterprise Survey form the basis upon which this Investment Climate Assessment has been prepared. The report begins with a background and contextual chapter that reviews the current economic context of Lao PDR, and then moves into chapters analyzing firm-level performance and business environment constraints as identified by firms. In-depth chapters then follow on the four most significant business environment constraints that firms face in Lao PDR as shown by the data: namely skills, access to finance, regulatory compliance (including tax, licensing and customs/border management) and corruption. The Investment Climate Assessment then concludes with a series of recommendations for policy. More in-depth material on the empirical methodology adopted for the research as well as more details on the results of the underlying econometric analysis undertaken can be found in the various annexes.

¹ In light of the findings from the Enterprise Surveys of 2007 and 2009 showing that “skills” were becoming a more important constraint, the 2012 Enterprise Survey was expanded to include a much more detailed skills module. In particular, firms were asked additional questions regarding problems related to hiring new workers, the type of skills sought, etc. This additional module was included in the 2012 Lao PDR Enterprise Survey as well as in Enterprise Surveys being carried out in neighboring Vietnam, Yunnan Province of China, and in Malaysia, allowing for cross-country comparisons.

² The data are freely available to the public and can be downloaded for from www.enterprisesurveys.org.

2. Setting the stage: economic growth during a natural resources boom



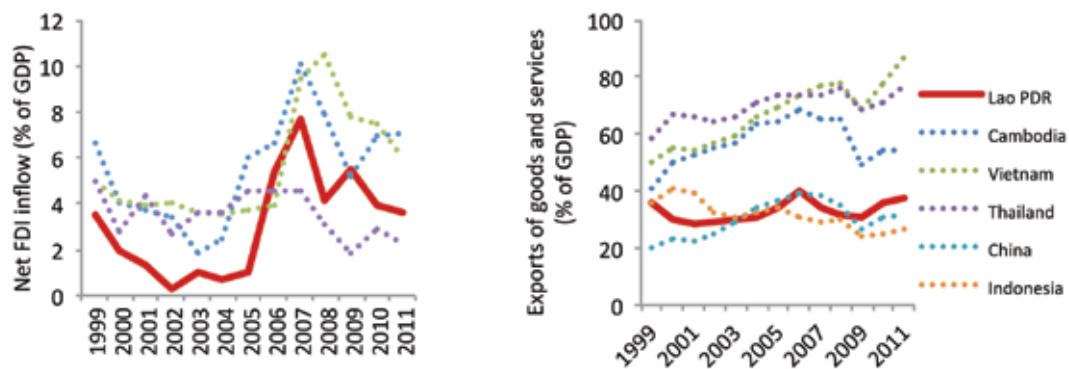
5. Lao PDR has enjoyed real annual GDP growth averaging over 7 percent throughout the two decades to 2014, enabling the country to halve poverty and multiply per capita incomes.

Whereas 46 percent of the population fell below the national poverty line in 1992-93, the poverty headcount ratio dropped markedly to 23 percent in 2012-13. In the same time period, per capita GDP rose from US\$ 227 in 1990 to US\$ 1,460 in 2013, a more than six-fold increase. Strong economic growth is projected to continue within in the 6-8 percent range throughout the next decade.

6. Exports and foreign investment have acted as the primary drivers of growth in Lao PDR's small domestic market, but overall trade openness remains limited compared to regional peers.

Exports averaged 33 percent of GDP and net foreign direct investment inflows averaged 3 percent of GDP over the period 1999-2012 (Figure 1). However, the share of trade in Lao PDR's GDP remains somewhat lower than in other countries in the region. In particular, the GDP share of exports in Lao PDR is comparable to that of countries with much larger domestic markets such as Indonesia or China despite a relatively small population of around 7 million.

Figure 1: Foreign direct investment and exports are key drivers of Lao growth, although the share of exports in GDP is still relatively low by regional standards

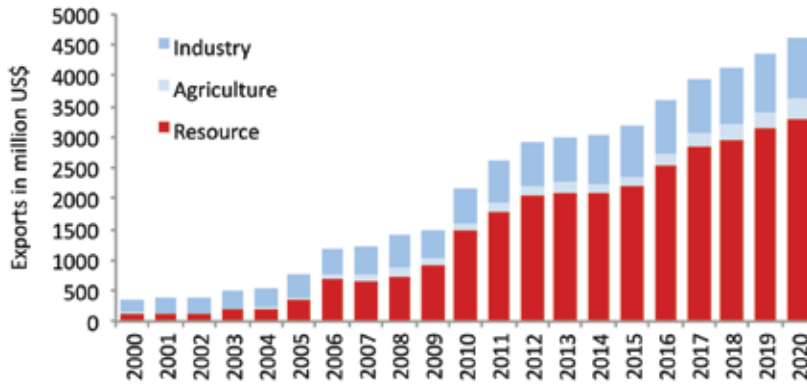


Source: World Development Indicators

7. Natural resources represent an increasing share of Lao exports as the rate of natural resource sector growth outpaces all others, and this trend is expected to continue.

Non-resource industrial products represented almost 60 percent of total exports in 2000 but are expected to drop to about 20 percent in 2020 (Figure 2). Conversely, natural resource exports, principally hydropower and mining, increased from 35 percent in 2000 to 71 percent in 2012 and are expected to stabilize at that level. Within natural resource based exports, hydropower is likely to take a larger share as a significant number of projects under development move into operation, and the two large mining projects (which accounted for much of the resource based growth in the 2000s) move past their peak. The agricultural sector, while important for food security and rural livelihoods for the majority of the population that remains in rural areas, plays a small role in terms of total exports. Other non-natural resource sectors include garments manufacturing and wood processing. Services exports have also grown strongly in recent years, in particular tourism related services.

Figure 2: Natural resources account for the majority of Lao exports

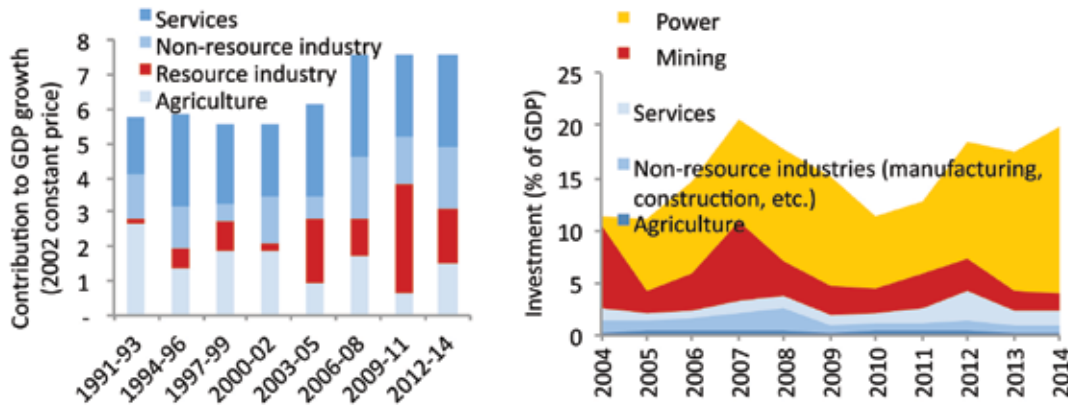


Source: World Bank staff calculations based on official data
Note: Data for 2013 onwards are projections.

8. Economic growth is increasingly dependent on the performance of the resource sector.

Whereas foreign and domestic private investment initially benefitted manufacturing and services, the natural resource sector is now the primary recipient (Figure 3, right panel) and has become a major component of economic growth (Figure 3, left panel). In effect, the contribution of resource industries to GDP growth shot up from less than 0.4 percentage points in the second half of the 1980s to a forecast 3.6 percentage points in 2016-2020 (not displayed).

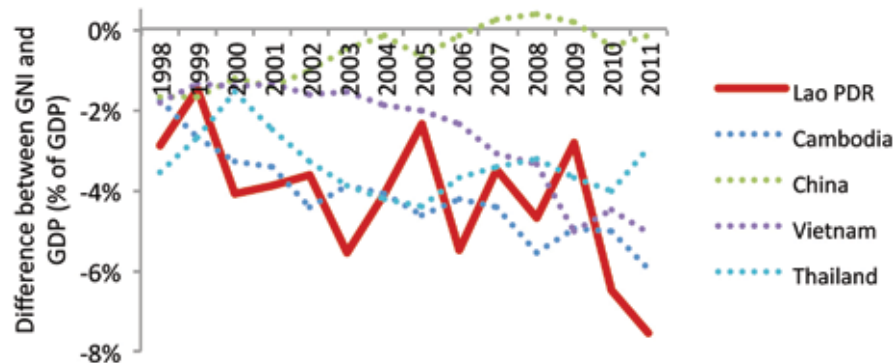
Figure 3: Natural resources, and related spillovers, are becoming the main contributor to GDP growth and the main recipient of private investment



Source: World Bank staff calculations based on official data

9. Non-resource industries are nevertheless expected to expand further, albeit at a slower pace than the resource sector, and in fact provide a stronger basis for long-term development and employment generation. It has been argued that non-resource industries provide unique benefits to growth, such as positive technological spillovers, learning-by-doing effects, and increasing returns to scale in production. In addition, they tend to be more labor-intensive, which enhances the impact of growth on poverty reduction and improvements in living standards. Specializing in resource exports also entails risks for the Lao economy insofar as they are subject to volatile international commodity prices and sector-specific shocks. A further issue is the fact that most resource-industry projects are foreign-owned and a large share of the benefits is repatriated. This means that the development impact of the resource industry is likely to be smaller than what GDP figures suggest. This can be illustrated by Figure 4, which displays the wedge between GNI and GDP, with Lao PDR now exhibiting the most negative difference in the region. Moreover, the gap is increasing: GNI exceeded GDP by 3 percent in 1998 as against 7.5 percent of GDP in 2011.

Figure 4: The gap between GNI and GDP is widening in Lao PDR, which hints at a high GDP share claimed by foreign firms



Source: World Development Indicators

Note: Figure 4 plots for several East Asian countries the gap between gross national income and gross domestic product as a percentage of the latter: $(\text{GNI}-\text{GDP}) \times 100 / \text{GDP}$.

10. Increased openness to trade should help the non-resource export sector grow and the Lao economy diversify. Regulatory improvements are likely to further competition in the Lao market and modernize the Lao business environment. In particular, the completion of Lao PDR's efforts to accede to the World Trade Organization (WTO) is an important step towards the establishment of a rules-based system of economic governance and necessary part of efforts to diversify away from the resource sectors. As a least-developed country Lao PDR entered the WTO under "special and differential treatment", with many of the more challenging reform requirements deferred to the years after formal accession. Further obligations, including on tariff reductions and services liberalization, are part of Lao PDR's commitments towards the establishment of an ASEAN Economic Community in 2015³.

³ ASEAN (2008) sets out actions to eliminate tariff and non-tariff barriers on all intra-ASEAN goods. For instance, import duties on products in the "Priority Integration Sectors" have been eliminated since 2012 and tariffs on products in the "Sensitive List" should be reduced to 0-5 percent by December 31, 2015 in Lao PDR. Tariffs on some sensitive products enjoy "flexibilities" and the elimination of import duty on these products shall not apply to Lao PDR until 2018. In practice, the impact of the AEC 2015 deadline for Lao PDR will be rather muted, as many of the tariff reductions in the most sensitive products will not come into force until later, and in services the country has still to lose by liberalizing restrictions in the professional areas that are covered by the AEC (accountancy, law, engineering, medicine and dentistry), all of which have severe shortages in Lao PDR.

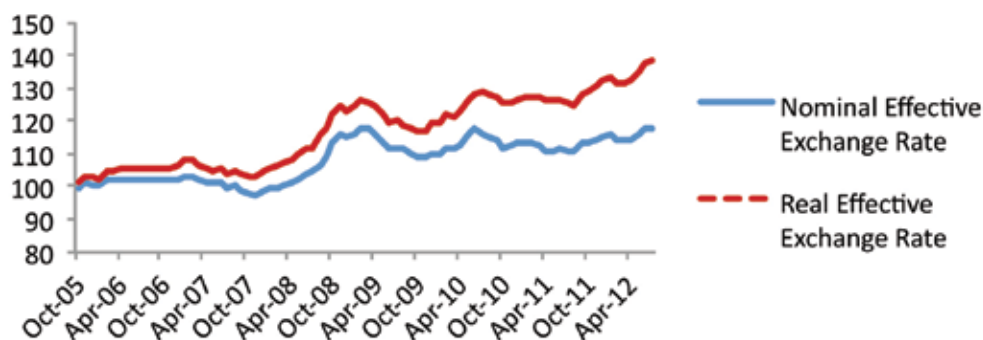
11. A major element of the quality of the investment climate is the rule and stability of law.

A benefit of WTO accession is that future laws will have to comply with its core principles of non-discrimination, transparency and predictability. However, experience from other recently acceding countries suggests that the challenge for Lao PDR in the near future is a risk of backsliding in terms of the ease of trading and rule of law as pressure to reform recedes after WTO accession. This threat is supported by anecdotal evidence of policy uncertainty and the vagaries of legislation implementation, including inconsistencies between interpretations of regulations at the central and local levels, the coexistence of obsolete and new rules, etc., all of which result in a wide gap between the “de jure” investment climate that exists on paper and “de facto” business environment that firms actually face—see Box 1. The same constraints that affect the investment climate in the diversified sectors, also limit the extent to which Lao PDR can attract greater investment to capture increased and higher value spillovers from natural resources development.

12. Besides trade barriers and policy uncertainty, other elements affect the competitiveness of the non-resource sector including high international transport costs and a strengthening real effective exchange rate.

Despite significant investments in infrastructure for improved regional connectivity, both inbound and outbound transport costs in Lao PDR remain stubbornly high due to a mismatch between the type and location of imports and exports, as well as a large excess in the volume of imports over exports. This results in an estimated 90 percent of trucks running empty in one direction of the key corridors through which Lao trade flows⁴. Similarly, the real effective exchange rate (REER) in Lao PDR has appreciated by almost 40 percent between 2005 and 2012 (Figure 5). International Monetary Fund staff estimates suggest a “modest overvaluation” of the Lao REER, by 16-24 percent⁵. Overvaluation of the kip effectively acts as a tax on exports and a subsidy on imports, further eroding competitiveness in a high cost trading environment.

Figure 5: The real effective exchange rate increased by almost 40 percent between 2005 and 2013



Source: World Bank staff calculations based on official data

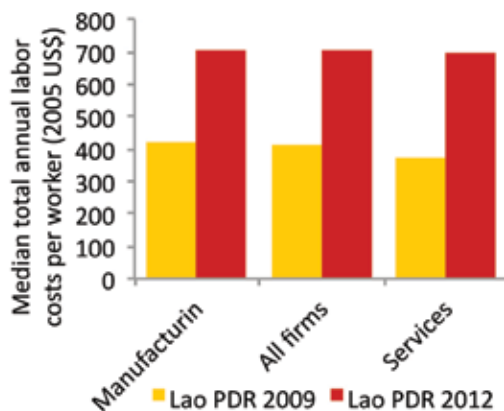
⁴ See World Bank (2014) Lao PDR: Trade and Transport Facilitation Assessment for further details on the performance of key trade corridors used for Lao import and exports.

⁵ IMF (2013) Lao PDR Article IV Consultation.

13. Wages have increased markedly in the past few years in Lao PDR in line with rising incomes and higher living standards. However, wage growth in excess of productivity improvements may indicate declining competitiveness. Labor costs per worker, which include wages, salaries and bonuses have experienced a 70-percent increase in Lao PDR between 2009 and 2012 (Figure 6)⁶. Although labor costs remain low by international standards even when the level of development is controlled for, they do not capture the fact that low labor costs are often correlated with a poorly educated workforce, which adversely affects firm level competitiveness. Unit labor costs partially alleviate this concern by taking productivity into account. In 2009, Lao PDR exhibited the lowest unit labor costs among regional comparators, but three years later is around the mid-point (see Figure 7)⁷. Rises in labor costs for the formal sector are likely to continue, due to increases in the minimum wages which are in turn driven by high food price inflation. Similarly successive large, and almost certainly unaffordable, increases in civil service pay and compensation are also increasing competition for skilled labor.

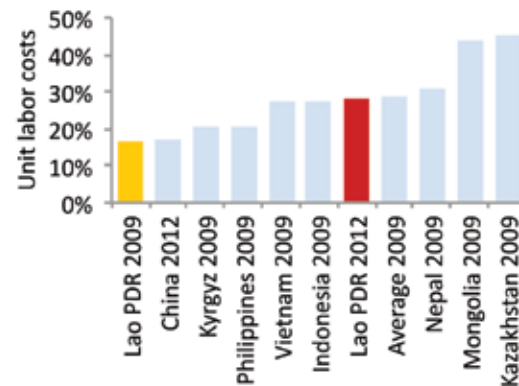
14. The challenge ahead for Lao PDR is to diversify its economy and boost the performance of the non-resource sector. Improving the investment climate calls for strengthening the rule of law, with increased predictability and transparency of regulation. Identifying the binding constraints that enterprises in the manufacturing and services sectors are facing is thus crucial to inform policy. This report intends to improve understanding of the state of the investment climate in Lao PDR, with a special emphasis on how the ongoing natural resource boom is affecting firms in the non-natural resources sector.

Figure 6: Labor costs increased by 70 percent during 2009-2012



Source: World Bank Enterprise Surveys

Figure 7: Unit labor costs have increased dramatically in Lao PDR in recent years



Source: World Bank Enterprise Surveys

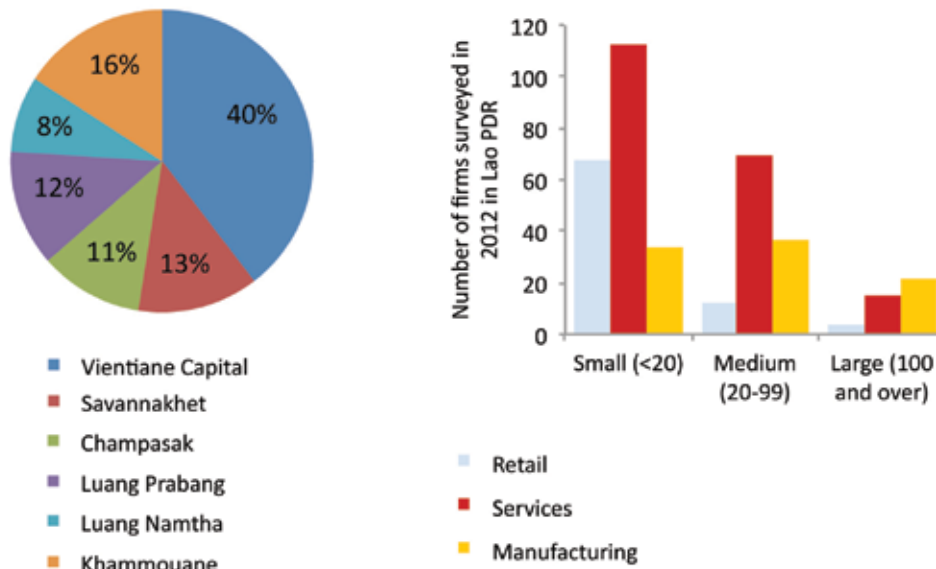
Note: Figure 7 focuses on manufacturing firms.

⁶ Labor cost data are quite noisy, meaning that the statistical pattern is not always clear. However, the overall increase is statistically significantly different from zero at the 90-percent confidence level. Focusing on panel firms and using a fixed-effect regression to control for firms' time-invariant characteristics shows a difference between labor costs in 2009 and 2012 that is statistically significant at the 99-percent level.

⁷ The difference between unit labor costs in 2009 and 2012 is significant at the 95-percent confidence level.

15. The underlying data source for this Investment Climate Assessment is the World Bank Enterprise Survey for Lao PDR carried out in late 2012. The analysis draws upon comparisons with other countries in the same region and income group. The survey covered 379 firms and spanned six provinces of Lao PDR (Figure 8, left panel). The sample was obtained through stratified random sampling, so as to be representative of the population of formal enterprises in the country.

Figure 8: Characteristics of the 2012 Lao PDR Enterprise Survey sample



Source: World Bank Enterprise Surveys

16. By using a rigorous stratified random sampling methodology, the survey is representative of all formal firms operating in the services, wholesale and retail trade, and manufacturing sectors in Lao PDR⁸—see Figure 8 (right panel) for the makeup of the sample by firm size and sector of activity. Moreover, 171 firms that had been surveyed in 2009 could be interviewed again in 2012 thanks to a consistent questionnaire, lending the 2012 Enterprise Survey a panel dimension useful to obtain cleaner estimates and analyze evolution over time in the Lao investment climate.

⁸ The universe of the study is the non-agricultural economy. The sectors common to the Global Methodology of the Enterprise Survey are all manufacturing sectors according to the group classification of ISIC Revision 3.1: manufacturing (group D), construction sector (group F), services sector (groups G and H), and transport, storage, and communications sector (group I).

Box 1: The persistence of regulatory inconsistency in Lao PDR

Lao PDR first began the process of transitioning from a socialist system to that of a market economy with the launch of the New Economic Mechanism in 1986. Since then many key market-oriented laws have been put into place, with highlights being the landmark 2005 Enterprise Law and the 2009 Investment Law. The 15-year process of acceding to the World Trade Organization, completed in 2013, has also helped drive the reform process and ensure the adoption of international norms in a range of areas across the Lao legal framework. Over a similar period, the country has seen substantial inflows of foreign direct investment, seemingly reflecting an improved enabling environment for private sector investment.

Yet, below the surface Lao PDR's transition remains far from complete. In many areas, while primary legislation has been reformed to meet international standards, subsidiary implementing legislation remains either lacking, is duplicative or contradictory. Coupled with weak implementation capacity, the result is often regulatory confusion with no consistent enforcement of rules. This creates obvious rent-seeking opportunities for officials and undermines the stated intent of primary legislation. The lack of predictability also imposes real costs on business, especially in the non-natural resource sectors where returns on investment are lower and investments have longer payback periods. There is also likely to be a direct correlation between the predictability of the investment climate, and the quality of both investors and investment projects.

In fact, a clear majority of FDI that Lao PDR has received has been under the terms of concession agreements, negotiated deal-by-deal in the big natural resource sectors (hydropower, mining and forestry). For concession holders, this provides a greater degree of investor protection and certainty over taxes and benefits than that offered by the regular legal framework. However, this "deal-by-deal" approach has resulted in a range of different outcomes, not always optimal for the country, and provides substantial opportunities for rent-seeking among dealmakers and facilitators. Attracting large amounts of FDI through concession agreements, together with a desire for "mega-projects" may in fact have undermined incentives for reform of the mainstream investment climate based on arms-length contracting between the state and private enterprises.

While Lao PDR has successfully used international commitments, most recently WTO accession but also commitments to ASEAN, as a lever for regulatory reform, the institutional commitment to this reform is patchy. There is a strong consensus among policymakers on the need to modernize Lao PDR and for the country to be an equal partner in international and regional economic groupings. Outsiders have often taken this as a strong signal towards market-economy based reforms. Yet, in practice the commitment to creating a level playing field between state and private sectors is much weaker.

By the standards of comparable economies in transition, Lao PDR has a relatively small state-owned sector, confined principally to the banking, telecommunications and utility sectors. Here efforts to establish a degree of separation between ownership and regulation have been very limited. However, in a range of other sectors, government has either directly or indirectly taken equity stakes in new investment projects. This, coupled with many "quasi-state" enterprises owned or managed by persons connected with government, coupled with the preponderance for "deals" vs. "rules" based investment, has resulted in blurring of the lines between the state and the private sectors.

Thus, much of the business enabling environment could be characterized by a form of "isomorphic mimicry"⁹, where Lao PDR has been much more successful in building the outward form of modernized market institutions, than it has been in establishing the effective functioning of a market economy.

⁹ See Pritchett, Woolcock and Andrews (2012) for more on this terminology.

3. Enterprise performance: how does firm level productivity in Lao PDR compare with other countries?



17. This chapter looks at various measures of firm performance in Lao PDR and compares Lao PDR with other low and middle income countries in East Asia and other regions. The goal being to assess how competitive firms in Lao PDR are in domestic and international markets¹⁰, by looking at several common measures of firm productivity, comparing firms in Lao PDR with firms in low- and middle-income countries¹¹. The chapter starts by looking at two partial productivity measures—labor productivity and capital intensity. The partial analyses are followed with an analysis of total factor productivity, a measure of firm performance that takes into account use of both capital and labor. The advantages and disadvantages of the different measures are discussed¹².

Labor productivity – measuring the efficiency of workers

18. Value-added per worker, or labor productivity, is a basic measure of firm performance. It is the market value of the goods and services that the firm produces less the cost of the raw materials (such as iron, grain, or cotton) and intermediate inputs (such as engine parts or textiles) used to produce the output divided by the number of workers in the firm. Labor productivity is higher for firms that produce more output with less raw material and fewer workers. Differences in labor productivity can be the result of differences in technology, organizational structure, worker skills or management ability. Because labor productivity does not take the use of capital (i.e., machinery and equipment) into account, it will also be higher in firms that use capital in place of labor (i.e., firms that are capital intensive)¹³.

19. Labor productivity is higher in countries with higher per capita income (see Figure 9). The correlation between per capita income and median labor productivity at the country level is approximately 0.82.¹⁴ Lao PDR, however, lies below the linear projection. This suggests that labor productivity is lower in Lao PDR than in other countries at similar levels of per capita income. Based on per capita income, we would expect labor productivity to be about US\$ 5,300 per worker. In practice, it is substantially lower at about US\$ 1,600 per worker. Results were similar in the 2005 and 2009 Enterprise Surveys.

¹⁰ Although the Enterprise Surveys cover services and retail and wholesale trade as well as manufacturing, this chapter focuses mostly on the latter sector. In most countries, the Enterprise Surveys collect the detailed financial data needed to calculate value-added and other performance measures for manufacturing firms only. However, we shall make use of both manufacturing and services firms when focusing on a more restricted set of comparator countries, as in subsequent chapters.

¹¹ Performance comparisons will often refer to “median firms”. Medians are preferred to means because outliers—possibly due to misreported or miscoded information—can have a large impact on the mean. For the purpose of brevity, the term “median firm” is used to refer to the median firm on each particular measure of firm performance.

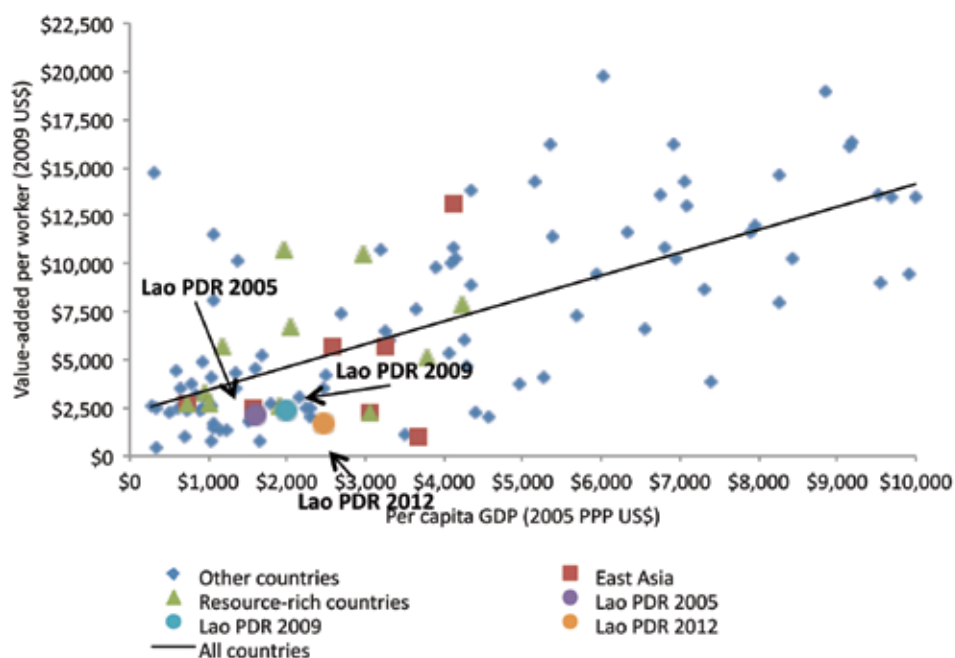
¹² For productivity measures that are expressed in monetary terms, all currencies are converted into 2009 US dollars.

¹³ It might seem that total factor productivity (TFP), a productivity measure that takes capital use into account, is inherently superior to a partial productivity measure like labor productivity. Labor productivity, however, has some advantages. Most importantly, it is easy to measure. In contrast, capital, and thus TFP, is difficult to measure, especially with small firms in developing countries that do not keep detailed and accurate financial accounts. This is a particular concern in Lao PDR because only about one-third of manufacturing firms report that they have audited accounts, and only about 30 percent of manufacturing firms report productivity data directly from their company accounts. This implies that only about 15 percent of manufacturing firms reported data directly from audited accounts. By law, only certain firms in Lao PDR are required to have audits: listed companies, banks, and firms with total assets exceeding LAK 50 billion (about US\$ 625 million).

¹⁴ This is statistically significant at a 1 percent significance level.

20. The results suggest that labor productivity in Lao PDR has not increased significantly since the earlier surveys in 2005 and 2009. The estimate of median labor productivity is, in fact, slightly lower in 2012 than in the two earlier years (about US\$ 1,600 compared to between about US\$ 2,100 and US\$ 2,400 in 2005 and 2009). Before concluding that labor productivity is declining, it is important to note two things. The first is that the estimates are imprecise¹⁵. Second, changes in labor productivity might reflect changes in sample composition or industrial structure rather than changes in firm performance. However, panel firms display the same pattern, although the difference between the 2009 and 2012 estimates is still not significant, which provides further evidence that labor productivity has not significantly increased between 2009 and 2012.

Figure 9: Labor productivity in the manufacturing sector is relatively lower in Lao PDR than in countries at similar levels of per capita income



Source: World Bank Enterprise Surveys

Note: Partial productivity measures are measured in 2009 US\$. GDP is measured in 2005 constant international dollars (PPP adjusted). All data points are for the median firm on each measure of performance. For presentational purposes the chart is shown only for countries with per capita GDP between \$0 and \$10,000. Countries with GDP per capita over this amount are included when we calculate the linear projection.

¹⁵ For example, the 95 percent confidence interval for the 2012 estimate suggests that labor productivity could be as low as US\$ 1,000 per worker or as high as US\$ 2,000 per worker, which encompasses earlier estimates.

Capital intensity – measuring how much machinery and equipment firms are using

21. Labor productivity in Lao PDR might be low relative to other countries at similar levels of development because manufacturing firms in Lao PDR use capital less intensively than firms in similar countries. As discussed above, because labor productivity does not take capital use into account, labor productivity will appear low in firms that substitute labor for capital. To see whether this is the case, it is useful to look at the amount of capital that firms in Lao PDR have relative to similar firms in other developing countries.

22. Firms in Lao PDR employ lower amounts of capital than expected, given per capita income. Firms in countries with higher per capita income tend to be more capital intensive. The correlation between capital intensity and per capita income is positive (0.57)—although it is less highly correlated with per capita income than labor productivity. As with labor productivity, Lao PDR lays below the linear projection (not displayed). This suggests that firms in Lao PDR have less capital per worker than firms in other countries at similar levels of per capita income. The median firm in Lao PDR had about US\$ 2,400 of capital per worker, as against an expected US\$ 4,400. Results for earlier years are similar¹⁶. This would suggest that existing manufacturing firms in Lao PDR are at risk at getting stuck in a low capital investment and low labor productivity trap, exacerbated by the country's limited ability to attract more capital-intensive firms in sectors outside of mining and hydropower.

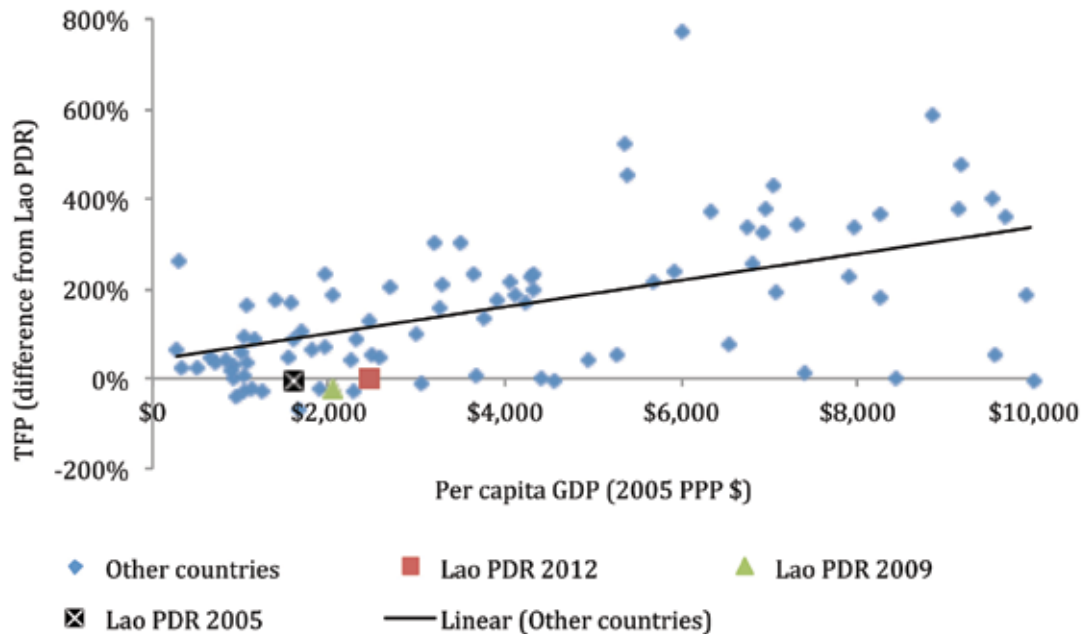
Total factor productivity – an aggregate indicator of enterprise performance

23. Given that labor productivity and capital intensity are both low in Lao PDR, it seems plausible that the two are linked. That is, productivity might be low not because firms are poorly run or not technologically advanced, but because they substitute labor for capital. It is useful, therefore, to look at total factor productivity (TFP). Total factor productivity differs from labor productivity in two ways. First, the measure of total factor productivity that is calculated for this study takes capital use into account. Second, the measure of total factor productivity also controls for sub-sectors of manufacturing. Low labor productivity could be due to firms' either not using capital intensively or operating in low-productivity sub-sectors of manufacturing (such as garments manufacturing). Total factor productivity should control for both¹⁷. Despite this, however, it is important to note that total factor productivity and labor productivity are very highly correlated at the country level—see Annex 2.

¹⁶ Although the median firms reported less capital worker in 2005 and 2009 than in 2012 (US\$ 2,200 in 2005 and US\$ 1,750 in 2009), the differences are small enough that they could be due to sampling variation rather than a real change in capital intensity.

¹⁷ Although TFP is appealing in some ways, it has some limitations. First, like the other partial productivity measures discussed above, it is affected by exchange rate under- and over-valuation. That is, both capital and value-added need to be converted to a common currency (2009 US\$ in this case) before total factor productivity can be calculated. Second, as discussed above, capital is harder to measure than labor or value-added. If capital is mismeasured, total factor productivity will also be mismeasured. In contrast, labor productivity is not affected by the mismeasurement of capital. These, and other limitations, are discussed in detail in Annex 2.

Figure 10: Total factor productivity is low in Lao PDR relative to countries at similar levels of per capita income¹⁸



Source: World Bank Enterprise Surveys

Note: Partial productivity measures are measured in 2009 US\$. GDP is measured in 2005 constant international dollars (PPP adjusted). All data points are for the median firm on each measure of performance. For presentational purposes the chart is shown only for countries with per capita GDP between \$0 and \$10,000. Countries with GDP per capita over this amount are included when we calculate the linear projection.

24. As with the partial productivity measures discussed above, total factor productivity is, on average, higher in countries with higher per capita income (see Figure 10). The simple correlation between per capita income and total factor productivity is 0.8.

25. Total factor productivity appears to be low in Lao PDR relative to other countries at similar levels of per capita income. Based on per capita GDP, we would expect that TFP should be about twice as high in Lao PDR as it is in 2012. Low capital intensity and the possibility that Lao firms mostly might operate in low-productivity sectors do not, therefore, explain low productivity in the country.

26. Similarly to labor productivity, the estimates of TFP suggest that productivity in Lao PDR has not significantly improved in recent years. TFP is higher in Lao PDR in 2012 than it was in 2009 or 2005. It is, however, difficult to definitively conclude that the higher estimate of TFP in 2012 is the result of productivity improvements rather than sampling variation¹⁹.

¹⁸ It should be noted that TFP does not have natural units. That is, it is not measured in monetary units—although as noted above it will be affected by exchange rate over or under-valuation. Results are therefore presented relative to TFP in Lao PDR in 2012. So, for example, the results suggest that total factor productivity in Lao PDR in 2009 was approximately 25 percent lower than in 2012.

¹⁹ We are unable to reject the null hypothesis that TFP is equal in the three years. See Annex 2 for more discussion.

27. Moreover, the estimates suggest that TFP has been increasing more slowly than per capita GDP. Based on per capita GDP growth rates compared with other countries, we would have expected TFP to be about 75 to 85 percent higher in Lao PDR than the estimates currently suggest.

Labor costs – a critical measure of competitiveness

28. Although productivity measures provide some information about how competitive firms in Lao PDR are relative to firms in other developing economies, they can be misleading when considered in isolation. One issue is that firms can be competitive even when labor and TFP are low if wages are comparatively lower. On the other hand, wages and productivity will both be low if workers are relatively poorly educated or relatively unskilled. TFP and labor productivity implicitly treat all full-time workers as if they were the same. For this reason, it is useful to look at labor costs as well as labor and total factor productivity when assessing competitiveness²⁰.

29. As with the partial productivity measures, per worker labor costs are higher in countries with higher per capita income. This could be because workers in these countries are more productive, better educated or more highly skilled. Or it could reflect that firms in these countries tend to be capital intensive. The correlation between median per worker labor costs and per capita GDP is 0.83²¹. Labor costs per worker are also very highly correlated with labor productivity (0.89).

30. Labor costs in Lao PDR are low relative to other countries at similar levels of per capita income. Labor costs are equal to about US\$ 1,000 per worker for the median firm in Lao PDR (Figure 11). Based on per capita income, we would expect them to be closer to about US\$ 1,700 per worker. Lower labor costs might allow Lao firms to be competitive in international markets even though productivity is low²².

31. Although low per worker labor costs can potentially allow unproductive firms to remain competitive in international markets, they are not unambiguously good. Labor costs can reflect differences in worker education and worker skills. If labor costs are low because workers are low-skilled or poorly educated—and this is reflected in low productivity—firms can only remain competitive by paying low wages. This seems to be the case—see Chapter 5 on skills,—which calls for dealing with the root causes of the problem (i.e., low skills)²³. Moreover, as discussed below, offering relatively low wages may also be a key reason why Lao firms are struggling to attract sufficient applicants to fill vacant jobs²⁴.

²⁰ The measure of labor costs that is used in this study is the cost of wages, salaries, bonuses, other benefits, and social payments for workers at the firm divided by the number of workers. The data are taken from the firms' accounts. It includes wages and salaries paid to all workers and managers—not just production workers.

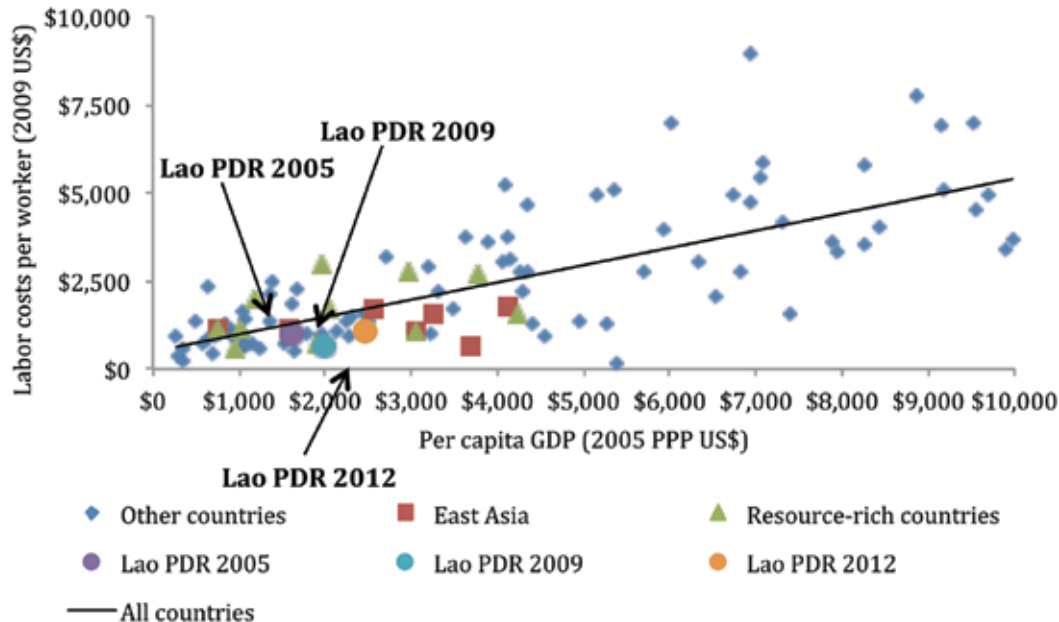
²¹ The correlation is statistically significant at a 1 percent significance level.

²² Although labor costs in manufacturing remain low in Lao PDR by international standards, Figure 6 showed that they increased significantly between 2009 and 2012 in the private, formal economy as a whole.

²³ See Box 3 on training as a potential solution for skills constraints in the garment sector.

²⁴ In World Bank (forthcoming), it is argued that compared to similar periods of economic development and rural to urban transition in comparable countries, the wage premium that is offered by the urban manufacturing sector in Lao PDR to attract workers out of subsistence farming is relatively low.

Figure 11: Labor costs are also lower in Lao PDR than in other countries at similar levels of per capita income



Source: World Bank Enterprise Surveys

Note: Partial productivity measures are measured in 2009 US\$. GDP is measured in 2005 constant international dollars (PPP adjusted). All data points are for the median firm on each measure of performance. For presentational purposes the chart is shown only for countries with per capita GDP between \$0 and \$10,000. Countries with GDP per capita over this amount are included when we calculate the linear projection.

32. Given that both labor productivity and labor costs are low in Lao PDR, it is not immediately clear whether low labor costs will make up for low productivity in terms of competitiveness. Unit labor costs allow us to assess the net impact of labor costs on competitiveness. They take account of differences in productivity when comparing labor costs across countries²⁵. Unit labor costs are higher when high labor costs are not fully reflected in high productivity. When this is the case, all else equal, firms will find it difficult to compete on international markets.

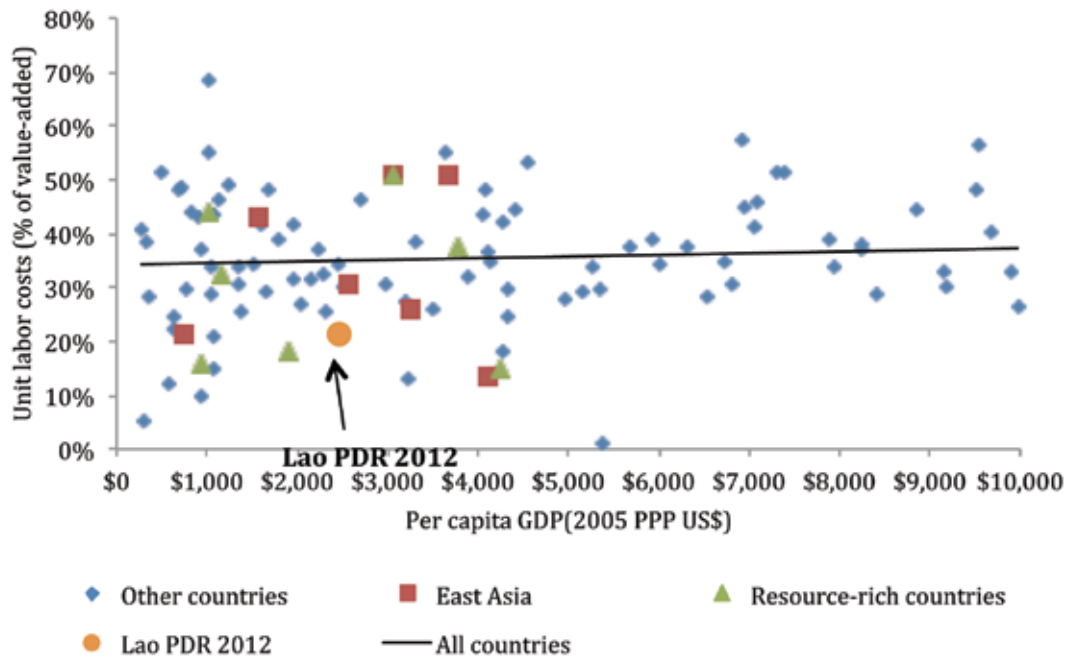
33. Unlike the previous measures of firm performance, unit labor costs are not consistently higher in countries with higher per capita income (see Figure 12). Although the correlation between per capita income and median unit labor costs is positive (0.16), it is small and is not statistically significant (i.e., it could be due to sampling variation).

34. Unit labor costs in Lao PDR, at around 28 percent of value added, are relatively low compared to similar developing countries but are getting closer to the regional average—see Figure 7. Unit labor costs also appear to have been falling since 2005. In part, however, this reflects that a large number of manufacturing firms in Lao PDR appear to have been losing money

²⁵ The measure that we use, labor costs as a percent of value-added, is an approximation to true unit labor costs.

in 2012. That is labor productivity appears to have been negative for a relatively large number of firms (about 20 percent of the sample). This is higher than in most other countries (closer to 3-5 percent overall in other enterprise surveys). Since negative value-added per worker implies negative unit labor costs, this will make unit labor costs appear artificially low. If we restrict the sample to firms that appear to have positive value-added per worker, median unit labor costs are far higher (60 percent). When one focuses on East Asian comparators, unit labor costs in Lao PDR were the lowest in the region in 2009, but slightly above average in 2012 (see Figure 7).

Figure 12: Although labor productivity and labor costs are both relatively low in Lao PDR, unit labor costs are low relative to other low- and middle-income countries



Source: World Bank Enterprise Surveys

Note: Unit labor costs are the ratio of labor costs to labor productivity. GDP is measured in 2005 constant international dollars (PPP adjusted). All data points are for the median firm on each measure of performance. For presentational purposes the chart is shown only for countries with per capita GDP between \$0 and \$10,000. Countries with GDP per capita over this amount are included when we calculate the linear projection.

Exporting and export intensity – examining business competitiveness in international markets

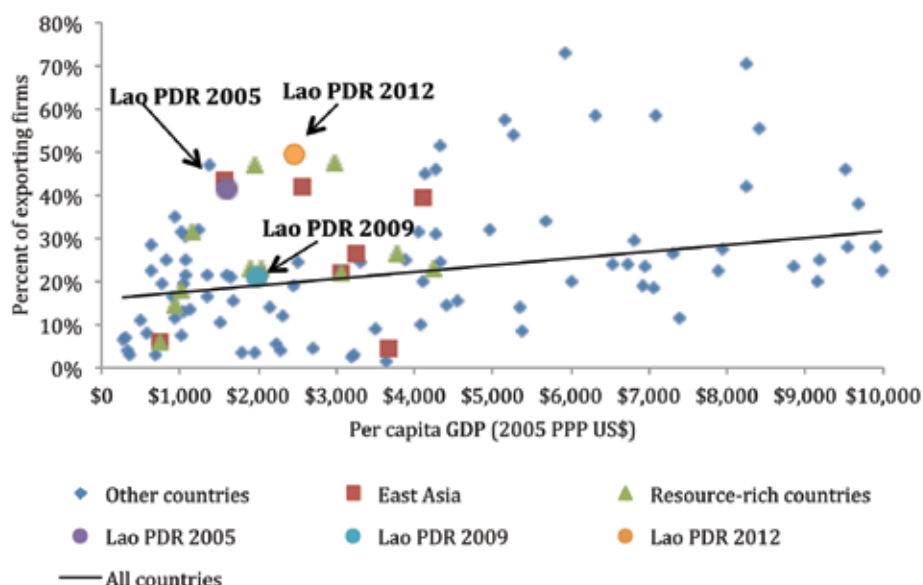
35. Manufacturing enterprises' integration into international markets—how much they export and how much they use imported inputs—also gives an idea of their competitiveness—as opposed to domestic markets where they are better protected from competitors by location and other factors²⁶. Box 2 digs deeper into exporters' competitiveness, summarizing recent research on the vulnerability of Lao exports.

²⁶ We restrict the analysis to manufacturing firms for the sake of comparability with previous sections, and because some service firms have limited ability to enter export markets making comparisons more difficult for non-manufacturing firms.

36. About 50 percent of manufacturing firms in Lao PDR export at least some part of their output, higher than in most low and lower middle income countries. Among countries at similar levels of development to Lao PDR, about 20 percent of firms reported exporting some part of their output (Figure 13). In this respect, firms in Lao PDR appear to be performing relatively well. That is, although TFP appears to be relatively low in Lao PDR when compared to countries at similar levels of development, firms in Lao PDR appear to remain relatively competitive in international markets. It is possible that wage levels play some role in this, as will almost certainly geography and the small size of the domestic market.

37. Lao PDR also compares favorably with other countries in Southeast Asia in terms of exporting²⁷. Although manufacturing firms in Malaysia and Thailand were more likely to export than firms in Lao PDR, the country compares favorably with other countries in the region such as Vietnam, Cambodia or China²⁸. This is somewhat inconsistent with data showing that the overall level of openness in Lao PDR is comparatively low, suggesting that while the average firm in Lao PDR is quite internationally oriented, the weight of such firms in the broader economy is relatively low.

Figure 13: Almost 50 percent of firms in Lao PDR reported that they exported some part of their output—a higher percentage than in most developing countries



Source: World Bank Enterprise Surveys

Note: Partial productivity measures are measured in 2009 US\$. GDP is measured in 2005 constant international dollars (PPP adjusted). All data points are for the median firm on each measure of performance. For presentational purposes the chart is shown only for countries with per capita GDP between \$0 and \$10,000. Countries with GDP per capita over this amount are included when we calculate the linear projection.

²⁷ However, let us note that exports as a percentage of GDP are relatively low in Lao PDR, especially when one takes into account the size of the economy—see Figure 1.

²⁸ One puzzling aspect of the data is that far more manufacturing firms in Lao PDR reported exporting in the 2012 Enterprise Survey than in the earlier 2009 one. In 2009, only about 20 percent of firms reported that they exported any part of their output. In this respect, the results for 2012 are more similar to the results for 2005. Given the relatively large discrepancy between the two sets of results, it is worth exploring this more fully—see Annex 3. Among the panel firms, there is no clear evidence that individual firms were more likely to export in 2012 than in 2009. That is, the observed increase in exporting does not appear to be due to non-exporters entering export markets. Rather, it seems that the shift in percent of manufacturing firms exporting is due either to a shift in industrial structure in Lao PDR—towards sectors or areas where firms are involved in exporting—or possibly due to a shift in the sample base.

38. As in most countries, exporters in Lao PDR tend to be larger than non-exporters. The median exporter in Lao PDR had about 50 employees, compared with only about 15 employees for the median non-exporter. Given the costs of setting up service and distribution networks and other fixed costs associated with exporting, it is common for large firms to be more heavily in export markets than small firms.

39. In most countries exporters are consistently more productive than non-exporters, but this is not the case in Lao PDR. Labor productivity is over twice as high among non-exporters as it is among exporters²⁹. A similar pattern could be observed in the 2009 Investment Climate Assessment³⁰. The low productivity of exporters remains somewhat anomalous. That is, many studies that have compared the performance of exporters and non-exporters have found that exporters tend to outperform non-exporters—although it is difficult to interpret this causally. This finding has been interpreted in at least two ways. The first is that the discipline of competing in export markets causes firms to become more productive (the learning-by-exporting hypothesis). The second is that only firms that are already efficient are able to enter export markets (the self-selectivity hypothesis)³¹. Both hypotheses, however, result in exporters outperforming non-exporters. An important question is why we do not observe this usual pattern in Lao PDR.

Table 1: Firm performance in Lao PDR, by export status

	Non-exporters	Exporters
Number of workers (median)	15	50
Value added per worker	US\$ 1,996	US\$ 847
Capital per worker (book value)	US\$ 5,996	US\$ 655
Capital per worker (sales value)	US\$ 2,131	US\$ 2,922
Labor costs per worker	US\$ 1,227	US\$ 1,023

40. One possible reason for why productivity is low among exporters is that exporters might be concentrated in labor-intensive or low-skill sectors. Some evidence appears consistent with this. Firms in the garment industry and the wood industry, where labor productivity appears particularly low, were more likely to export than other manufacturing firms. This might suggest that Lao PDR's comparative advantage remains in these relatively low-productivity sectors³².

²⁹ See also Box 2 on export vulnerability.

³⁰ World Bank (2011).

³¹ See Tybout (2003) and Bernard and others (2007). The learning by exporting and self-selectivity hypotheses are not mutually exclusive (i.e., both could be true to some degree) and empirical evidence appears to support both. For example, several econometric studies that have looked at whether enterprises improve their productivity before or after they start exporting have found that productivity improvements precede exporting, providing support for the self-selectivity hypothesis. See for example, Clerides and others (1998), Bernard and Jensen (1999), Liu and others (1999) and Aw and others (2000). However, case studies often support the "learning by exporting" hypothesis. Studies of exporters in Korea and Taiwan found that export buyers were an important source for new technologies, which they provided in various forms including complete blueprints, information about manufacturing processes and quality control methods, technical advice and on-site plant inspections, and training for technical and production staff (Westphal, 2002).

³² As in 2009, exporters in Lao PDR appear to have lower labor costs than non-exporters. The combination of low labor costs and low productivity indeed suggests that exporters operate in relatively low-skill, labor-intensive sectors. However, the data on capital intensity only partly supports this hypothesis: Although capital per worker appears low when measured at book value, it appears relatively high when valued using the managers' estimates of sales value in current condition.

41. Another possibility, which was also suggested in the previous investment climate assessment, is that low levels of competition in domestic markets might affect measured productivity. Ideally, measures of labor productivity use physical measures of output. Because this information is typically not available, however, this study—as most econometric analyses do—measures sales in monetary rather than physical terms—see discussion in Annex 3. Unfortunately, monetary measures of output are affected by prices. When domestic markets are not highly competitive, monetary measures of output might appear artificially high for domestic firms. In contrast, firms competing on international markets will be facing greater competition and lower prices.

42. Firms in Lao PDR that do export are heavily involved in export markets. The average exporter exports 84 percent of their output. Moreover, about 43 percent of exporters export all of their output and over 75 percent export over 90 percent of output. This suggests that, at least to some degree, the export market is separate from the domestic market. Exporters imported a greater share of their inputs, but the difference between exporters and non-exporters was small.

Table 2: Internationalization, by firm type

	% of firms exporting	Exports (% of sales)	% of firms importing	Imports (% of inputs)
Non-exporters	0 %	0	50 %	28
Exporters	100 %	84	41 %	31
Garments	77 %	73	96 %	82
Wood and Furniture	67 %	54	16 %	9
Food	57 %	42	27 %	9
Other	12 %	10	52 %	28
Domestic	46 %	38	40 %	27
Foreign-owned	60 %	59	91 %	57
Small (5-19 employees)	34 %	25	20 %	10
Medium (20-99 employees)	46 %	39	58 %	35
Large (More than 100 employees)	88 %	83	86 %	70

Source: World Bank Enterprise Surveys

43. Foreign-owned firms are more tied into international markets in several ways. First, they are slightly more likely to export (60 percent compared to 46 percent of domestic firms) and export more of their output on average (59 percent compared to 38 percent of domestic firms). They also imported a greater share of their inputs (57 percent compared to 27 percent).

44. As noted above, exporters tend to be larger than fully domestic firms. Whereas 88 percent of large firms with more than 100 employees exported some part of their output, only 34 percent of small firms did the same. Large firms also imported more of their inputs than small firms—70 percent compared to only 10 percent for small firms.

Profitability – the bottom line for investors**45. At the enterprise-level, profitability is generally associated with better firm performance.**

Firms that are more productive and that have lower overhead costs will be more profitable than other firms because they manage to produce more output at lower cost³³. But at an industry or country level, high profitability could also reflect a lack of competition—especially in countries like Lao PDR where many firms sell only in domestic markets. When markets are less competitive, firms will be able to earn higher profits than in more competitive markets where profits will typically be competed away.

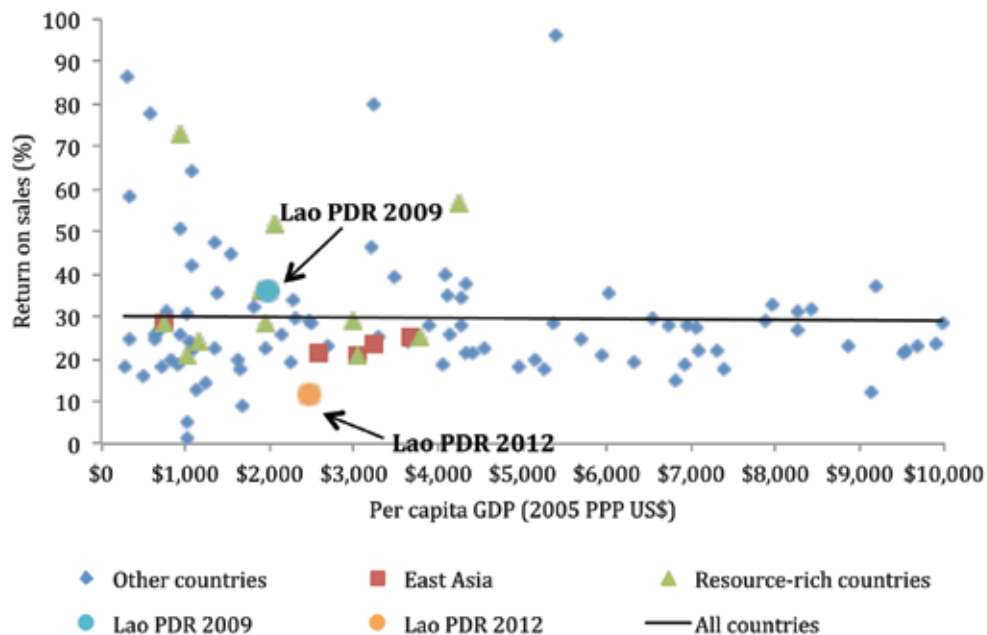
46. In contrast to the previous measures of firm performance, return on sales does not appear to vary systematically with per capita income.

Figure 14 shows data on return on sales in Lao PDR and the other countries for which similar data are available. Return on sales appears to be close to 30 percent on average at all income levels. This suggests that although productivity is higher in high-income countries, payments to labor and other factors are also higher meaning that profitability, as unit labor costs, does not vary systematically with income.

47. Returns on sales were 12 percent for the median firm in the 2012 Enterprise Survey for Lao PDR, lower than the cross-country average.

It is also significantly lower than the return on sales observed in the 2009 Enterprise Survey (about 36 percent).

Figure 14: Return on sales in Lao PDR was lower in 2012 than in the earlier 2009 survey



Source: World Bank Enterprise Surveys

Note: Partial productivity measures are measured in 2009 US\$. GDP is measured in 2005 constant international dollars (PPP adjusted). All data points are for the median firm on each measure of performance. For presentational purposes the chart is shown only for countries with per capita GDP between \$0 and \$10,000. Countries with GDP per capita over this amount are included when we calculate the linear projection.

³³ It is possible to calculate several before-tax measures of profitability in a consistent way for the most recent set of World Bank Enterprise Surveys. Data on tax payments is not collected in the Enterprise Surveys and, therefore, profitability must be calculated before taxation. Because information on depreciation and amortization are also not collected, these measures do not include these costs either. Because, as discussed in the section on capital intensity and productivity, capital is difficult to measure accurately, this section relies on return on sales (profits over sales) rather than on return on assets (profits over capital).

48. In contrast to most other countries, foreign-owned firms are less, not more, productive than domestic firms (US\$ 1,641 per worker compared to US\$ 1,725 per worker for domestic firms). This might reflect the markets that the firms are involved in. In particular, as noted above, foreign-owned firms are more likely to be involved in export markets than domestic firms. Second, also in contrast to most other countries, large firms are not more productive than small firms. Again, this could reflect the types of sectors that these firms are in. Garment firms, in particular, appear to be relatively large and labor productivity is relatively low in the garment sector compared to most other sectors. Firms in the wood and furniture sector are also relatively unproductive—although they are not especially large compared to other firms.

Table 3: Firm performance, by firm type

	Number of workers	Value added per worker	Capital per worker (book value)	Capital per worker (sales value)	Labor costs per worker
Domestic	22	US\$ 1,725	US\$ 2,192	US\$ 2,379	US\$ 1,052
Foreign-owned	92	US\$ 1,641	US\$ 176	US\$ 2,557	US\$ 1,502
Small (less than 20 workers)	9	US\$ 1,627	US\$ 6,069	US\$ 2,131	US\$ 1,197
Medium (20-99)	50	US\$ 1,729	US\$ 1,685	US\$ 3,317	US\$ 1,023
Large (more than 100 workers)	197	US\$ 1,697	US\$ 614	US\$ 4,985	US\$ 1,080
Garments	150	US\$ 1,729	US\$ 493	US\$ 614	US\$ 1,109
Wood and Furniture	23	US\$ 847	US\$ 6,069	US\$ 13,638	US\$ 1,023
Other manufacturing	14	US\$ 2,399	US\$ 14,729	US\$ 2,131	US\$ 1,227

Source: World Bank Enterprise Surveys

Note: Partial productivity measures are measured in 2009 US\$.

Is Lao PDR suffering from “Dutch disease”?

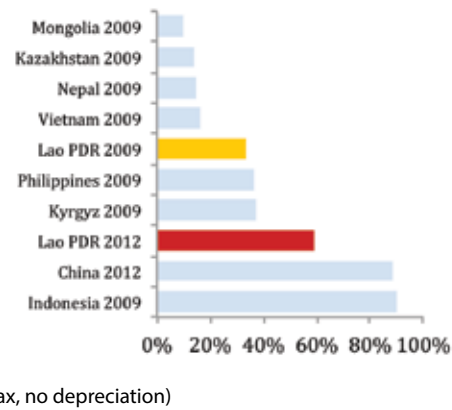
49. Services and non-exporting firms have fared much better than manufacturing enterprises and exporters between 2009 and 2012. The comparison of firm performance in the manufacturing sector across countries can be extended to a comparison of sectors within Lao PDR. Sharp changes occurred between the last two World Bank Enterprise Surveys: while profitability, measured according to median returns on sales, was at a similar level in manufacturing and services in 2009—around 40 percent—Figure 15 and Figure 16 reveal that it had decreased by a third in the former and increased by over 75 percent in the latter sector by 2012³⁴. Comparing exporters and non-exporters yields a similar picture, since 63 percent of exporting firms in Lao PDR operate in the manufacturing sector—see Figure 17.

³⁴ The evolution of profitability in manufacturing and service firms could be due to a change in industrial structure. As noted in the previous Investment Climate Assessment, exporters tend to have lower return on sales than non-exporters. This remains true in the 2012 sample. As discussed above, the sample in the 2012 survey is more heavily weighted towards exporters than the 2009 sample—perhaps accounting for some of the difference as exporters predominantly operate in the manufacturing sector. Unfortunately, the data are quite noisy and using the whole sample or only panel firms, or making slight alterations to how the main variables are defined yields quite different results. Nevertheless, when coefficients are significant, the pattern that consistently emerges is that manufacturing firms have seen their profitability decrease between 2009 and 2012 while the service sector has experienced the converse.

Figure 15: During 2009-12, profitability dwindled in manufacturing...



Figure 16: ...but increased markedly in services over the same period



Source: World Bank Enterprise Surveys

Note: The horizontal axis displays median returns as a percentage of sales (pre-tax, no depreciation). "Services" refers to all retail, construction and service firms, i.e. with ISIC Rev. 3 groups E through K.

50. The data suggest that the tradable sector is less profitable than the non-tradable one. As mentioned above, almost 50 percent of manufacturing firms in Lao PDR export, as against less than 12 percent for services. Besides, manufacturing goods being more easily traded across borders, manufacturing firms usually compete with international products even on the domestic market, as they can be imported. The evidence suggests that firms specialized in non-tradable products are performing better than the tradable sector in Lao PDR, confirming previous findings on exporter performance. The remainder of this section puts forward potential explanations for this pattern.

51. First, labor costs have increased dramatically without a concomitant rise in labor productivity. This may originate from a consumption boom fueled by rents from the resource sector. Second, the labor costs hikes could be absorbed in the non-tradable sector as it is less competitive. Third, a steep increase in the real effective exchange rate, which might be attributable to soaring natural resource exports, seems to be harming the Lao tradable sector.

Figure 17: Exporters in Lao PDR are less profitable than non-exporters

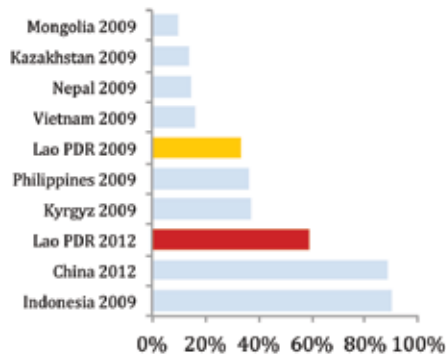
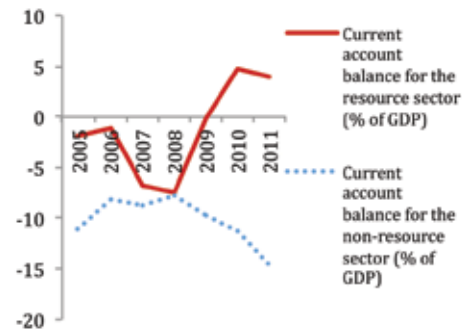


Figure 18: Hydropower and mining exports make up an increasing share of Lao GDP, while the non-resource current account balance is deteriorating



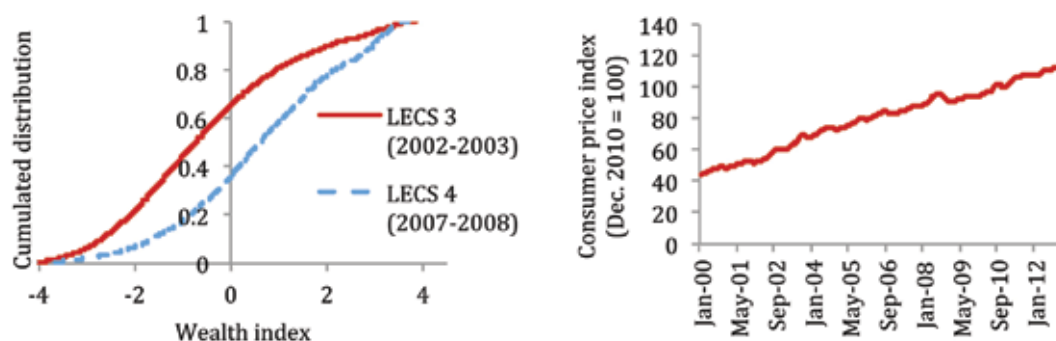
Source: World Bank Enterprise Surveys

Source: World Bank staff estimates based on official data

52. Wage increases are boosting living standards in the short run but might not be sustainable in the longer term as they are biting into manufacturing firms' profits. Figure 7 showed that although labor productivity remains low in Lao PDR—even when taking the country's level of income per capita into account—and did not improve significantly between 2005 and 2012—see Figure 9—the gap between the last two Enterprise Surveys saw a dramatic increase in labor costs per worker, which rose by 70 percent. This strong upswing is likely to originate from a consumption boom. Non-tradable activities would be less affected in terms of profitability as they enjoy some room to pass on increased labor costs to consumers.

53. Muted domestic competition may have helped the service sector better absorb labor cost increases compared to manufacturers. Non-tradable firms did well to weather the increase in wages per worker because they operate in a market where competition is less keen. This can be illustrated thanks to the elasticity of profits with respect to marginal costs: in sectors where competition is fiercer, profits are expected to fall more rapidly due to an increase in marginal costs³⁵ as they are not cushioned by markup prices. Figure 20 shows that profit elasticity is significantly higher for manufacturing than for service firms, which suggests that competition is fiercer for the former. This may be explained by the fact that service firms seldom compete with products from abroad and thus enjoy some room to pass on rising costs to the prices they charge consumers, whereas the prices of tradables are set internationally and thus beyond Lao firms' control. Subsequently, evidence suggests that resource and non-tradable industries are growing at the expense of the manufacturing sector, which is stifled by a "spending effect"³⁶.

Figure 19: Increasing prices and enhanced wealth are signs of a consumption boom

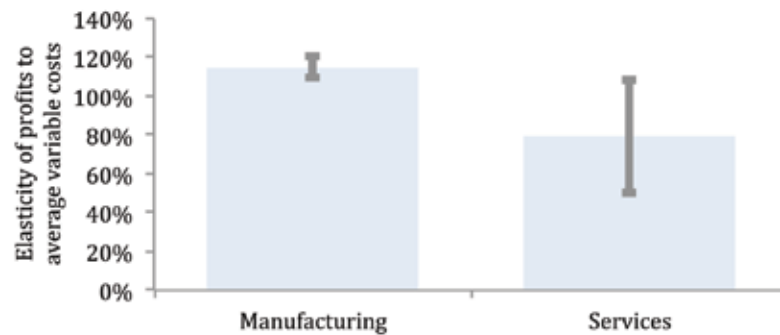


Source: LECS 3 (2002-2003) and LECS 4 (2007-2008) (left) and World Bank staff calculations based on official data (right)

Note: The left panel uses a wealth index based on the value of non-productive assets owned by households and the quality of their dwelling. It was built using principal components analysis. The index is the first principal component, which explained 46 percent of the variance. Factors all have component loadings of at least 0.2.

³⁵ As marginal costs are not observable in the data, average variable costs are used as a proxy, following Boone, van Ours and van der Wiel (2007), who developed the profit elasticity approach to measuring competition.

³⁶ Brahmhatt and Vostroknutova (2010).

Figure 20: Competition is keener for manufacturing than service firms

Source: World Bank Enterprise Surveys

Note: The elasticity of profits with respect to average variable costs was obtained thanks to the data on panel firms. Fixed-effects were used to net out the effect of time-invariant omitted variables. The elasticity is expressed in absolute value.

54. Finally, the tradable sector is likely to be adversely affected by the recent appreciation of the Lao Kip against trading partners' currencies. The increase in net revenue on exports from natural resources as a share of GDP since 2008 corresponds to a deterioration of the share of non-resource exports—see Figure 18. This pattern should be analyzed in the light of the evolution of the real effective exchange rate,³⁷ which increased by almost 40 percent between 2005 and 2012, with most of the upsurge occurring since 2008—see Figure 5. The concordance of dates suggests that enhanced international demand for Lao natural resource exports is causing an appreciation of the currency, which harms exporters of non-resource products less competitive on international markets. Beyond exporters, all firms operating in the tradable sector are likely to suffer from a stronger Kip as imports become cheaper.

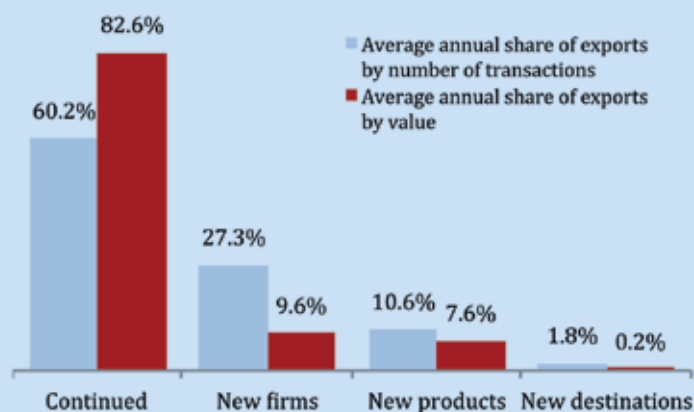
55. The appreciation of the Kip and the related consumption boom could be interpreted as signs of what is often called a “Dutch disease”, whereby a boom in the resource sector stifles growth in non-resource tradables. This is cause for concern insofar as “manufacturing and other non-resource tradables possess specific long-term, growth-enhancing qualities such as the presence of positive technological spillovers, learning by doing effects, or increasing returns to scale in production”. In the short run, there are also concerns about the profitability and thus future health of labor-intensive export industries, such as the garment sector that accounts for 54 percent of employment in the Lao manufacturing sector.

³⁷ The effective exchange rate for the domestic country, here: Lao PDR, weights foreign currencies by the shares of the corresponding countries in Lao PDR's external trade. An increase represents an appreciation of the local currency. While the nominal exchange rate indicates the amount of foreign currency that can be purchased for one Lao Kip, the real effective exchange rate takes purchasing power into account and tells us at what rate goods and services can be exchanged.

Box 2: Export vulnerability in Lao PDR

Analysis of firm-level customs data from Lao PDR shows that export flows in value terms are dominated by large firms supplying the same products to the same markets from one year to the next³⁸. New exports tend to be small in value and short-lived, suggesting that while there is significant experimentation and discovery, firms have only limited capacity to stay in markets once a new entry is made. Regression analysis indicates that the probability of export survival is higher among firms that specialize in particular products (and to a lesser extent destinations), and lower among firms that lack focus attempting to export multiple products to multiple markets. Agglomeration of exporters in the same destination with the same product is also beneficial, a positive externality that could be encouraged by policy. The results suggest that export promotion policy should focus on providing in-market support for firms that have already made the step of discovering a new export product or destination, but perhaps require support to stay in that market.

Figure 21: On average 40 percent of annual Lao exports are new (i.e. new firm, new product or new destination) when measured in terms of number of export transactions (firm-product-destination triplets)..... however, when measured in terms of export value (US\$ million) the share of new transactions drops to less than 20 percent on average and it is the continued exporters (same firm, same product to the same destination) that dominate.



Source: World Bank staff calculations based on data from Lao Customs Department

³⁸ See Stirbat, Record and Nghardsaysone (2013) for a fuller exposition of survival trends among Lao exporters, using detailed firm-level customs transactions data.



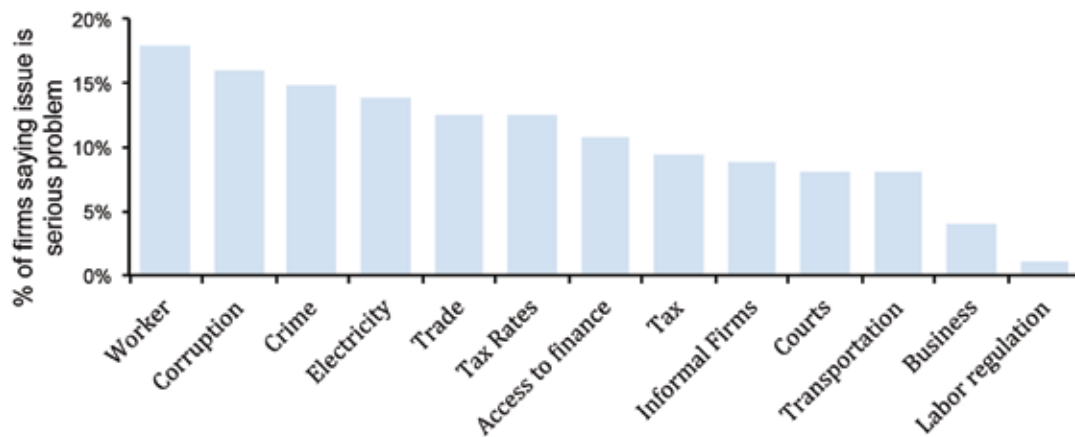
4. Enterprise constraints: what do firms in Lao PDR view as the major challenges to doing business?



56. This chapter focuses on the main subjective indicators of the investment climate from the enterprise survey—questions that ask managers whether certain areas of the business environment are serious obstacles to firm performance. Although, as discussed in Annex 4, subjective indicators have several problems, they provide a useful starting point for any analysis of the investment climate. Enterprise managers know more about the immediate problems facing their businesses than government officials, academic researchers, or other outside experts and, therefore, it makes sense to take their concerns about the investment climate seriously.

57. The Enterprise Survey asks firms to rate how large a constraint each of 17 areas of the investment climate is to the current operations of their business. Business managers respond by rating each on a five-point scale between “no obstacle” and a “very severe obstacle”. Figure 22 shows the percent of firms that rated each area as a “major” or “very severe obstacle”³⁹. If firms referred to the obstacle as a “major” or “very severe”, the text refers to it as a serious obstacle or constraint.

Figure 22: Worker education, corruption, crime, and electricity are the areas of the investment climate that enterprise managers were most likely to say were serious concerns



Source: World Bank Enterprise Surveys

85. Firms were most likely to say that worker education was a serious problem. Almost 20 percent said that this was a serious constraint. Corruption and crime ranked second and third respectively, with about 15 percent ranking each as a major constraint. About 13 percent of firms reported that electricity, trade regulations and tax rates were serious problems. Other areas were reported as serious constraints by less than 10 percent of firms.

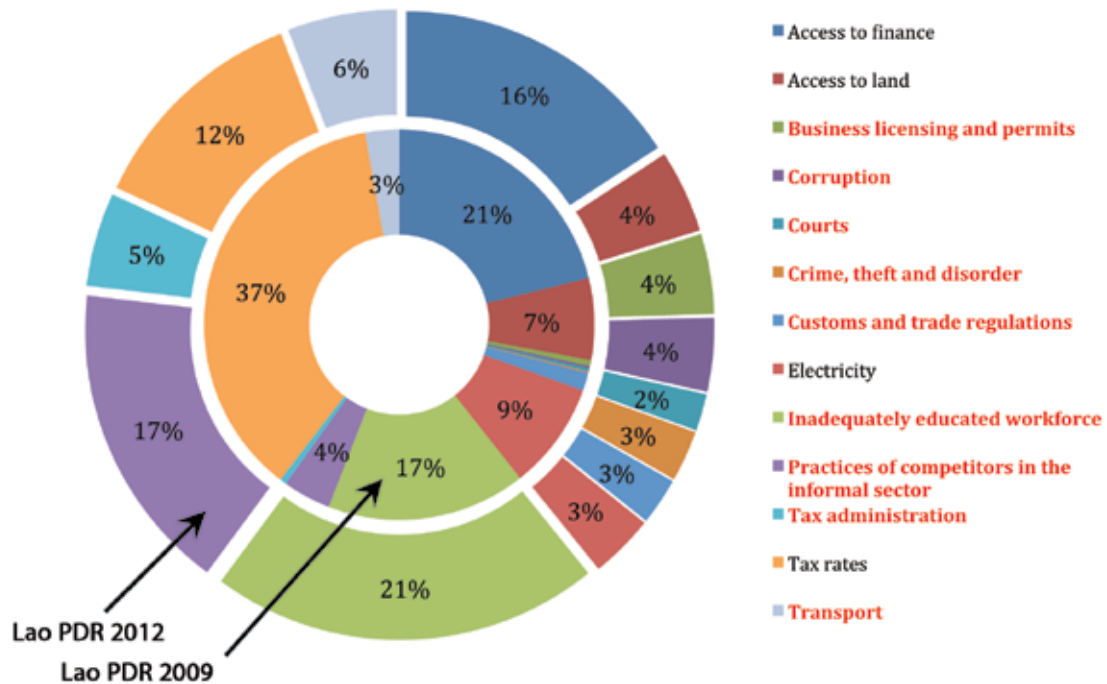
³⁹ Note that in contrast to the data on the Enterprise Survey website, we use all firms to compute average constraints in this chapter—not only the firms in the standard sectors. In subsequent chapters where cross-country comparisons are involved, only standard sectors shall be considered.

59. Two things stand out in this analysis. First, firms have very different views on what they view the number one investment climate constraint to be. In other countries it is not unusual for over 40 or 50 percent of firms to say that the top area is a serious constraint. For example, close to 60 percent of firms said that corruption and electricity were serious problems in the most recent Enterprise Survey for the Kyrgyz Republic. Similarly, about 51 percent of firms in Kazakhstan said that inadequately educated workers were a serious constraint. In this respect, Lao PDR appears similar to other countries in East Asia. For example, only about 15 percent of Vietnamese firm said that the largest constraint, access to finance, was a serious problem in the most recent Enterprise Survey for that country. Similarly, only about 15 percent of Indonesian firms said that the largest constraint, competition from informal firms, was a serious problem.

60. A second thing that stands out is that the differences between constraints are fairly modest. The difference in the shares of firms saying that the top (worker education) and fourth (electricity) constraints are serious problems is only about 3 percentage points. The difference between the first and fourth constraints in the Kyrgyz Republic Enterprise Survey was about 10. The differences between the top constraints are mostly statistically insignificant (see Annex 4), suggesting that it is difficult to use the data to clearly identify the top constraints. This suggests that although inadequately educated workers, corruption, crime, electricity, and tax rates all rank among the top constraints, it is not easy to identify a single constraint, or a couple of constraints, that would be considered the greatest obstacles. This also suggests that there are no easy fixes to improving the business enabling environment in Lao PDR, with the need for a broad-based approach reform.

61. In addition to being asked about how great an obstacle an issue was on a five-point scale, firms were also asked to rank the top three obstacles that they face. While the first measure (the rating) gives an idea about the breadth of concern—that is, it allows us to see how many firms saw that area of the investment climate as a serious problem,—the second (the ranking) gives some idea about the depth of concern. That is, for the ranking, the firm has to decide which constraint is the most binding. For the ratings, managers do not have to make the same decision—they can say that every problem—or none—was a ‘very serious’ constraint if they want to. One difference between the two measures is that it takes a smaller number of firms to make an obstacle stand out on the ‘rankings.’ Since firms can only rank one issue as their greatest concern, a relatively small number of firms could give a single issue prominence on this measure. For the ratings, since firms can rate many problems as 4s or 5s, these small-group issues would be unlikely to stand out. For example, if exporters only make up a relatively small part of the population and are particularly concerned about trade regulations or transportation, this area might appear as a minor problem on the first measure (i.e., only a small number of firms rated it as a major problem), but as a major problem on the second.

Figure 23: Inadequately educated workers and competition from informal firms ranked as the biggest constraints (percent of firms saying area is the biggest constraint)



Source: World Bank Enterprise Surveys

Note: The chart represents the shares of firms ranking each area as their “biggest” obstacle to growth. The areas highlighted in red are those that were identified by a larger share of firms in 2012 than in 2009. The outer ring shows the values for 2012 and the inner ring values for 2009.

62. Inadequately educated workers also ranks as the top constraint in Lao PDR by this second measure. 21 percent of managers said that inadequately educated workers were the biggest constraint that they faced (see Figure 23). Aggregating the two methods gives us greater confidence that inadequately educated workers are among the greatest obstacles to doing business in Lao PDR.

63. There are, however, some significant differences between the two measures of obstacles. Other than worker education, the top constraints based on the percent of firms that said that each area was the biggest constraint that they faced were competition from informal firms, access to finance, and tax rates. Other areas were ranked as the biggest constraint by less than 6 percent of firms in Lao PDR. This includes those that were ranked among the top constraints based on the percent of firms that said that each area was a serious obstacle (corruption, crime, electricity and trade and customs regulation). Similarly, competition with informal firms and access to finance did not rank among the top “serious” obstacles.

64. The two measures capture different aspects of firms’ constraints, and both have advantages and disadvantages. Although inconsistencies are widespread (see Annex 4), the differences observed between rankings of constraints depending on the measure used can be attributed to

differences in each measure's focus: While the "biggest" constraint will capture "deep" concerns that may affect a small subgroup of firms, "major and severe" obstacles will be more useful to identify areas that matter for a broad set of firms. Conversely, the former seems more appropriate for international comparisons: as it is not based on ratings and every firm must name their "biggest" constraints, it is less sensitive to cultural norms, political freedom and reference points—see Annex 4 for a more detailed discussion.

Changes in perceptions for different types of firms

65. An interesting question is whether there are systematic differences in perceptions about the investment climate among firms of different types. In this section, we focus on differences that appear to be statistically significant (i.e., not just due to sampling variation). Because samples tend to be small for subgroups of firms, it is possible that some apparent differences in perceptions between different groups are due to sampling variation rather than to actual differences. We discuss the econometric analysis that underlies the results in this section in Annex 5.

66. Large and Small Firms. For the most part, large and small firms appear to have similar perceptions about the investment climate in Lao PDR. There are, however, three exceptions to this.

67. First, large firms appear to be more concerned about electricity than small firms. Whereas only about 12 percent of small firms said that electricity was a serious problem, about 20 percent of large firms said the same.

68. Second, medium-sized and large firms appear to be more concerned about worker skills than small firms. This pattern is consistent across definitions of constraints ("biggest" vs. "major or severe").

69. Third, small firms are less likely to identify access to finance as their "biggest" impediment to growth. Although the signs are unchanged, this pattern is no longer significant when one uses "major or severe" constraints.

70. Exporters. Managers of exporting firms were more concerned about electricity, trade regulations and transportation than managers of non-exporting firms. This holds true even after controlling for other differences between exporters and non-exporters—see Annex 5.

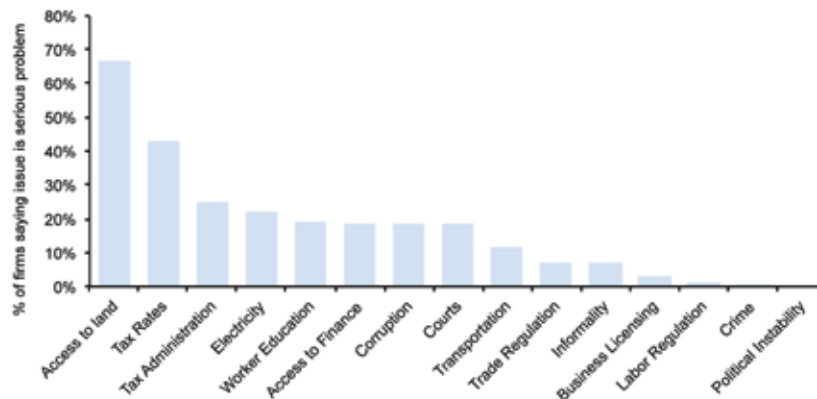
71. Foreign-owned firms. There were no significant differences in perceptions between managers of foreign and domestic firms after controlling for other differences between them. For example, although 30 percent of managers of foreign-owned firms said that worker skills were a serious problem, compared to only 16 percent of domestic firms, the difference was not statistically significant after controlling for other factors (e.g., firm size and age).

72. Manufacturing. Managers of manufacturing firms were more concerned about several areas of the investment climate than managers of non-manufacturing firms. Whereas about 20 percent of managers of manufacturing firms said that electricity was a serious problem, only about 13 percent of managers of service firms and 9 percent of managers of retail firms said the same. They were also more concerned about access to finance and taxes (both tax rates and tax administration) than other managers (see Annex 5).

Changes in perceptions over time

73. Managers in the 2009 and 2012 surveys had very different concerns. As discussed above, the areas of the investment climate that managers in the 2012 survey were most concerned about were inadequately educated workers, corruption, crime and electricity. In the 2009 survey, prevailing concerns were access to land,⁴⁰ tax rates, tax administration and electricity (see Figure 24).

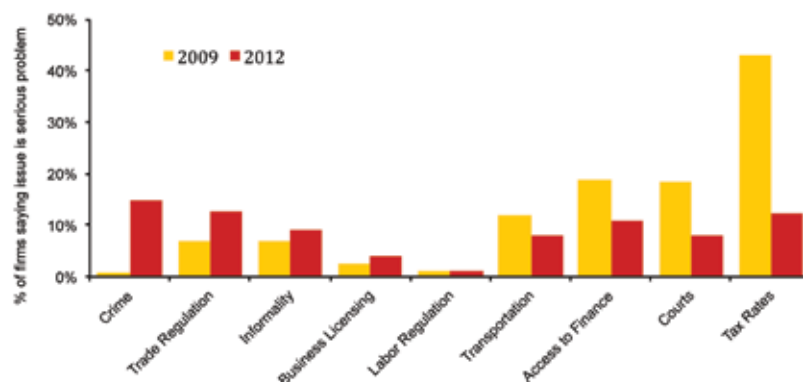
Figure 24: Land, taxes, worker education, power and access to finance are the areas of the investment climate that enterprise managers were most likely to say were serious concerns in 2009



Source: World Bank Enterprise Surveys

74. Changes in perceptions may account for differences in reported constraints between 2009 and 2012 but sampling variation as well as changes in industrial structure and sample characteristics also have a role to play. In Annex 5, we look at whether these differences are statistically significant after controlling for these differences. In practice, many of the differences do appear to be statistically significant. Although views about some areas such as inadequately educated workers, corruption, electricity and tax administration appear unchanged, perceptions about other areas have got worse after controlling for differences in the samples. In particular, firms were more likely to say that crime, informality and several areas of regulation (trade, labor and licensing) were serious obstacles in 2012. In contrast, firms were less likely to say that tax rates and the courts were problems in 2012 (see Figure 25).

Figure 25: Firms were more concerned about crime, informality and regulation in 2012 than in 2009



Source: World Bank Enterprise Surveys

⁴⁰ Firms in 2012 were not asked to rate access to land between “no obstacle” and “very severe” obstacle. However, access to land was still included in the list of constraints to be ranked as “biggest” impediment to growth.

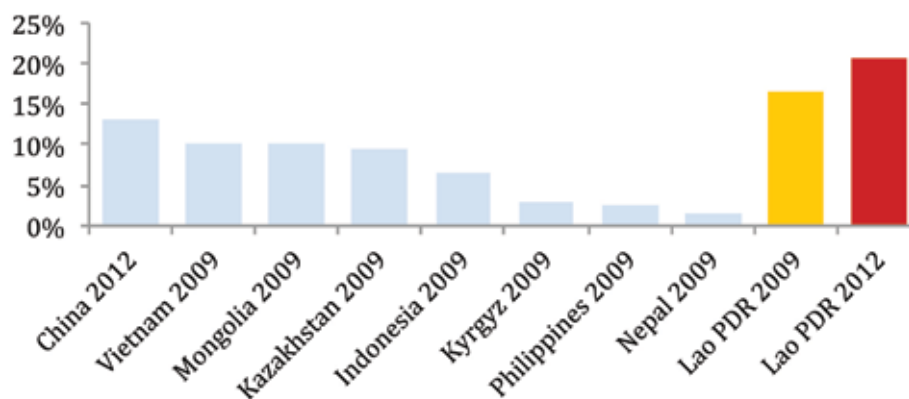
5. Looking at the top constraints in detail: skills



75. An “inadequately educated workforce” is the main obstacle to growth identified by Lao firms in 2012. In the 2009 Enterprise Survey, 17 percent of employers identified workers’ skills as the biggest constraint to their expansion. Despite this high proportion and the fact that all constraints reported by more than 4 percent of the interviewees in 2009 decreased in 2012, the skills constraint now ranks first, with 21 percent of firms reporting it as the most significant constraint to doing business (see Figure 26). As detailed in the previous chapter, the prevalence of the skills constraint can also be found in the ratings of obstacles by firms: an “inadequately educated workforce” is also the most cited “major or severe” constraint in the 2012 data for Lao PDR⁴¹.

76. Lao PDR stands out in Asia as the country where workers’ skills are criticized most. Roughly 10 percent of Vietnamese employers complained about the inadequacy of workers’ skills in 2009 as against 17 percent of their Lao counterparts (Figure 26). Although no Enterprise Surveys were carried out in most comparator countries in 2012, one can see that the share of Lao firms reporting low skills as their main constraint in 2012 is double that of Vietnam in 2009.

Figure 26: Lao employers are much more likely to complain about poor skills than in other Asian countries



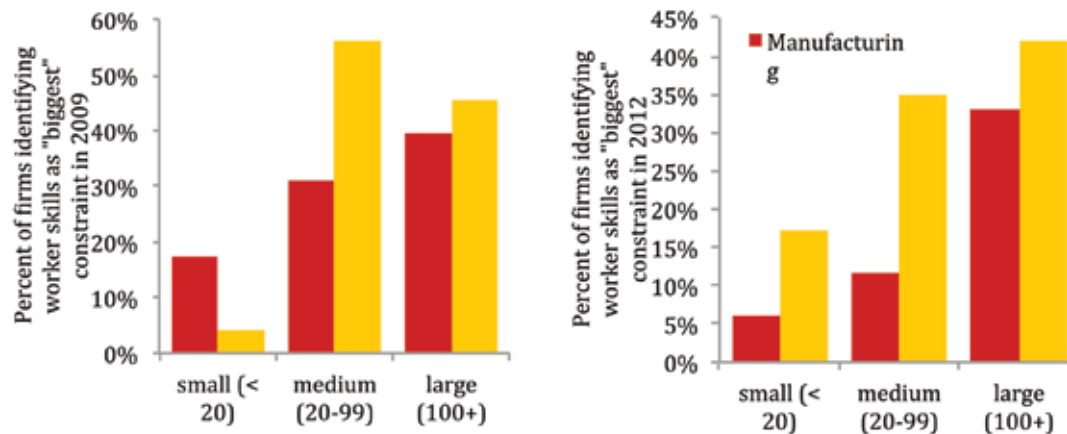
Source: World Bank Enterprise Surveys

77. In theoretical terms, there can be a shortage of skills because of demand- or supply-side constraints. Examples of the latter include a failure of the educational system to deliver the knowledge and abilities required by firms, poor information leading students to embark on training courses not valued by the private sector, limitations on the free movement of labor, etc. Conversely, if the skills that firms need exist and are available in the market, employers’ reporting an inadequately educated workforce might reflect their inability to attract highly skilled applicants, which is an indictment of firm level performance or other business environment related factors rather than skills supply: they cannot hire the skills they want while remaining profitable. This section shall proceed in three steps to shed light on the so-called skills constraint: first, it explores the profile of firms that report poor skills as an obstacle to productivity and growth; second, it delves into what employers mean by “inadequately educated” workers; and third, tentative elements are put forward to help disentangle supply- and demand-side determinants of the observed complaints about poor skills in Lao PDR.

⁴¹ In what follows, firms’ perceptions in Lao PDR shall be compared with Enterprise Survey data from other Asian countries. “Biggest” rather than “major or severe” constraints to growth seem more appropriate to this exercise as they should be less sensitive to cultural norms, political freedom and reference points. However, results yielded by the two measures shall be compared when necessary.

78. Large firms and the service sector in general seem more affected by “inadequate” skills (see Figure 27). On average slightly more than 35 percent of large firms report an inadequately educated workforce as their main obstacle to growth. In comparison 28 percent of medium-size and 15 percent of small firms expressed such a concern. Poor skills are regarded as a setback in all sectors but firms operating in services⁴² are more likely to mention them as a “major or very severe” or the “biggest” obstacle, both in 2009 and 2012 (see Table 11 and Table 13 in Annex 5). To complete the profile of skills-constrained firms, Figure 28 displays the shares of employers reporting skills as their biggest constraint by ownership and exporting status. The ranking for exporting and non-exporting firms changed between 2009 and 2012, blurring the correlation between export-orientation and the skills constraint.

Figure 27: Large and service sector firms are more likely to complain about inadequate skills, both in 2009 and 2012



Source: World Bank Enterprise Surveys

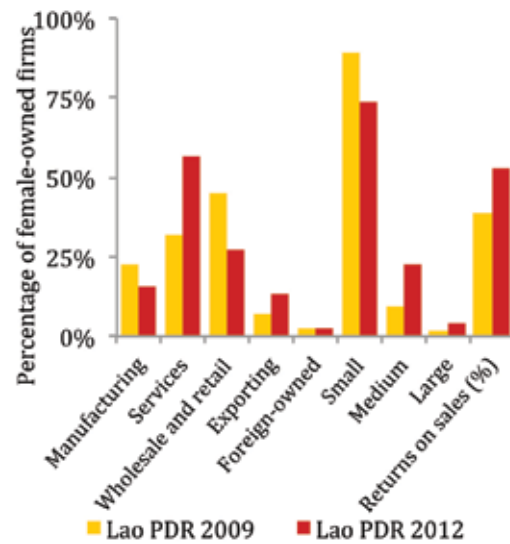
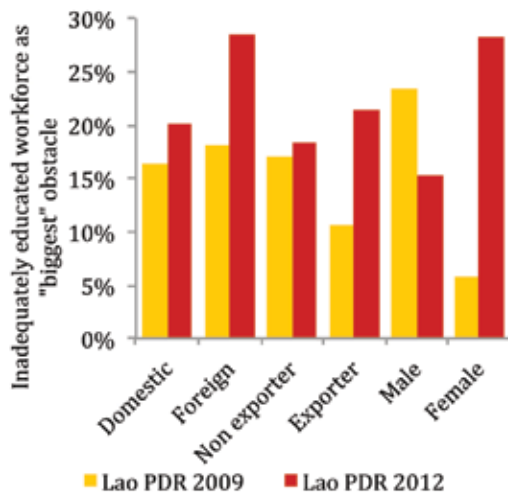
79. Foreign-owned firms seem to complain much more than domestic employers about poor skills, and the share of skills-constrained foreign firms has increased by a third between 2009 and 2012. However, although the difference between foreign and domestic firms is large, we cannot reject the hypothesis that it is due to sampling variation. This is probably due to the small number of foreign-owned firms in the sample. Finally, male-owned enterprises were much more likely than firms whose owners include at least one woman to report an “inadequately educated work-

⁴² By “services” we are referring to the non-manufacturing sector, including wholesale and retail trade and services firms.

force” as the main constraint to business growth in 2009, whereas the proportions were reversed in 2012 after a dramatic 22 percentage-point increase in the latter. Reasons for this are to be found in the significant changes in the profiles of female-owned enterprises that occurred between 2009 and 2012: they grew larger, concentrated further in services and became more profitable, with a return on sales of 53 percent on average as against 36 percent for male-owned firms in 2012—see Figure 29. Subsequently, regressing a dummy variable for skills as biggest constraint on an indicator for female ownership does not yield a significant coefficient when firm size and sectors are controlled for (not displayed). Interpreting information on the profile of skills-constrained firms is not sufficient to help determine why Lao employers consider workers’ skills a hindrance to growth. For instance, we might expect larger firms to have the depth of resources and networks to hire highly skilled employees. But on the other hand they might be more likely to introduce new technologies, which few workers might master in the domestic labor market.

Figure 28: Foreign-owned firms report skills as biggest constraint more often than domestic ones; the picture is less clear-cut for exporting establishments and those that have female owners

Figure 29: Female-owned firms’ profiles changed between 2009 and 2012



Source: World Bank Enterprise Surveys

Note: In Figure 29, each bar represents the percentage of female-owned firms that fall into the corresponding category. For instance, the figure shows that in 2012, 14 percent of the female-owned firms exported some of their production.

Figure 30: Percentage of firms that had attempted to recruit in the previous 12 months, by position



Figure 31: Lack of skills is the main problem encountered by firms attempting to recruit



Source: World Bank Enterprise Surveys and STEP Employer Survey 2012

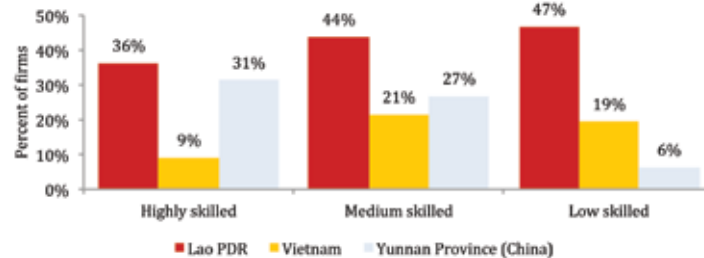
80. Employers who view poor skills as an impediment to business expansion also report recruitment difficulties. The STEP Employer Survey⁴³ carried out in Lao PDR in 2012 asked employers whether they encountered problems for hiring positions in the past twelve months, and 38 percent of firms in the Enterprise Survey sample reported that they had attempted to hire workers and applicants lacked the required skills. Figure 30 presents the percentage of firms that attempted to hire workers in the twelve months preceding the interview, disaggregated by positions, and Figure 31 shows that applicants' lack of skills is the main problem encountered by employers when attempting to fill a position. This holds across the board—i.e. for manager positions as well as elementary jobs⁴⁴. Now, 41 percent of those who did not encounter such a problem complained about an inadequately educated workforce, as against 59 percent of those who did face insufficiently qualified applicants (see Figure 32). This is evidence of a strong correlation between subjective and objective measures of skills constraints.

81. Firms in Lao stand out from firms in neighboring countries in one important area: they are far more likely to complain that not enough workers are applying for jobs, even the low-skilled jobs. As shown in Figure 32, nearly half of firms in Lao PDR indicated that they had no or few applicants to a low-skilled job, a much larger proportion than in Yunnan province (China) and Vietnam. In a country, with 70 percent of the workforce employed in low productivity farming, it is puzzling that “modern” firms do not have applicants, even for unskilled jobs. The World Bank's Lao PDR Development Report 2014 argues that this phenomenon is an example of the types of underlying structural problems described above in chapters 1 and 2. More specifically, the report argues that a key problem is that the jobs on offer are not sufficiently attractive, in terms of the wages and working conditions being offered, to attract migrants out of subsistence agriculture.

⁴³ Additional skills and employment related questions asked to firms as part of an expanded labor module in the Enterprise Survey.

⁴⁴ The only exception is “Professionals”, for which applicants expecting wages higher than the firm could offer is the main problem encountered. However, the mean is not statistically significantly different from that of lack of skills.

Figure 32: Percentage of firms in Lao PDR, Vietnam, and Yunnan province (China) complaining that there were no or few applicants to a job, by skill level

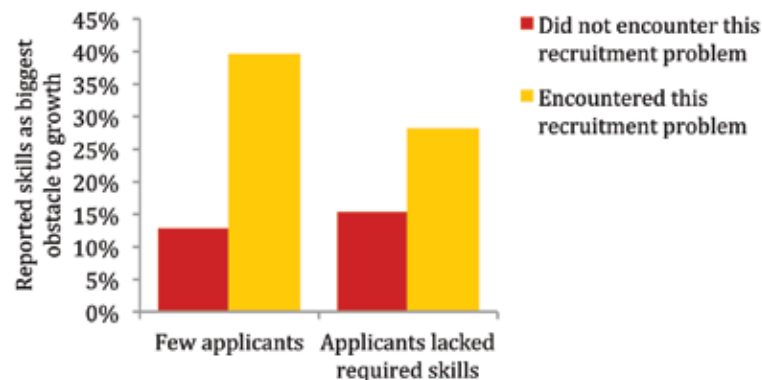


Source: World Bank Enterprise Surveys and STEP Employer Survey 2012

82. Skills-constrained firms seem to suffer from both a skills gap and occupational shortages.

An interesting insight from Figure 31 is that many managers report that few people applied for the positions, which Figure 32 shows is related to complaints about skills. Skills shortages can be decomposed into a “skills gap” and “occupational shortages”. The former captures the idea that workers’ skills in a broad sense are wanting; as a consequence, although vacancies might attract many applicants, employers have trouble finding the skills they need. Conversely, the latter means that many workers have adequate diplomas but not the job-specific skills required by the firms, which is expected to translate into managers’ reporting that few applicants showed up to fill positions.

Figure 33: Employers who encounter recruitment problems because of poor skills and few applicants are more likely to cite an “inadequately educated workforce” as biggest obstacle to growth



Source: World Bank Enterprise Surveys and STEP Employer Survey 2012

Note: The red (blue) bars represent the proportion of firms that attempted to fill positions in the twelve months preceding the survey and did (not) encounter the specified problem, i.e. few applicants or applicants who lacked the required skills, and identified an “inadequately educated workforce” as their biggest constraint.

83. Firms that identify skills as their biggest concern express negative views of the Lao educational system. The STEP Employer Survey enquired about whether employers think technical and vocational education and training institutions (TVETs) and non-vocational higher education in Lao PDR produce enough of the skills they need. Answers were disaggregated into self-discipline, practical skills, and up-to-date knowledge of methods, materials and technology; and distinguished “kinds” and “levels” of skills. Figure 33 shows that the employers who bemoan low skills are more likely to find fault with TVETs on any of those different aspects of skills. Similar results are obtained for non-vocational higher education (not displayed). It is worth noting at this stage that Figure 33 is not necessarily evidence that Lao TVETs fail to deliver the skills firms need; it supports instead the view that employers who report skills as their biggest constraint would be likely to blame it at least partly on the supply side and that the skills constraint elicited by firms is consistent with employers’ views on the Lao labor market.

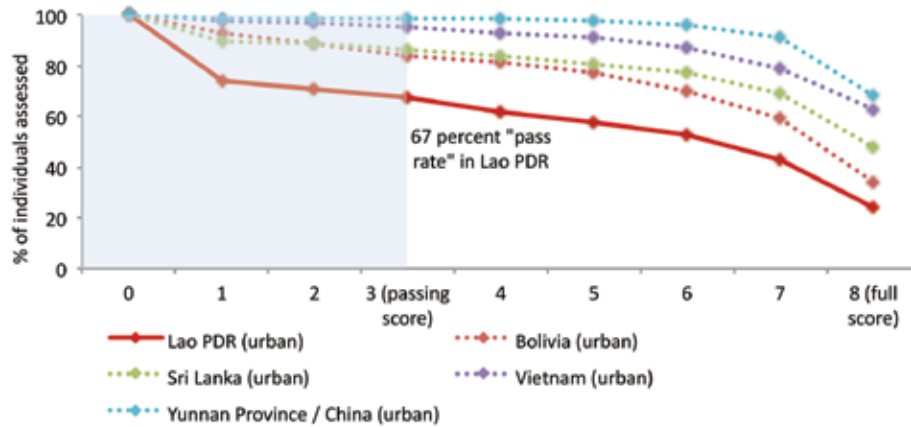
Figure 34: Reports of skills constraints correspond to employers’ dissatisfaction with Lao technical and vocational training institutions



Source: World Bank Enterprise Surveys and STEP Employer Survey 2012

84. There is some evidence that firms identifying poor skills as their biggest constraint are more likely to engage in training. Out of the 379 firms surveyed in Lao PDR in 2012, 172 had already been interviewed in 2009, providing a panel dimension that allows us to study dynamics in greater detail. This enables us to look at the effect of changes in firms’ perceptions of skills as a constraint on the likelihood of having had formal training programs for permanent, full-time employees in the last complete fiscal year. Now, firms that switched from not reporting skills as a constraint to complaining about it are 15 percent⁴⁵ more likely to have engaged in training in the last fiscal year when one considers skills shortage as “biggest” constraint. However, using skills as a “major or severe” constraint shows no significant reaction on the part of firms. See Box 3 on the benefits of training and potential progress in this area.

⁴⁵ This is significant at the 90 percent confidence level. The figure was obtained from a fixed-effect regression of a dummy for training on the skills constraint dummy, controlling for year, sector, firm size and region (not displayed).

Figure 35: Lao adults score poorly on basic literacy tests, lagging behind comparator countries

Source: STEP 2012

Note: Chart indicates the percentage of assessed individuals receiving at least a score of between 0 (minimum) and 8 (maximum). Only urban data are used. The vertical blue shaded area indicates that interviewees who obtained less than 3 on the test are considered to have failed and are unable to master basic reading skills.

85. Results on standardized test scores lend support to the idea of a skills shortage among the Lao labor force. Employers' mentioning inadequate skills as their biggest business obstacle might originate from an inadequate education offer: an institutional assessment of education and training providers revealed that the "development of curricula and teaching material seems to be somewhat disconnected from the needs of the students, the labor market and with little input from the private sector"⁴⁶. Moreover, the quantity of schooling may be increasing but quality remains a concern. The student per teacher ratio in Lao PDR is considerably higher than the ones observed across the region and other developing countries⁴⁷ and STEP scores on standardized reading tests suggest that Lao citizens do not perform as well as their counterparts in comparator countries for which data is available (Bolivia, China, Sri Lanka and Vietnam), as 67 percent of the Lao respondents do not seem to master basic reading skills (Figure 35). Furthermore, new research on skills and labor markets in Lao PDR emphasizes for different measures of skills that employers tend not to trust their employees to use the skills they seek in them: "Despite employers in Lao wanting their workers to have higher levels of literacy, numeracy and non-cognitive skills, about 20 percent of males and 30 percent of females in highly skilled occupations are seldom asked (or trusted) to use literacy skills in their jobs"⁴⁸. This may be interpreted as evidence of insufficient adequacy between firms' needs and skills supply in Lao PDR.⁴⁹

⁴⁶ World Bank (2013b).

⁴⁷ World Bank (2011).

⁴⁸ World Bank (forthcoming).

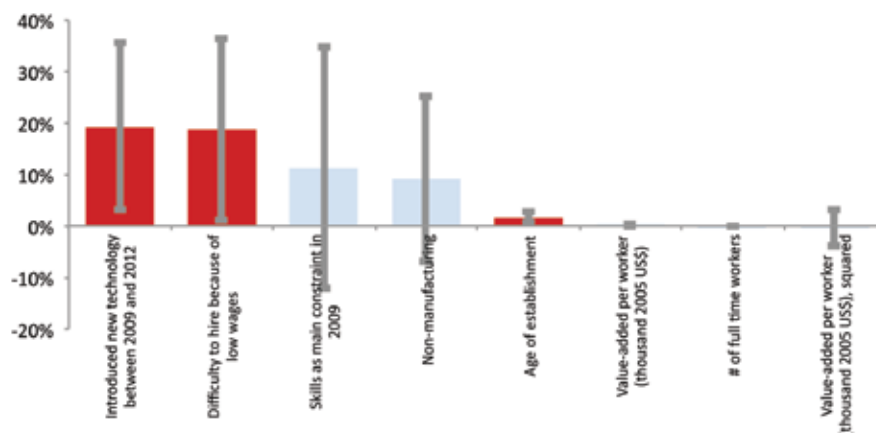
⁴⁹ A competing interpretation pertains to managing culture: Perhaps employees are adequately skilled but employers nevertheless prefer performing skill-intensive tasks themselves.

86. Supply-side shortcomings and firms' failure to attract qualified workers both play a role in explaining the emergence of the skills constraint in the Lao Enterprise Surveys. Thanks to the panel dimension of the Enterprise Survey data for Lao PDR, a variable equal to one when the employer identified poor skills as the firm's biggest constraint in 2012—and equal to zero otherwise—was regressed on proxies for labor market failure to provide adequate skills and for firms' failure to attract them, along with controls. The resulting coefficients (bars) and confidence intervals (whiskers) are displayed in Figure 36. Red bars show coefficients that are significant at the 95 percent or a higher confidence level; those that are not statistically significant at any conventional level are in blue.

87. First, firms that introduced a new technology between 2009 and 2012 are 22 percent more likely to report skills as the biggest impediment to their development. This strongly suggests a weakness in the supply of skills—be it because the educational system is not reactive to changes in firms' technological requirements or because the domestic pool of skilled labor is insufficiently complemented by labor imports⁵⁰.

88. Second, firms reporting that recruitment in the past year with applicants expecting higher wages than the firm could offer, are 17 percent more likely to complain about the adequacy of skills.⁵¹ This lends support to the “lack of attractiveness” rationale for the observed skills constraint. In aggregate these two determinants of employers' reporting skills as their biggest constraint are equally important—they all exhibit coefficients that are statistically different from zero, but not from one another.

Figure 36: The skills constraint originates from both a deficient supply of skills and firms' difficulty in attracting and remunerating qualified applicants



Source: World Bank Enterprise Surveys

Note: This graph reports the coefficients (bars) from the regression of an indicator variable for whether the employer identified inadequate skills as biggest constraint in 2012 on the explanatory variables displayed on the horizontal axis. All variables are measured in 2012 except for the lagged dependent variable, which refers to the perception of the same firm in 2009. Therefore, only panel firms can be used. The specification further includes regional dummies that are left out of the graph for clarity. Robust standard errors are used. The whiskers represent the 95 percent confidence intervals. Red (blue) bars indicate coefficients (in)significant at the 95 percent level. The weights computed for the 2012 sample are used.

⁵⁰ Controlling for training—which does not enter the regression significantly—does not alter the results.

⁵¹ This interpretation assumes that on average applicants' expectations are not unrealistic, i.e. they would be able to find a similar position at the wage they expect in another firm.

Box 3: Managing skills mismatches in the Lao garment industry

While the Lao garment industry may be small by international standards, with some 25,000 workers it represents the largest manufacturing sector in the country. Labor productivity is critical for the Lao garments manufacturing industry to remain competitive. All other inputs are imported and thus labor is the only factor that the industry requires locally. On average, this represents less than 20 percent of garment production costs. While real wages in Lao PDR continue to rise, labor productivity remains low in most industries including the garment sector. This has made it increasingly difficult to attract workers into the sector and the Lao garments industry is a rare example among developing countries where lack of even unskilled labor is a constraint⁵². In addition, despite preferential access to the EU and US markets, the Lao garment industry struggles to compete with suppliers in Cambodia, Vietnam and Bangladesh where labor costs are comparable, but transport and infrastructural costs are lower and larger industries are able to benefit from economies of scale. Efforts to improve skills through public vocational training centers have been disappointing, and with an estimated 3-5 percent of workers leaving the industry every month the industry is at risk of becoming stuck in a low-wage, low-productivity trap.

However, in adversity some Lao garments firms have managed to find productive niche markets. These have included supplying smaller market segments to reflect limited ability to fulfil bulk orders, and focusing on products (such as industrial work wear and children's clothing) that are less time sensitive than the more demanding segments of "fast fashion" and offer higher returns. Similarly, more mature and larger garment firms in Lao PDR have also recognized the need to invest in better technology, productivity monitoring systems and human resources management. Some firms have invested in improved workforce skills training services provided by the Garment Skills Development Centre, established in 2011 by the Association of the Lao Garment Industry with the support of the Ministry of Industry and Commerce and other stakeholders. The center engages with the industry via a demand-driven and fee-based approach to delivering training. Results have shown a direct link between line-level productivity and short-course training provided to workers on basic line management skills, industrial engineering and motivation. However, with a challenging external environment, only a small number of garments firms are willing to invest in workforce training.

In addition, firms have also found that the costs of training provided to employees cannot be treated by the tax authorities as a taxable expense, and even that training has at times been classified as a benefit-in-kind, increasing the amount of income tax that employees are required to pay.

⁵² See Record, Kuttner and Phouxay (2014) for more detail on labor standards related constraints in the Lao garments manufacturing sector.

6. Looking at the top constraints in detail: access to finance



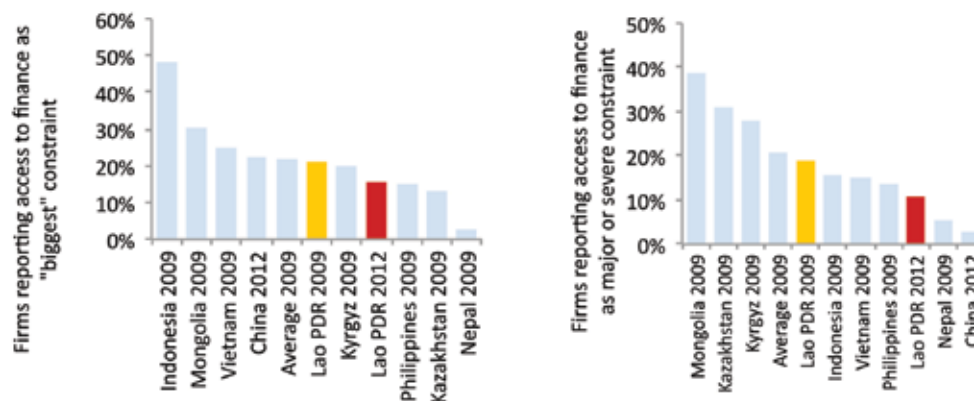
89. Access to finance was the next most cited constraint to growth in the 2012 Lao Enterprise Survey. It ranked as the second most cited constraint in 2009. 15.2 percent of firms—down from 21.3 percent—identified it as the biggest constraint to their businesses’ growth in 2012. Thus, access to finance remains a major issue in firms’ perceptions of the investment climate in Lao PDR.

90. This section will focus on whether Lao PDR stands out in terms of financial constraints compared to other countries, and on the profile of financially constrained firms This is meant to shed light on what it means to be financially constrained in Lao PDR. In effect, there might be a gap between firms’ perceptions and the actual investment climate insofar as respondents may have a tendency to blame difficulties in obtaining external financing on the financial sector rather than on the non-viability or high risk-adjusted returns of their own investment projects. As a consequence, access to and use of finance may be difficult to disentangle.

91. Lao firms do not seem to complain more about access to finance than other firms in the region. Figure 37 shows that although access to finance ranks high in firms’ perceptions of obstacles to growth, firms complaining about it do not make up an especially large share of formal enterprises in Lao PDR, by regional standards.

92. Evidence suggests a decrease in the prevalence of access to finance as a constraint to Lao firms. Although it remains among the top concerns of Lao firms, fewer identify access to finance as their biggest constraint (see Table 16)⁵³. Looking at the share of firms that identified access to finance as their “major or severe” constraint (Figure 37, right panel), we see that it was close to the regional average in 2009 but that Lao PDR would now stand among the Asian countries least affected by the problem—or at least the perceived problem—of access to finance⁵⁴. This raises the following question: has the business enabling environment changed or have firms’ perceptions evolved?

Figure 37: Firms in Lao PDR do not complain more about access to finance than in other Asian countries



Source: World Bank Enterprise Surveys

Note: “Average 2009” denotes the average share of firms reporting access to finance as a constraint among the comparators displayed in the Figure, i.e. the Asian countries for which we have data for 2009.

⁵³ It should be noted that the sample of the Enterprise Survey is registered/formal firms, in manufacturing and services, located in urban centers across six provinces of Lao PDR.

⁵⁴ However, evidence on the significance of the decrease in the share of firms identifying access to finance as a constraint is mixed: Pooled cross-section regressions (Table 14 and Table 16) display a negative but insignificant time dummy; on the other hand, the dummy becomes significant when panel firms only are retained and fixed effects are used.

93. The *Doing Business* reports consistently emphasize the difficulty of getting credit in Lao PDR⁵⁵.

Key indicators used to construct a ranking for “getting credit” include measurements relating to the legal rights of borrowers and lenders in collateral and bankruptcy laws as well as the availability of credit information systems. According to *Doing Business* Lao PDR lags behind comparators in terms of the credit environment for business, ranking 167th out of the 185 countries covered in 2013. Lao PDR scores second lowest (after Indonesia) in the region on the strength of legal rights index; and the scope and accessibility of information on credit worthiness is the lowest in the region, with 0 percent of the adult population covered by public registry or private credit bureaus, compared to 37.8 percent in Vietnam and 12.1 percent in Cambodia.

94. However, domestic credit has increased dramatically since 2009 in Lao PDR.

While domestic credit provided by the banking sector as a share of GDP in Lao PDR is still among the lowest among comparators, at 26.5 percent in 2010 (compared to 30.0 percent for Mongolia (the second lowest) and 135.8 percent for Vietnam (the highest)), it has been growing at a torrid pace. Lao PDR has experienced a 194-percent increase in that share between 2000 and 2010, with most of the upswing occurring after the period of reference for the previous Investment Climate Assessment (the 2009 Enterprise Survey). Increased credit supply almost certainly plays a large role in explaining why fewer firms felt constrained by access to finance in 2012 than in 2009.

95. In terms of the share of firms with bank loans, Lao PDR also seems to be moving towards the regional average.

In 2009, Lao PDR exhibited one of the lowest shares of firms having a bank loan in the region⁵⁶. This share experienced a 65-percent increase between 2009 and 2012, placing Lao PDR closer to the 2009 regional average—see Figure 38 (right panel). Conversely, there has been a slight decline in the share of firms with a bank account in Lao PDR (left panel). Reasons for this are unclear but the small change should not be overinterpreted. Evidence on bank loans strongly suggests that financial constraints are weakening in Lao PDR.

Figure 38: Lao PDR is moving towards to the regional average in terms of the shares of firms with bank loans and bank accounts



Source: World Bank Enterprise Surveys

⁵⁵ The *Doing Business* reports explore “how easy or difficult it is for a local entrepreneur to open and run a small to medium-size business when complying with relevant regulations” and apply a standard methodology in order to draw comparisons across countries. See World Bank (2013a) for more detail.

⁵⁶ Either with a domestic or foreign bank.

96. Similarly, progress can be seen in the rising share of firms that applied for loans and that enjoy external financing for investment (see Figure 39). While Lao PDR displayed the lowest share of firms that purchased fixed assets in the year prior to the survey and applied for loans (left panel) and the lowest share of firms with external financing in the region (right panel) in 2009, these shares increased by more than 500 and 300 percent, respectively, between the last two Enterprise Surveys. This impressive increase confirms the other pieces of evidence presented above: Lao firms are more likely to apply for loans and obtain external financing for investment, showing that they are less financially constrained in 2012 than in 2009.

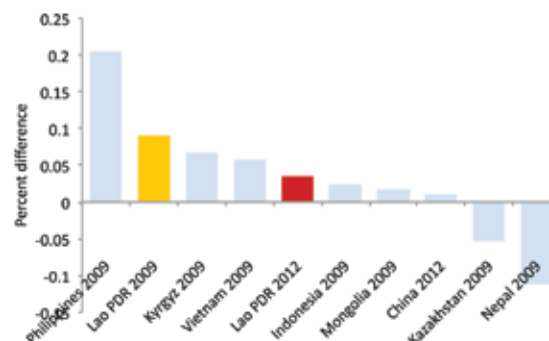
Figure 39: A much higher share of Lao firms uses external financing for investment in 2012 than in 2009



Source: World Bank Enterprise Surveys

97. According to all access to finance indicators, female-owned firms perform equally well or better than others. A noteworthy feature of the Lao credit environment is its lack of discrimination against female-owned enterprises. Similar shares of male- and female-owned firms had a bank account, enjoyed external financing for investment, had purchased fixed assets and applied for loans for investment (see Figure 40)⁵⁷. As far as bank loans are concerned, 27 percent (30 percent) of female-owned enterprises had one in 2009 (2012) as against 15 percent (24 percent) for their male-owned counterparts.

Figure 40: Lao PDR stands out in the region with women-owned businesses more likely to have access to bank loans than businesses owned by men



Source: World Bank Enterprise Surveys

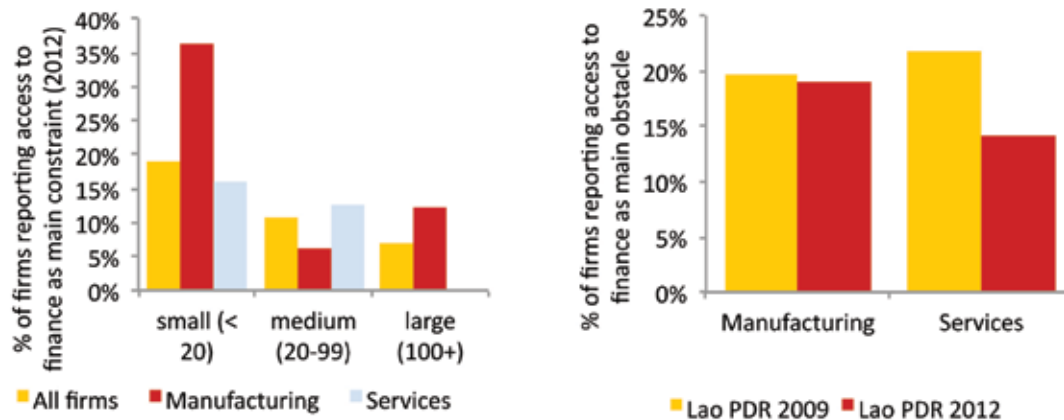
Note: The vertical axis represents the difference between the share of female- and male-owned enterprises that had a bank loan at the time of the survey. A positive figure means that a larger proportion of female- than male-owned enterprises had a bank loan.

⁵⁷ The results presented in this figure should be considered with caution as none of the percent differences is statistically significantly different from 0. This could be due to noisy data, as large standard errors suggest.

98. Small firms and enterprises in the manufacturing sector seem to complain more about access to finance.

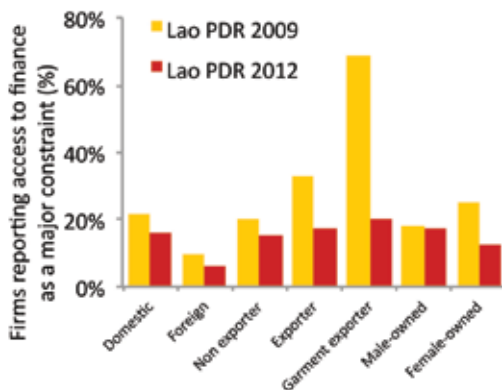
Figure 41 (left panel) indicates that small firms are more likely to cite access to finance as the main constraint to their expansion. This is true in general, but also when the sample is disaggregated into manufacturing and non-manufacturing enterprises. Among small firms, those that belong in the manufacturing sector seem to suffer much more from financial constraints as 38.3 percent of them report a lack of or poor access to finance as the most important challenge to their business operations—see also Annex 5.

Figure 41: Small and manufacturing firms complain more about access to finance in Lao PDR



Source: World Bank Enterprise Surveys

Figure 42: Exporters—and garment exporters in particular—report large improvements in access to finance



Source: World Bank Enterprise Surveys

Figure 43: Lao firms that do not have a loan are more likely to report access to finance as their biggest constraint



99. Access to finance is much less of a concern in 2012 than in 2009 for services and exporting firms (see Figure 41, right panel). When one looks at the evolution of the share of complaining firms, one sees that although manufacturing firms' perceptions remain roughly unaltered, but enterprises operating in the non-manufacturing sector report access to finance as being less of a problem in 2012 than in 2009. Figure 42 then shows that exporters used to be much more affected than non-exporters but the respective shares of firms identifying access to finance as their biggest constraint are almost the same in 2012. Garment exporters provide an interesting case: 69 percent of them reported access to finance as their biggest constraint in 2009 as against 20 percent in 2012, which represents a 71-percent decrease. A further noteworthy finding is that foreign-owned firms are less likely to complain about access to finance. This is expected insofar as foreign firms tend to be larger, which suggests a higher capacity to self-finance, and are more often operating as a subsidiary of a larger firm based abroad, which facilitates access to finance. Finally, the ranking of male- and female-owned firms was reversed between 2009 and 2012, mostly because the share of female-owned firms complaining about access to finance was halved in that period. This may be due to female-owned enterprises growing larger and moving further away from the manufacturing sector—see Figure 29—rather than to any gender specific changes in credit constraints.

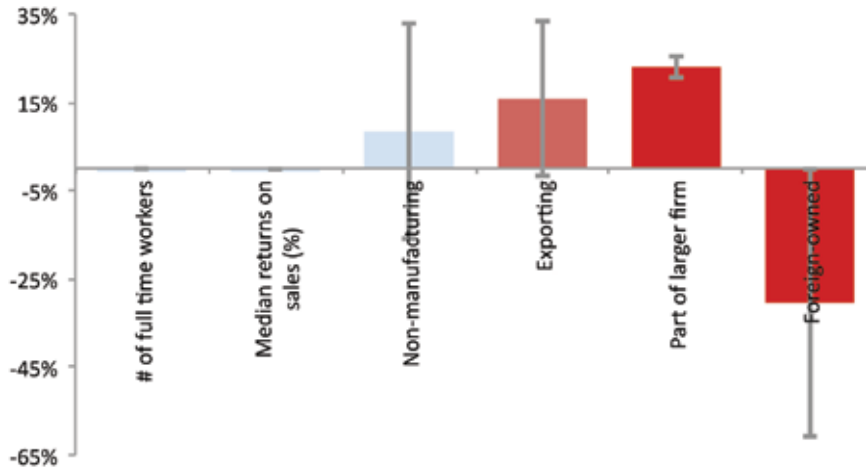
100. The data suggest a financial sector that is not intermediating properly, and almost certainly struggling to find accurate financial reports upon which to base credit decisions. In theory, if reports of access to finance as an obstacle to business expansion really capture financial constraints rather than firms' having unviable projects, the most profitable firms should be less likely to complain about it as banks should be more willing to grant them the loans they need⁵⁸. Using the panel dimension of the Lao Enterprise Survey, i.e. focusing on the 171 firms that were surveyed both in 2009 and 2012, in order to net out biases due to firms' time-invariant characteristics, there is evidence that profitability does not explain the probability that an enterprise reports access to finance as its biggest constraint (Figure 44)⁵⁹. This result in turn points towards shortcomings in the financial sector, which does not seem to be intermediating properly in Lao PDR, leaving profitable firms without adequate financing and/or supplying credit to unviable projects. The regression illustrated by Figure 44 also includes proxies for firm level access to finance. Whereas the foreign-ownership dummy exhibits the expected negative sign, i.e. foreign-owned firms are less likely to feel financially constrained, the surveyed establishments that are branches of larger firms appear more likely to complain about access to finance; reasons for this are unclear⁶⁰. Evidence from Figure 44 resonates with the Doing Business findings: because of poor protection of lenders and little information available on loan applicants' creditworthiness, financial institutions might not be able to accommodate the most profitable firms and focus instead on safe loans, for instance on firms whose collateral could be more easily foreclosed on.

⁵⁸ This argument implies that an absence of relationship between profitability and whether firms report financial constraints would be evidence either of imperfect information, i.e. banks cannot tell which projects are viable and which firms creditworthy, or of anything that might hinder lending or borrowing, such as a poor regulatory environment.

⁵⁹ Note that the statistical insignificance of the profitability proxy (returns on sales) seems driven by a low point estimate rather than a large standard error.

⁶⁰ The insignificant coefficient on the "non-manufacturing" indicator variable does not contradict the findings of Figure 40. In effect, Figure 43 is based on a fixed-effects regression, which means that only variations over time within each firm are taken into account. The "non-manufacturing" dummy in Figure 43 thus controls for changes of firms from manufacturing to services between 2009 and 2012, which happened in few cases. When the same regression is estimated thanks to Ordinary Least Squares, the "non-manufacturing" dummy exhibits the expected significant and negative coefficient.

Figure 44: The financial sector does not seem to be intermediating properly in Lao PDR, with limited evidence to suggest that firms with more creditworthy investments enjoy improved access to finance



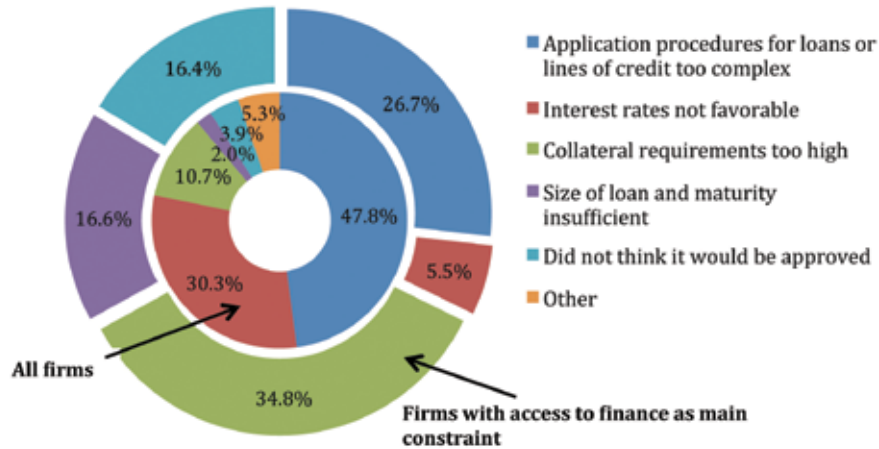
Source: World Bank Enterprise Surveys

Note: Figure 44 displays coefficients from a fixed-effects regression, using panel firms. Blue bars represent coefficients that are statistically insignificant, even at the 10 percent level; bright (dull) red ones denote coefficients significant at the 5 percent (10 percent) level. Whiskers illustrate the 95 percent confidence interval. The regressand is an indicator variable for whether the firm reported access to finance as biggest constraint in a given year (2009 or 2012). On the right-hand side, time-varying variables are used. This means that the coefficient on the foreign ownership dummy, for instance, must be interpreted as the effect of a change in ownership from mostly domestic in 2009 to mostly foreign in 2012. Controls for locality, year of the survey, the number of full-time workers and the percentage of the firm owned by the government were introduced but are not displayed.

101. Comparing the whole sample with respondents who identified access to finance as their biggest business constraint further confirms that they are actually financially constrained. Lao firms that do not have a loan are more likely to complain about access to finance being the biggest obstacle to their growth (Figure 43). This holds true both in 2009 and in 2012 and confirms that firms' complaints about access to finance are correlated with actual financial constraints. Figure 45 displays the reasons put forward by firms for not having applied for a line of credit or loan in the last complete fiscal year, both for all firms in Lao PDR and for those that report access to finance as the biggest obstacle. Interestingly, the latter group exhibits very different responses. First, they are half as likely to cite the complexity of application procedures. Second, they are much more inclined to mention high collateral requirements and inadequate loan size and maturity as reasons why they did not apply for a loan. Conversely, only 5.9 percent of them, as against 29.6 percent of the whole sample, complain about the level of interest rates. This supports the idea that firms that report access to finance as the biggest impediment to business expansion do suffer from shortcomings in the financial sector. In effect, if a project is expected to yield high returns, the entrepreneur should not be put off by high interest rates; however, collateral requirements can represent a binding constraint for a small firm with few assets. Insufficient loan size and maturity also pertain to loan contracts offered by financial institutions rather than to the viability of firms' projects, and should thus capture actual credit constraints⁶¹. This reinforces evidence from Figure 44 of a lack of correlation between firm performance and reported financial constraints, i.e. that even profitable firms have trouble accessing formal financing.

⁶¹ Moreover, the fact that firms reporting financial constraints are more likely to "think [their loan applications] would not be approved" might point in the same direction. However, this piece of evidence is less clear-cut insofar as firms with unviable projects and those put off by stringent borrowing requirements might equally choose to opt out of formal financing solutions.

Figure 45: Firms that complain about access to finance are more likely to complain about high collateral requirements than unfavorable interest rates



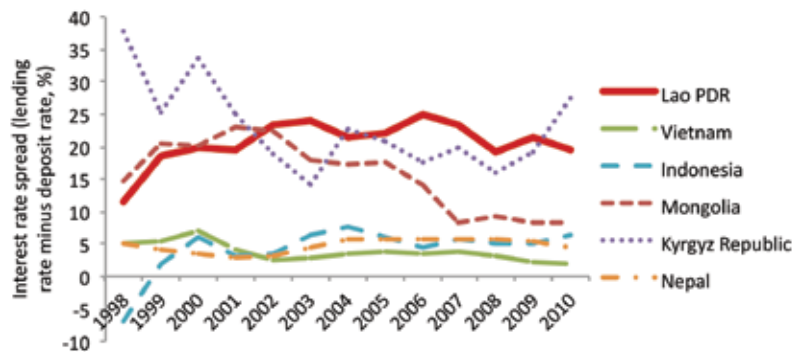
Source: World Bank Enterprise Surveys

Note: Figure 44 displays the reasons cited by firms for not having applied for a line of credit of loan in the last year. The inner ring shows results for all firms, the outer ring for firms that indicated access to finance as being the main constraint to expansion of the business.

102. Finally, macroeconomic data also hints at inefficient financial intermediation in Lao PDR.

The aggregate spread between the lending interest rate and the deposit rate has been consistently high in Lao PDR over recent years (Figure 46). The margin between the cost of mobilizing liabilities and the earnings on assets provides us with a measure of the financial sector’s efficiency in intermediation. A narrow spread means low transaction costs, which reduces the cost of funds for investment. Over the period 1998-2010 Lao PDR exhibited some of the highest interest rate spreads among comparator economies, even during a period where there was massive expansion in the supply of credit and in the number of financial institutions operating in the country.

Figure 46: Persistent wide interest spreads in Lao PDR suggest inefficient financial intermediation



Source: World Development Indicators

7. Looking at the top constraints in details:
regulatory compliance (including tax,
licensing and customs/border
management)



103. An important aspect of the investment climate is the rules and regulations that apply to businesses, and the costs incurred to abide by them. The World Bank Enterprise Surveys and Doing Business data provide detailed information on taxes and mandatory contributions, business licensing and applications for permits, as well as the time and money that firms have to invest towards the cost of regulatory compliance. This enables us to study the double aspect of regulatory compliance: direct compliance costs, such as mandatory payments and procedural requirements (e.g. licensing and registration) as well as indirect costs including time spent complying with rules, finding out which regulations are in force and dealing with inconsistencies between and poor implementation of legislation. Indeed, both aspects deserve attention: for instance, as highlighted by the Doing Business reports, “excessive document requirements, burdensome customs procedures, inefficient port operations and inadequate infrastructure all lead to extra costs and delays for exporters and importers, stifling trade potential”, and “exporters in developing countries gain more from a 10 percent drop in their trading costs than from a similar reduction in the tariffs applied to their products in global markets”⁶².

104. A major alteration to the investment climate in Lao PDR between 2009 and 2012 was the introduction of the new Tax Law; since “tax rates” was the top constraint identified by firms in 2009, the evolution of the Lao fiscal environment deserves special emphasis. This chapter shall present the evidence on regulatory compliance issues from Enterprise Survey data and delve into regulatory changes that occurred between 2009 and 2012 to shed light on changes in firms’ perceptions of the investment climate. First, changes in the constraints reported by firms shall be discussed, in particular the result that tax rates are less of a concern in 2012 than in 2009, while complaints about the “practices of competitors in the informal sector”, tax administration and other regulatory compliance issues have increased⁶³. Second, the attendant rise in other regulatory constraints shall be examined by focusing on the new Tax Law and highlighting the tensions that have arisen between progressive high-level legislation and inconsistent lower-level implementation. Third, hypotheses shall be put forward to explain the dramatic increase in the share of firms that identify the “practices of competitors in the informal sector” as their main constraint. One of these hypotheses is that teething problems in the implementation of the new value-added tax have created frustration among formal businesses.

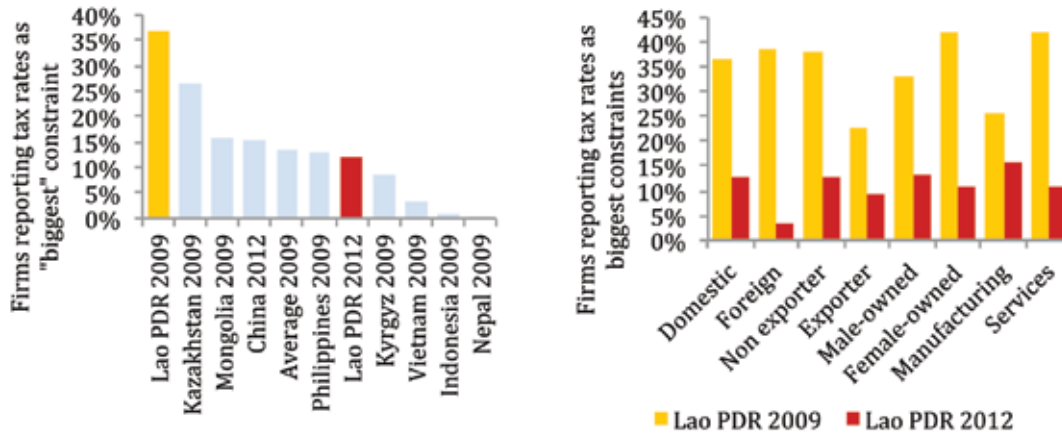
Changes in firms’ perceptions of tax rates, tax administration and other regulatory issues as constraints

105. Firms in Lao PDR complained much less about tax rates in 2012 than in 2009 (see Table 15 and Table 16). The most dramatic change between constraint rankings in the 2009 and 2012 Enterprise Surveys for Lao PDR is the decline in the share of firms complaining about tax rates—from 1st to 4th when the “biggest” constraint to business growth is considered, and from 1st to 6th when “major or severe” constraints are taken into account. Whereas in 2009 Lao PDR stood out in the region as the country with the highest share (37 percent) of firms reporting tax rates as their main concern, a more average 12 percent voiced the same complaint three years later (see Figure 47, left panel). Focusing on firms that could be surveyed both in 2009 and 2012 gives a similar picture (not displayed), which confirms a change in the business environment or firms’ perceptions rather than the effect of alterations in the sampling base or industrial structure. The right panel of Figure 47 further illustrates that the decline benefitted all firms, regardless of ownership, exporting status or sector of activity.

⁶² See also Box 1 on the role of the state as regulator in Lao PDR.

⁶³ Informal payments to public officials in order to “get things done” are reviewed in Chapter 8.

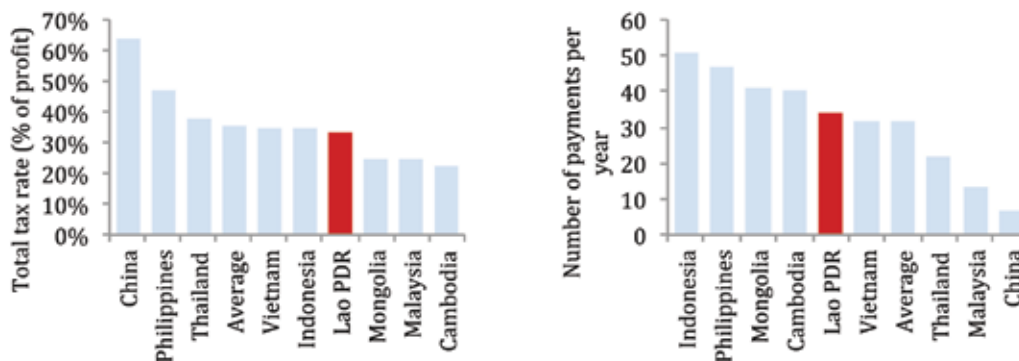
Figure 47: Lao firms are now much less likely to identify tax rates as their “biggest” constraints to growth



Source: World Bank Enterprise Surveys

106. The prevalence of complaints about tax rates in 2009 was interpreted as evidence of a complex and inefficient tax system rather than of a heavy fiscal burden per se. The 2011 *Lao PDR Investment Climate Assessment* noted that although a high proportion of firms identified tax rates as the “biggest” constraint, total tax rates in Lao PDR were comparable to those in the rest of the region (see Figure 48, left panel). Although the frequency of tax and contribution payments is also close to the average for East Asia (see Figure 48, right panel), the costs of complying with regulations in general, and mandatory contributions in particular, do not compare as favorably according to other indicators. For instance, the annual number of inspections by or meetings with tax officials in Lao PDR decreased slightly between 2009 and 2012 but remains the highest in the region, with an average of almost four visits per year in the last Enterprise Survey (Figure 48, left panel). Whereas in 2009 the proportion of senior managers’ time devoted to dealing with government regulations, including taxes, customs, labor regulations, licensing and registration, was lowest in Lao PDR⁶⁴, it increased markedly to above the 2009 regional average (Figure 48, right panel).

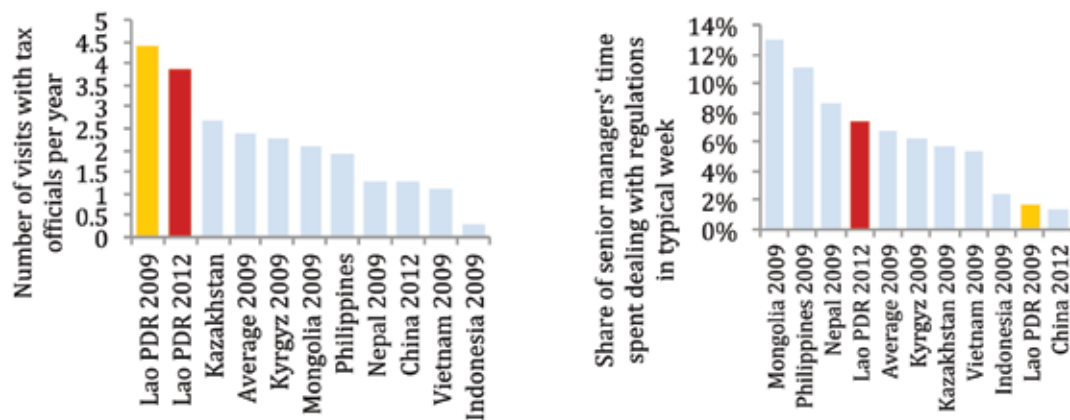
Figure 48: Tax rates as a share of firms’ profits and the number of tax payments per year in Lao PDR are close to the regional average



Source: Doing Business 2013

Note: The left panel displays amounts of taxes and mandatory contributions paid by a medium-sized business (see Doing Business methodology for full assumptions) as a percentage of commercial profit.

⁶⁴ No data for China are available in that year.

Figure 49: The costs of complying with regulations remain relatively high in Lao PDR

Source: World Bank Enterprise Surveys

Note: "Senior manager" refers to managers, directors, and officers above direct supervisors of production or sales workers.

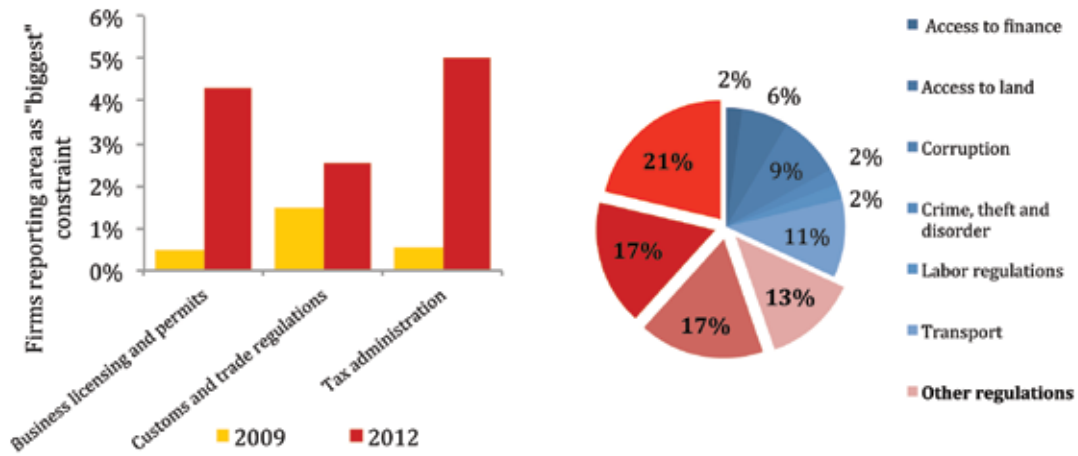
107. Recent evidence confirms the inverse relationships between complaints about "tax rates" and "tax administration". While reports of tax rates as Lao firms' biggest drawback have decreased, concerns about other aspects of compliance with regulations seem to be on the rise. Although they were seldom brought up as serious issues in 2009, "business licensing and permits," "customs and trade regulations" and above all "tax administration" have gone up dramatically in the shares of firms reporting them as their "biggest" constraints to business expansion (see Figure 50, left panel). Comparing the "biggest" constraints elicited by the same (panel) firms in 2009 and 2012 shows that 21 percent of the firms that identified tax rates as biggest impediment to growth in 2009 had the same concern in 2012, 17 percent complained about the "practices of competitors in the informal sector" and 13 percent about other regulatory compliance issues in 2012⁶⁵. This corroborates the strong link between those sets of constraints, as put forward in the 2011 ICA. It however raises the question why the transition occurred in that direction, i.e. what happened between 2009 and 2012 in Lao PDR that led firms to complain less about tax rates and become more specific about the faults they find with regulatory compliance?

108. Administrative constraints seem mostly driven by procedural complexity. Lao PDR does well on a number of indicators pertaining to licensing and customs (Figure 51): the number of days needed to obtain an operating license is close to the regional average for 2009 and the time to get an import license or for exported goods to clear customs is below the 2009 average—see also Box 4 on the progress made by Lao PDR in terms of trade facilitation. This further supports the view that "business licensing and permits" and "customs and trade regulations" may have picked up in 2012 some of the "tax rates" complaints expressed in 2009. Despite a sizeable decline (prior to 2009), the number of documents needed to import and export in Lao PDR—as measured by the Doing Business⁶⁶ data—remains among the highest in East Asia (Figure 52).

⁶⁵ Another 17 percent evolved from tax rates to workers' skills as "biggest" constraint. This is in line with transitions from other constraints to complaints about skills, which increased further in 2012 despite being the 3rd biggest concern in 2009.

⁶⁶ According to the 2014 survey, Lao PDR ranks 159th out of 189 countries in terms of the "Ease of Doing Business". This is a slight improvement on the previous year, when Lao PDR was ranked 163rd, but well behind regional comparators (Thailand, 18th; Vietnam, 99th; and Cambodia, 137th). See www.doingbusiness.org for more detail.

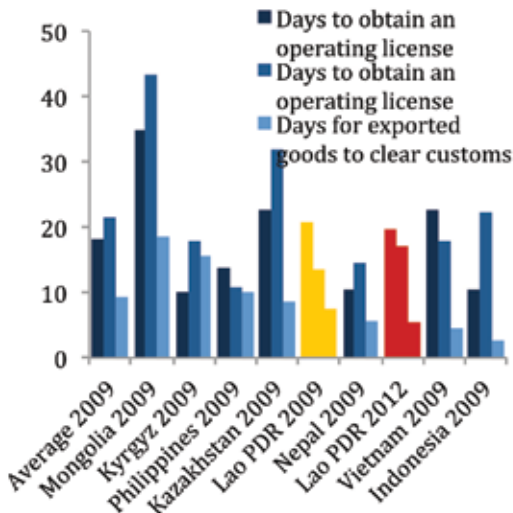
Figure 50: Complaints about tax rates seem to have been replaced by concerns about tax administration and other regulatory compliance issues



Source: World Bank Enterprise Surveys

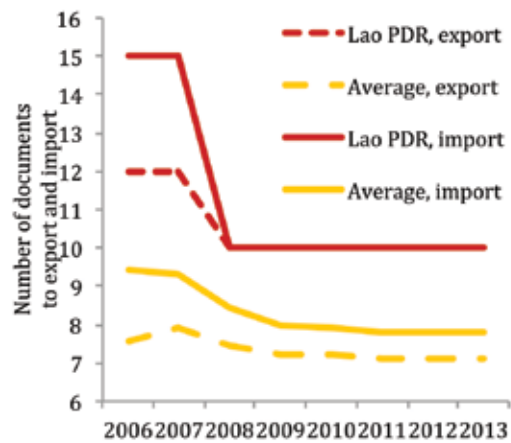
Note: The right panel displays the constraints identified in 2012 by the panel firms that complained about tax rates in 2009.

Figure 51: Lao PDR exhibits average or short delays for several administrative processes



Source: World Bank Enterprise Surveys

Figure 52: Despite commendable decreases, the number of documents needed to import or export in Lao PDR is amongst the highest in the region



Source: Doing Business, various years

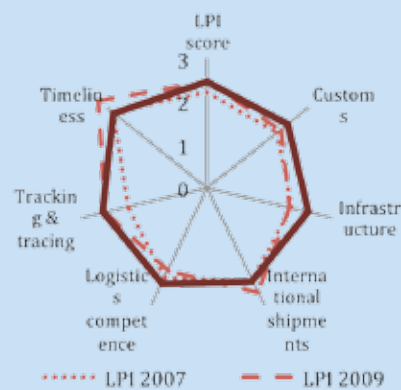
Note: "Average" refers to the average numbers of documents needed to import or export in Cambodia, China, Indonesia, Lao PDR, Malaysia, Mongolia, the Philippines, Thailand and Vietnam.

Box 4: Trade facilitation in Lao PDR-getting faster, but still lagging behind regional comparators

Trade facilitation performance is improving, but high logistics costs due in part to a landlocked supply chain, continue to tax competitiveness and limit the scope for diversified growth⁶⁷. Improvements have been made through reform to customs processing procedures, through the introduction of an automated customs declaration processing system (ASYCUDA World) and related reforms to customs processing, as well as via investments in better border infrastructure. Time Release Survey data shows that the mean customs clearance time has reduced from 17.9 hours in 2009 to 11.2 hours in 2012. The same survey shows mean non-customs clearance times (which apply to around a third of imports, but account for a disproportionate share of time taken) falling from 5.0 to 2.9 days. Variance has also been reduced over the same period. These results are consistent with World Bank Enterprise Survey data which also shows manufacturing firms reporting that the average number of days to import and export has fallen.

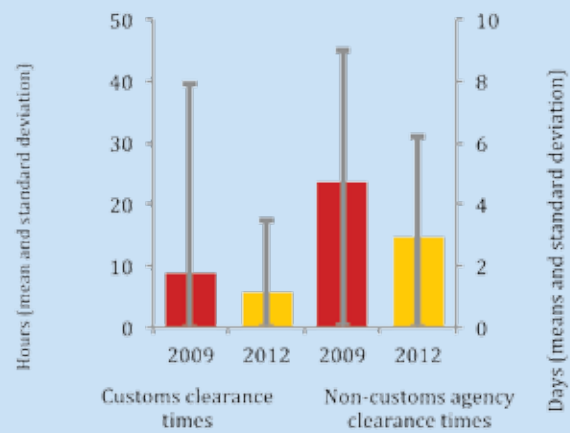
Improvements have also been made through the launch of the Lao Trade Portal (the country's national trade repository) putting much greater information on the regulatory requirements for trade into the public domain. The portal includes information on all laws, regulations, procedures, fee schedules and business processes necessary to fulfil regulatory requirements associated with importing and exporting⁶⁸.

Figure 53: Lao PDR's scores on cross-country measures of trade facilitation have improved



Source: Logistics Performance Index 2012

Figure 54: Average clearance times at the border have been reduced



Source: Time Release Surveys

Perceptions of trade facilitation performance in Lao PDR have also seen progressive improvements under the global Logistics Performance Index⁶⁹. However, gains in Lao PDR are from a low base and the country continues to compare unfavorably to neighboring Vietnam and Thailand. Traders' expectations for performance at the border are also rising. Similarly while tariffs have progressively fallen, non-tariff measures (many of which are implemented in a non-transparent way), are increasingly seen as binding constraints to both greater imports and exports.

⁶⁷ See World Bank (2014a) for more detail on trade and transport facilitation performance, along key export/import corridors.

⁶⁸ See www.laotradeportal.com.

⁶⁹ Lao PDR's score under the Logistics Performance Index has improved from 2.08 in 2007, to 2.17 in 2010 and to 2.38 in 2012. However, in 2012 Lao PDR still ranked 113 out of 155 countries.

The new Tax Law as an illustration of the costs of legal inconsistencies

109. Substantial changes have been made to the Lao revenue legislation but the reforms are undergoing a number of teething problems, possibly exacerbated by increased fiscal pressures. This evolution, and in particular difficulties in fully and effectively implementing new tax related regulations, could explain the observed shift in the “biggest” reported constraint from tax rates to tax administration, practices of the informal sector and other regulatory compliance issues. In addition, it is almost certain that recent fiscal pressures as a result of rapid growth in public expenditures (particularly spending on civil services wages and compensation) are putting pressure on revenue authorities to maximize collections. In circumstances where there is considerable scope for administrative discretion and few mechanisms for bureaucratic appeal, this quickly translates into a more hostile enforcement environment for the private sector.

110. Lao PDR’s new Tax Law (N° 05/NA, 20 December 2011), which came into force in January 2013⁷⁰, has the potential to substantially improve the investment climate. The main purpose of amending the previous law (N° 04/NA, 19 May 2005) was to reduce tax rates and simplify procedures. First, the Corporate Income Tax (CIT) rate was brought down from 35 to 24 percent. Second, the new Tax Law is meant to supersede the 2004 laws on the Promotion of Foreign Investment and Promotion of Domestic Investment, which granted far-reaching exemptions from indirect taxes and duties to foreign investors, as well as preferential profit tax rates and “tax holidays”. De jure advantages to investors no longer discriminate between foreign and domestic companies. Third, the Minimum Tax was abolished, which means that taxes are no longer imposed on enterprise revenues if a firm suffers losses in a particular fiscal year. Losses can be carried forward for three years. Fourth, a Value-Added Tax (VAT) now partially⁷¹ replaces the Business Turnover Tax (BTT) and widens its scope. The VAT system levies an indirect 10 percent tax, instead of 5 percent or 10 percent under the BTT depending on the types of goods and services, and companies should be able to recoup the VAT and carry it forward to subsequent tax periods. This feature of VAT is meant to improve on BTT insofar as it avoids the pitfall of “cascading” taxation, i.e. of the imposition of BTT on inputs that were already subjected to turnover tax “upstream”⁷².

Table 4: Corporate Income Tax rates under the Amended Tax Law

Level	Annual Profit Base (Kip)	Max. Taxable Amount	Rate	Tax at Each Level	Total of max. tax levied
1	From 3,600,000 and lower	3,600,000	0%	0	0
2	From 3,600,001 to 8,000,000	4,400,000	5%	220,000	220,000
3	From 8,000,001 to 15,000,000	7,000,000	10%	700,000	920,000
4	From 15,000,001 to 25,000,000	10,000,000	15%	1,500,000	2,420,000
5	From 25,000,001 to 40,000,000	15,000,000	20%	3,000,000	5,420,000
6	From 40,000,001 upward	-	24%	-	-

Source: Tax Law (N° 05/NA, 20 December 2011).

Note: The top rate (24 percent) increases to 26 percent for enterprises that “produce, import and distribute tobacco products”. The proceeds from this extra 2 percent of profit tax then go to the Tobacco Control Fund.

⁷⁰ The Personal Income Tax provisions came into force in October 2012.

⁷¹ Businesses based in Lao PDR can opt into or stay out of the VAT system if their annual turnover lies below 400 million Kip. Above that threshold, registering for VAT and complying with the VAT law is mandatory. The 2006 VAT Law is currently under revision.

⁷² The progressive rates were reduced from 0 percent-28 percent to 0 percent-24 percent. The 180-day residency rule for foreigners was repealed but it may still apply under Double Tax Agreements (DTAs). Lao PDR now has eight DTAs in force—with Vietnam, Thailand, China, South Korea, North Korea, Brunei, Malaysia and Myanmar.

111. The positive impact on business of the introduction of the amended Tax Law, however, seems to have only partially materialized, mostly because of uncertainty surrounding its implementation. While in principle the new law is already being enforced, anecdotal evidence suggests that implementation has not been harmonized, so that a number of the original 2005 provisions remain effective in parallel. This situation has several determinants. First, although the text came into force on the dates that had been decided, no implementing decree has been promulgated so far, meaning that tax officials are responsible for interpreting the provisions of the law, which leads to varying implementation practices, some tax officers continuing to apply the 2005 Tax Law, and case-by-case negotiations. For instance, the Tax Law does not explicitly state whether depreciation is a taxable expense and tax officials seem to be adopting different views about this. Second, the relative status of the Tax Law and other existing laws is often not defined. Although the Tax Law is supposed to override the Foreign Investment Law (FIL), businesses enjoying a lower CIT rate under the FIL should be able to continue paying the preferential rate, which amounts to 20 percent of profits and benefits foreign companies investing in the country. Whether a firm's taxes are still governed by the FIL or should be determined by the Amended Tax Law has not been clarified by a government decree, so that it is often unclear in practice which rules and therefore which tax rates apply. It is notable that the issue of how laws should be combined and the problem of conflicting new and old pieces of related legislation is not specific to the new Tax Law. A new "Law on Making Legislation" (N^o 19/NA, 12 July 2012) that came into effect in January 2013 may help—see Box 5. However, qualitative interviews suggest that compliance with the disclosure and consultation requirements in the Law of Making Legislation has been mixed at best. Third, although the new Tax Law provides clearer guidance about the implementation of the presumptive ("lump sum") negotiated tax payments—in lieu of turnover and profit tax—which applies to the majority of small businesses, interviews suggest that arbitrariness still prevails, as the tax regime in practice continues to provide substantial autonomy to local collection officials. Finally, commercial relations between entities subject to VAT and others generate problems for VAT recoupment—this is discussed in more detail below.

Box 5: The New Law on Making Legislation introduces greater predictability and transparency into the policy making process

A "Law on Making Legislation" was passed in July 2012 and came into effect in January 2013. It is meant to be a major milestone in the achievement of a rule-of-law state and implementing international trade agreements, such as WTO accession. Its major contributions are: (i) improved legal transparency, (ii) a streamlining of existing legislation, (iii) a clarification of the hierarchy of legislation, (iv) a reduced risk of legal inconsistencies, (v) improved adequacy of legislation to the country's needs, and (vi) higher implementation capacity. Under the law:

- i. All legislation of general application at the central and provincial (or capital) levels is now required to be published in the Official Gazette for 15 days before coming into force. A free Electronic Gazette has been running since July 2013 so as to ensure open access. Lower levels of governments are also expected to post legislation in local media. Besides, all legislation of general application must be published for a 60-day public comment period before approval; the drafting team must review and consider all comments (by Lao citizens and foreigners alike) received before legislation is approved.
- ii. Legislation in place before January 2013 must be posted in the Official Gazette by January 1, 2015 or it will be automatically repealed.
- iii. The "Law on Making Legislation" clearly lays out the hierarchy of legislation and rules to avoid implementation inconsistencies: "Where a contradiction exists, legislation of the higher level shall be applied. If a contradiction of legislation at the same level exists, the later legislation shall be applied. If legislations at the same level contradict each other, the provisions of specific legislation shall prevail." (Art. 9). Requirements in international treaties and agreements hold over domestic norms.

- iv. The development and approval of legislation are standardized in order to handle overlap and inconsistency, and regulations are encouraged to achieve policy objectives while keeping compliance burden to a minimum.
- v. The legislative process should start with a formal justification report to ensure that the legislation is needed. An explanatory note must be developed to explain the key objectives and mechanisms in “common language” and published together with the draft legislation and an impact assessment note for the 60-day public comment period.
- vi. All relevant State Agencies are encouraged to set up a Legal Unit to help implement the law.

However, the challenge—as so often in Lao PDR—will be to match the high level aspirations of the law, with hard-to-shift practices and incentives on-the-ground. Early indications suggest that it will be challenging to implement the new law, even in part.

112. The lack of certainty and consistency in the implementation of the law is damaging to the investment climate. Legal uncertainty increases compliance costs for firms as it leads to more time spent filing taxes and dealing with the tax administration, more resources allocated to professional accountants and even informal cash outlays to tax officials during “negotiation” of taxable income. Lack of long-run certainty on the regulatory environment makes it hard for investors to consider long-run projects that might otherwise have a positive net present value. Moreover, legal uncertainty makes tax payment processes more complex, and acts as a disincentive for businesses to move out of the informal sector, reducing the potential for business growth and job creation.

113. Legal uncertainty is also likely to have unequal effects on different sectors or types of firms. First, it is a particularly stringent issue for foreign firms seeking to enter the Lao market as they lack familiarity with Lao administration. Consequently, an emerging pattern is that foreign investors are realizing that a memorandum of understanding agreed with the government (and ratified by the National Assembly) supersedes the law. Thus firms face an incentive to seek concession agreements as an alternate to the regular business environment as they offer a higher degree of legal certainty. This practice also undermines the incentive for large investors, whose investments are governed by such memoranda, to push for improvements in the implementation of laws and regulations governing the mainstream investment climate. Second, the new VAT system is suffering from teething problems that in particular penalize the exporting sector—see Box 6—and possibly retail firms.

Box 6: Difficulties in recouping VAT credits are harming firms, especially exporters

The new VAT system illustrates the discrepancy between progressive reforms and the vicissitudes of implementation. The new Tax Law provides that VAT credits, i.e. what firms are allowed to claim when VAT paid on purchases exceeds what is due on sales, can either be refunded or carried forward to future periods. In practice, these provisions—which are standardly applied in countries that operate a VAT system—are complicated in Lao PDR by overlapping legal restrictions and implementation problems.

Non-exporting firms report that it is impossible to obtain a cash refund since any tax credit not resulting from exports must be carried forward to the following months. This naturally raises costs for businesses, especially those undertaking expansionary capital investments, whose input taxes constitute substantial cash flows⁷³.

However, issues with the refund of excess input taxes affect exporters disproportionately. Reports from businesses suggest that cash refunds are very difficult—if not impossible—to obtain. Carrying VAT credit forward is not solution for exporting firms as they do not expect to sell their products in the Lao market in the future and exports are zero-rated. Since VAT credits cannot be offset against other taxes in Lao PDR, exporters find themselves building up large balances of idle credits. Even simple delays in reimbursement of VAT to exporters amount to an effective tax on exporters, in an already high cost trading environment. The issue is unlikely to be marginal: a survey of 36 countries carried out by the IMF found that the majority of VAT refund claims (considering both their number and value) is accounted for by exporters⁷⁴.

It is important to note that most countries encounter problems with the payment of VAT refunds at early stages of implementation. This is generally due to insufficient administrative capacity, tax officials' reluctance to refund taxes already collected, time-consuming verifications to detect fraudulent claims and delays in processing refunds to ease state budget constraints or meet tax collection targets. Such implementation issues are to be taken seriously as the nature of VAT is effectively altered, in part, from a tax on final consumption to a tax on production, damaging export competitiveness.

The main way to make sure the VAT system is not detrimental to exporters is to allow for timely VAT refunds. Other measures include accelerated VAT refunds for compliant firms, the application of zero rates to the suppliers of exporters, or allowing the tax authorities to offset VAT refunds against other tax debts. The payment of interest on late refunds, recognizing that delays are equivalent to loans to the government, could also act as an incentive for revenue authorities to proceed more swiftly with refunds.

Regulatory compliance issues may explain increasing frustration with informal competitors

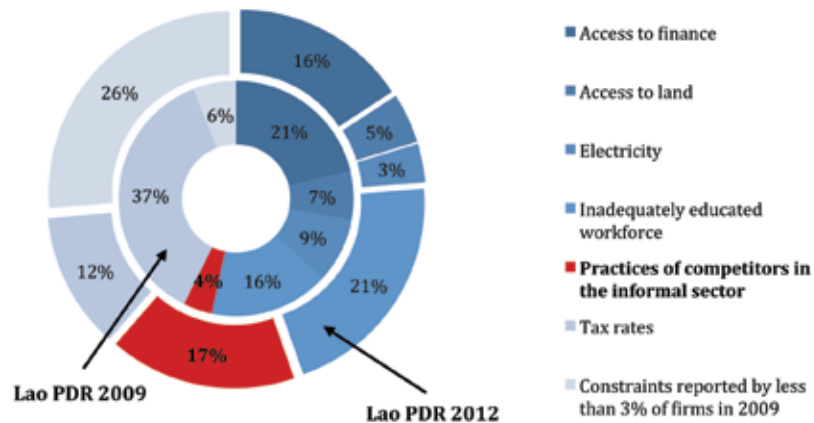
114. One of the major changes that occurred in the constraints identified by Lao firms in 2009 and 2012 is the rise of complaints about the “practices of competitors in the informal sector” (see Table 15 and Table 16). The transition from tax rates to practices of informal competitors as the “biggest” constraint for many firms, combined with risks of tensions between formalization and costly regulatory compliance,⁷⁵ invites us to investigate further the rise in complaints about the informal sector. Whereas only 3.98 percent of firms in Lao PDR mentioned this concern as the “biggest” obstacle to their growth in 2009, ranking 7th out of 13 constraints, they were over 16 percent in 2012, making “practices of competitors in the informal sector” the second most cited constraint, after an “inadequately educated workforce” (see Figure 55). Panel firms experienced a similar evolution (from 4.7 percent to 16.1 percent), which suggests that the rise of this constraint is due to changes in firms' environments or perceptions rather than to transformations in the Lao industrial landscape.

⁷³ LNCCI (2010).

⁷⁴ Harrison & Krelove (2005).

⁷⁵ According to Doing Business data, “in economies where it is more difficult and costly to pay taxes, larger shares of economic activity end up in the informal sector—where businesses pay no taxes at all” (World Bank 2013).

Figure 55: A minor constraint in 2009, “practices of competitors in the informal sector” is the second most cited “biggest” obstacle in 2012

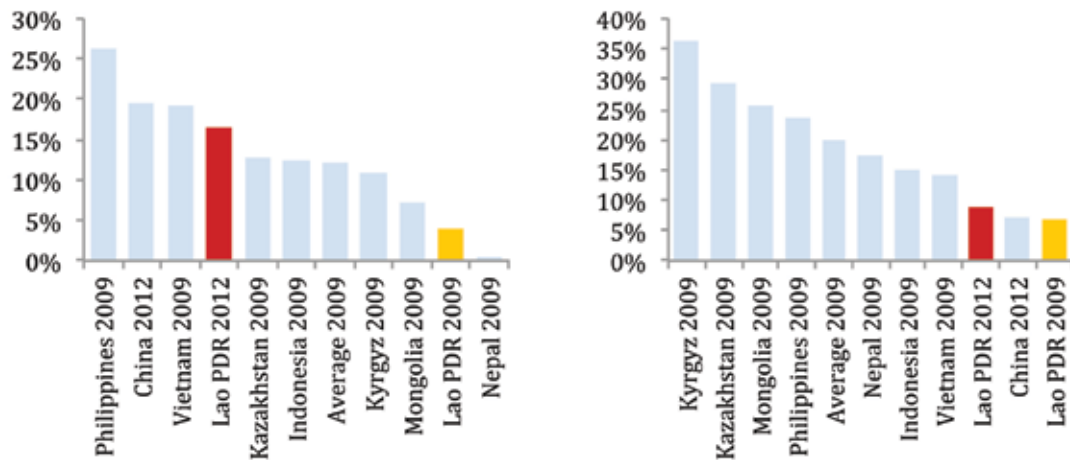


Source: World Bank Enterprise Surveys

115. Concern about the “practices of the informal sector” is not widespread but those who do identify it as being a problem are deeply affected. More firms identified this concern as their “biggest” constraint in 2012 but the increase is much more modest—albeit very significant—when one considers the “major or severe” obstacles they cite (from 6.9 percent to 9.1 percent). By the former criterion, the proportion of firms in Lao PDR was the second lowest among comparators in 2009 whereas it would be well above the 2009 average in 2012 (see Figure 56, left panel). When one considers “major or severe” constraints instead, Lao PDR is among the least affected country in the region, both in 2009 and 2012 (right panel). This discrepancy can be interpreted as an increase in the “depth” but not in the “breadth” of this setback. Since the most cited “biggest” impediment to business growth, an “inadequately educated workforce”, represents only 21 percent of firms in 2012 and 26 percent of respondents report “biggest” constraints that affect less than 3 percent of them, a small number of establishments for which a constraint is the biggest obstacle to growth would immediately show up in the ranking of “biggest” constraints. Conversely, as firms can mention several “major or severe” constraints, rankings are less sensitive to what happens to subgroups. In other words, the firms that suffer from the “practices of competitors in the informal sector” are likely to exhibit very specific traits.

116. Complaints are more frequent among enterprises that compete with unregistered or informal firms. Although respondents’ interpretation of the phrase “practices of competitors in the informal sector” is not known, there is a high degree of correlation between complaints about and interactions with unregistered or informal competitors (Figure 57, left panel).

Figure 56: “Practices of competitors in the informal sector” is increasingly cited as the “biggest” constraint but not as a “major or severe” obstacle



Source: World Bank Enterprise Surveys

Note: The left panel displays the share of firms that identified the “practices of competitors in the informal sector” as their “biggest” constraint. The right panel does the same with “major or severe” constraints.

Figure 57: Complaints about “practices of competitors in the informal sector” are strongly correlated with the firm’s likelihood to compete with unregistered or informal firms

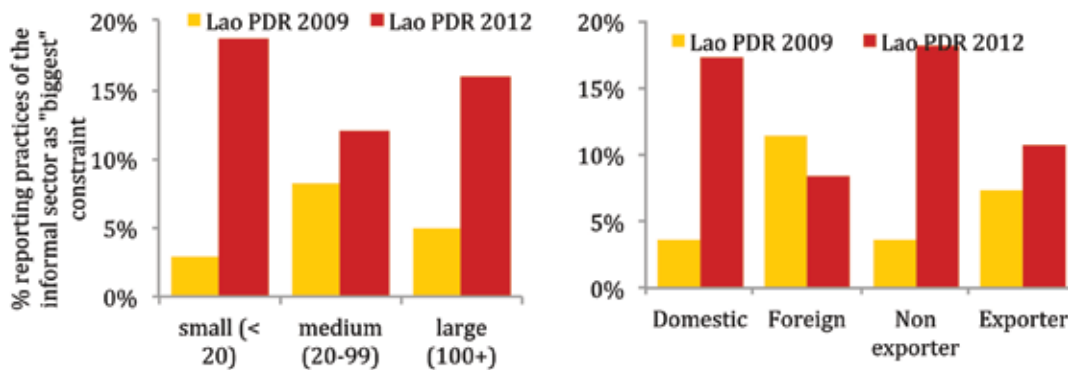


Source: World Bank Enterprise Surveys

117. In what follows, we shall investigate the characteristics of the subgroup of firms affected by informal competitors, and attempt to determine the causes of this concern. Firms may complain about the “practices of the informal sector” because their copyrights, trademarks or non-protected innovations are being stolen by other, nonregistered or informal firms. Another possible explanation could be that informal competitors are able to “cut corners”, which harms the competitiveness of firms that abide by the rules.

118. Firms complaining about the “practices of the informal sector” are more likely to operate in wholesale and retail trade. There is also no obvious pattern could explain firms’ grievances against their informal competitors in terms of establishment size (Figure 58, left panel). Enterprise Survey data for 2012, where more firms are concerned about informal competitors, suggest that domestic and non-exporting firms are more affected (right panel). However, econometric analysis (detailed in Annex 5) shows that these are not significant predictors of complaints about informal competitors. The clearest trait of these firms is that they are overrepresented in wholesale and retail trade, both in 2009 and in 2012 (see Figure 57, right panel). This pattern is robust to using “biggest” or “major or severe” constraints, and to focusing on the 2012 sample or a pooled cross-section of 2009 and 2012 (see Annex 5).

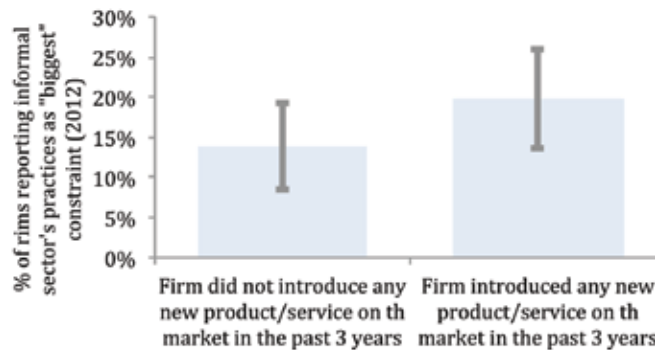
Figure 58: Firms affected by informal competitors’ practices tend to be domestic, non-exporting businesses



Source: World Bank Enterprise Surveys

119. Violations of intellectual property do not seem to be a major factor explaining rising concerns about informal competitors’ practices. The World Bank Enterprise Survey implemented in Lao PDR in 2012 contained a few questions not asked in other countries. Some of them pertain to innovation. Although firms that “introduced any new product or service on the market” between 2009 and 2012 are on average more likely to feel harmed by informal competitors, the difference is not significant at any conventional level (Figure 59).

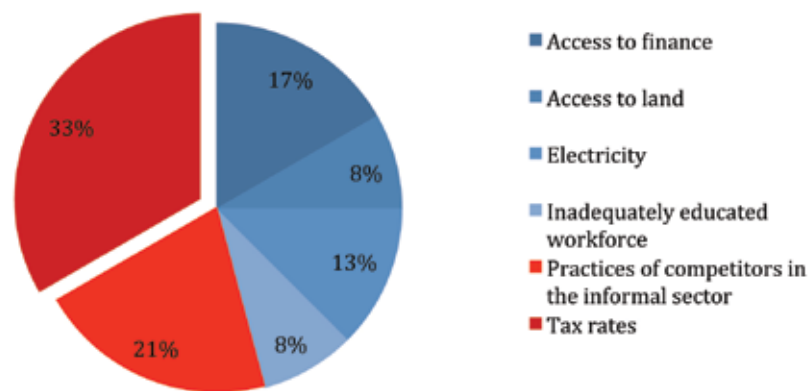
Figure 59: Innovating firms are somewhat more likely to complain about informal competitors’ practices



Source: World Bank Enterprise Surveys

120. Qualitative evidence suggests that the reform of the tax system and continued tax evasion might lay behind the rise in complaints about informal firms' competition. The introduction of VAT in Lao PDR has in effect been partial insofar as businesses can opt into or stay out of the VAT system if their annual turnover lies below 400 million Kip (approximately US\$ 50,000). Above that threshold, registering for VAT and complying with the VAT law is mandatory. Because of this dual system, firms that are required to comply with VAT regulations may work with smaller suppliers up the value chain, which do not face a strong incentive to register into the VAT system. Subsequently, they cannot obtain VAT credit on their supplies. However, it is unlikely that all firms are affected equally. In effect, large firms doing business with non-registered companies but for small amounts may not feel constrained by their inability to get VAT credit from them; conversely, some firms in specific sub-industries may find this more of a problem. Such firms may be overrepresented in the wholesale and retail trade sectors (Figure 57, right panel). The data can, however, provide some evidence to support the idea that complaining firms blame informal practices related to tax compliance. Among the panel firms that complained about the “practices of competitors in the informal sector” in 2012, 21 percent had the same “biggest” constraint in 2009 and 33 percent thought that tax rates were a burden (Figure 60). The introduction of VAT may have led some firms to redefine in what way taxes hinder their expansion. Other interpretations of the correlation between 2009 and 2012 constraints is that some respondents are frustrated at non-registered and tax-evading firms in general. Law-abiding enterprises may find competition with such firms unfair and detrimental to their own businesses.

Figure 60: Firms complaining about informal sector's practices in 2012 mostly faced the same obstacle or identified tax rates as their “biggest” constraint in 2009



Source: World Bank Enterprise Surveys

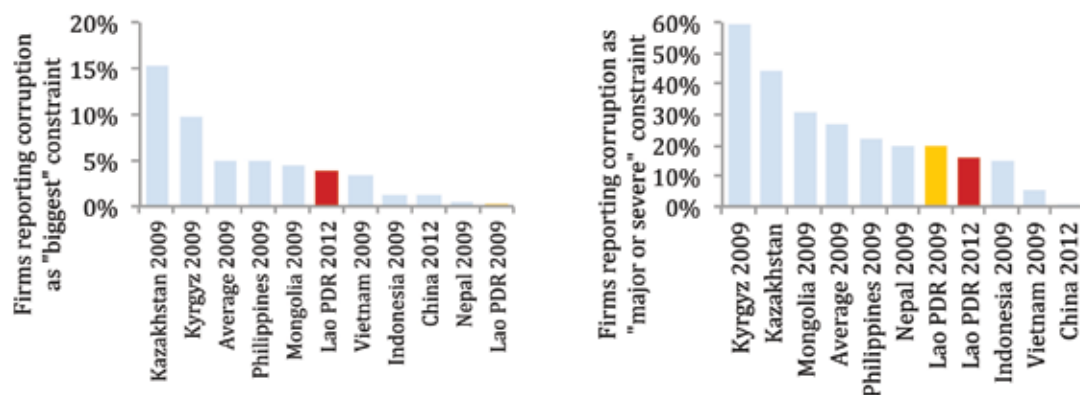
Note: This figure uses firms that could be interviewed both in 2009 and 2012. It displays the “biggest” constraint identified in 2009 by firms that considered “practices of competitors in the informal sector” their “biggest” constraint in 2012. Missing values for 2009 are excluded. Observations are not weighted.

8. Looking at the top constraints in detail: corruption



121. An important dimension of the investment climate is the political economy of business-government relations. One aspect of this is informal payments made to public officials, which appears to be an increasing cause for concern in Lao PDR. Whereas the 2009 Enterprise Survey data suggested that Lao PDR had one of the lowest share in the region of firms reporting “corruption” as the “biggest” obstacle to business, the 2012 data shows a marked increase in such complaints (Figure 61, left panel). This finding is qualified by the share of firms reporting “corruption” not necessarily as their “biggest” constraint but as a “major or severe” constraint (right panel), which has declined by almost 4 percentage points between 2009 and 2012, down from 20 percent, which was already relatively low by regional standards. Nevertheless, because of the fragmentation of reported constraints in 2012—see Annex 4—corruption moved up in the ranking of “major or severe” constraints from 4th to 2nd. This suggests that despite the decline according to this measure, there is a robust subset of firms for which “corruption” remains a significant obstacle to business growth. Although the “biggest” constraints are a better indicator of the depth of an obstacle and “major or severe” ones of its breadth, a potential way to reconcile the conflicting pieces of information is to focus on those answers that are consistent across the two measures⁷⁶. This method lends support to the idea that firms complained more about corruption in 2012 than in 2009, as the decline observed in the share of those identifying it as a “major or severe” constraint is not statistically significant whereas the share of firms that put forward “corruption” as the “biggest” impediment to growth was 13 times higher in 2012 (see Figure 62).

Figure 61: “Corruption” is an increasing concern for a subset of firms in Lao PDR

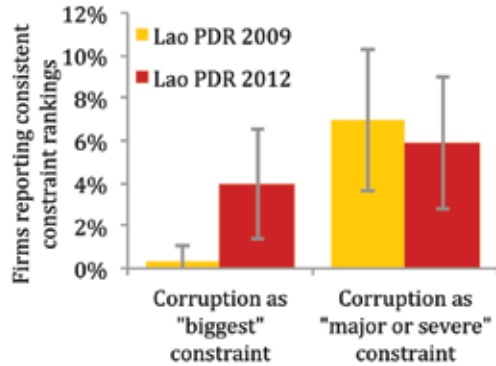


Source: World Bank Enterprise Surveys

122. Focusing on the evolution of objective measures of “corruption” between 2009 and 2012 is important in order to determine the meaning of shifts in firm-level perceptions. In effect, respondents may have different thresholds above which they record informal payments and regard them as “corruption”. Changes in those thresholds—due to declines in profitability or increased awareness—are not straightforward to disentangle from actual changes in officials’ practices, i.e. the frequency and amounts of informal payments made by private businesspersons to public officials.

⁷⁶ Responses are regarded as “consistent” if those firms that identified an obstacle as their “biggest” constraint also ranked it among their top “major or severe” concerns. Similarly, firms that identified “corruption” neither as their “biggest” nor as a top “major” constraint are considered to be “consistent”.

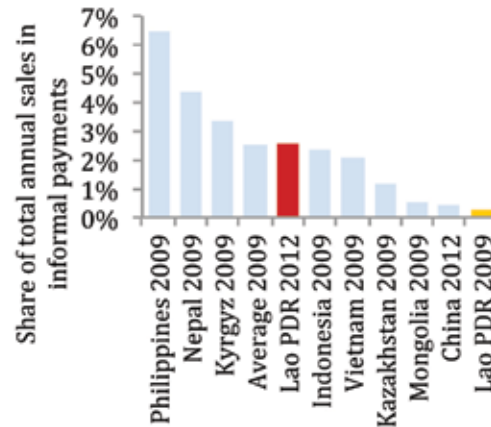
Figure 62: Data show that reports of corruption as a business constraint have not decreased between 2009 and 2012 in Lao PDR



Source: World Bank Enterprise Surveys

Note: Figure 61 focuses on firms that elicited "consistent" responses, i.e. firms that either identified "corruption" as "biggest" constraint and placed it among their top "major or severe" constraints or did not identify it as "biggest" constraint or "major or severe" constraint. Whiskers represent the 95 percent confidence interval. Robust standard errors are used.

Figure 63: Informal payments as a share of total sales experienced a nine-fold increase in Lao PDR between 2009 and 2012



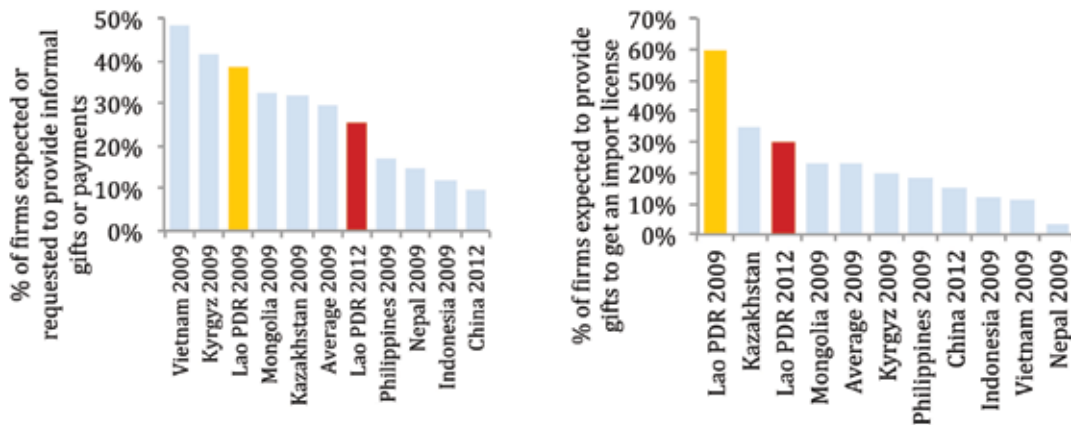
Source: World Bank Enterprise Surveys

123. The 2009 findings were quite puzzling as firms operating in Lao PDR were much more likely to report making informal payments than to acknowledge they were an impediment to business expansion. In 2009, 39 percent of firms in Lao PDR said they were "required to make gifts or informal payments to public officials to 'get things done' with regard to customs, taxes, licenses, regulations, services, etc." (see Figure 62, left panel). This was one of the highest shares in the region. Nevertheless, only 4 percent of firms saw "corruption" as their "biggest" constraint and 20 percent as a "major" constraint (Figure 61). The 2012 results are less anomalous in this respect as complaints about "corruption" have risen while the reported incidence of informal payments has decreased⁷⁷, making the overall picture more coherent. The right panel of Figure 62 gives a similar message: the share of firms expected or requested to provide informal payments or gifts in order to obtain an import license halved between 2009 and 2012. However, this commendable evolution raises another puzzle: Why have perceptions of corruption worsened while the payment of bribes seems to have become less frequent?

⁷⁷ Objective data are far from flawless, especially when it comes to sensitive issues. In a recent paper, Kraay & Murrell (2013) calculate thanks to a technique based on random-response questions that whereas in the baseline 2010 World Bank Enterprise Survey carried out in Peru "18 percent of firms answer that it is common for similar firms to make informal payments to government officials"; "37 percent of respondents in fact find it common to make informal payments, a doubling of the estimate of corruption". Although they also show that discrepancies between actual and "reticence-adjusted estimates of corruption" vary widely across countries, it is not unlikely that Enterprise Surveys systematically underestimate the prevalence of informal payments.

124. Despite a gap between the shares of firms paying bribes and identifying “corruption” as a constraint, analysis of the Enterprise Surveys data shows that that the two are correlated. Figure 63 displays the probability that a firm identifies “corruption” as its “biggest” constraint depending whether it had faced a situation potentially conducive to informal payments in the year preceding the survey. Such situations include applications to obtain an operating or an import license, and attempts to secure a government contract. Almost all the firms that identified “corruption” as their “biggest” constraint have faced such situations, and this holds true both for 2009 and 2012⁷⁸. This result is further confirmed by Figure 65. The strong correlation between informal payments as a percentage of total annual sales and firms’ propensity to identify “corruption” as an impediment to business expansion completes the picture⁷⁹. In effect, an increase of one standard deviation in the percentage of sales lost in informal payments yields on average a 16 percent increase in the change that the firm identified “corruption” as a “biggest” constraint.

Figure 64: The share of firms reporting informal payments in Lao PDR decreased significantly from a high level in 2009



Source: World Bank Enterprise Surveys

Note: Spontaneous refusal to answer is considered as evidence of informal payments.

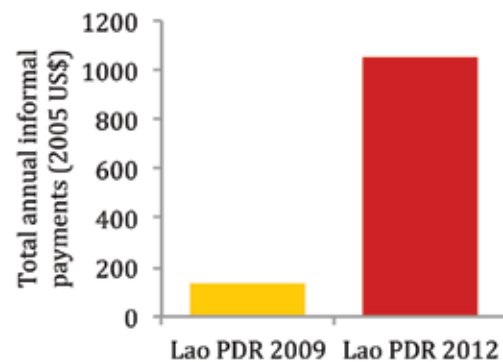
Figure 65: Perceptions of corruption are in line with objective measures



Source: World Bank Enterprise Surveys

Note: Figure 64 plots coefficients from a fixed-effects regression, using panel firms only, of total annual informal payments (in 2005 US\$) on a year dummy. Outliers are removed from the dependent variable. Robust standard errors are used.

Figure 66: Average total annual informal payments seems to have increased between 2009 and 2012

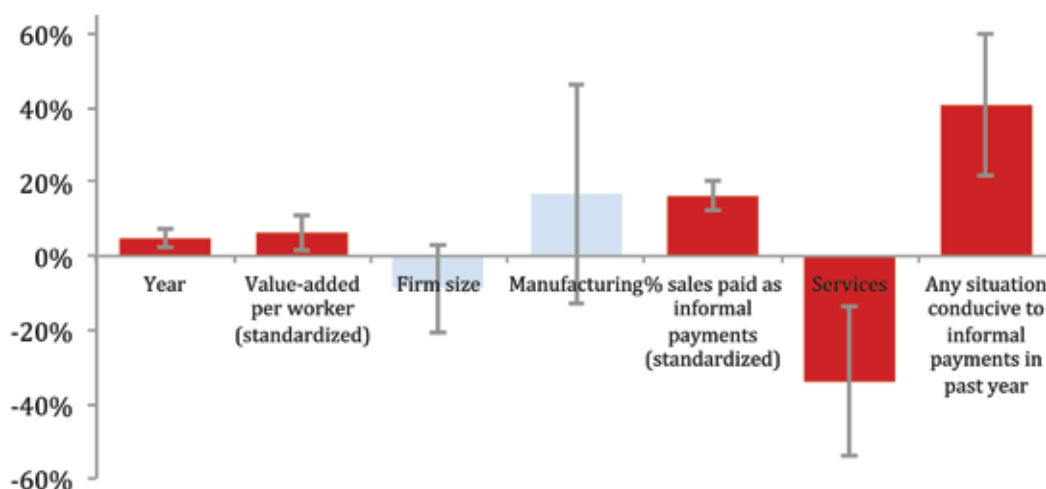


⁷⁸ Results using “corruption” as a “major or severe” instead of “biggest” constraint are virtually identical.

⁷⁹ The results are robust to using “corruption” as “major or severe” constraint on the left-hand side.

125. Even though the incidence of informal payments seems to have gone down, the amounts requested appear to have increased substantially during recent years. Firms' grievances against "corruption" may have intensified between the last two Enterprise Surveys because bribe expectations have increased. Relying on panel firms in order to isolate changes in time from changes in the industrial landscape or sample characteristics, shows that average total annual informal payments to public officials to "get things done" increased dramatically over the three-year period (Figure 66)⁸⁰. The picture is even clearer when one expresses informal payments as a percentage of sales. Informal payments as a share of total sales multiplied by more than 9 between 2009 and 2012, propelling Lao PDR from the best-performing country in the region to the 2009 average (Figure 63).

Figure 67: Complaints about corruption are strongly correlated with informal payments as a share of total sales



Source: World Bank Enterprise Surveys

Note: Figure 65 displays coefficients from a fixed-effects regression, using panel firms. The dependent variable is an indicator that equals one if the respondent cited "corruption" as "biggest" constraint, and zero otherwise. Blue bars signal coefficients that are not significant at any conventional confidence level. Red bars indicate that the coefficient is significant at the 5 percent level. Whiskers represent the 95 percent confidence interval. Robust standard errors are used. Note that "Percent change paid as informal payments" and "Value-added per worker" have been standardized: Coefficients in that case are to be interpreted as the percentage change in the dependent variable, i.e. the firms' propensity to report "corruption" as a constraint, for a one-standard-deviation change in the regressor. Additional controls were included that are not displayed: regional dummies and variables that are significantly correlated with selection into the panel.

126. Reports of increasing informal payments might also reflect, but are unlikely to be solely driven by, changes in attitudes towards informal payments. Objective measures pick up both firms' enhanced awareness of informal payments and actual increases in the amounts requested. Despite evidence of informal payments at every stage of the business registration process in Lao PDR, interpreting the increase in the amounts given is not straightforward. On the one hand, increases in living costs are expected to put an upward pressure on bribe

⁸⁰ Note that although the difference between the two bars in Figure 66 is large it barely misses the 90-percent significance cutoff. This is due to the small sample of panel firms that also report bribes. Besides, noise is expected if informal payments occur in many small amounts, which affects statistical significance. However, the finding that average informal payments increased between 2009 and 2012 is robust to different specifications. It is significant in the regression results reported in Figure 65.

requests. On the other, the recent increase in civil servants' salaries should have the opposite effect⁸¹. However, this debate is relevant only for petty facilitation payments, which are often referred to as "tea money," and many respondents might be more likely to consider those as a convenient way to speed up administrative processes rather than as a substantive impediment to business growth. What Lao business owners might disapprove of more strongly and thus notice rather pertains to public procurement and the negotiation of major concession agreements that provide public assets (land and natural resources) for private development, be it in the form of nepotism or a commission paid and facilitation fees in order to secure a contract⁸². Conversely, anecdotal evidence suggests that perceptions about informal payments have evolved, partly because of increased publicity and enhanced exposure to international standards. As a consequence, payments that were considered "normal" and not noticed have started to be recorded or at least regarded as practices that bite into firms' profits, cannot be offset against tax or other liabilities and ideally ought to be dispensed with. Nevertheless, enhanced awareness of petty bribes is unlikely to be driving the observed increase in amounts paid and shares of firms reporting "corruption" as their "biggest" concern.

⁸¹ Government decree No. 221 dated 30 May 2012 provided for rapid and substantial increases in salary scales for civil servants, to be implemented over a three-year period. However, this policy has subsequently put the budget under severe fiscal strain, leading to the suspension of further increases in wages and compensation.

⁸² Unfortunately, the evolution of informal payments as a percentage of government contract value cannot be studied in the Lao case because of very small sample sizes.



9. Conclusions for policy: transforming the investment climate in Lao PDR

127. The economy of Lao PDR has been growing rapidly based principally on the development of natural resource based industries. The transformation of natural wealth in terms of the country's mineral and water resources has propelled high rates of investment and economic expansion for more than a decade. Lao PDR has become a middle income economy and the country has achieved success in reducing poverty and delivering improved public services. The natural resource development process has also created spillover effects, mostly notably via strong expansion in the services and construction domestic private sectors.

128. However, Lao PDR's rapid growth has masked the costs of a still largely unreformed business enabling environment. In the absence of natural resources endowments, the country would not have been able to achieve the same sort of high rates of economic growth based on private sector activity in the agriculture, manufacturing and services sectors. Deeper investment climate reforms will be necessary to unlock the full potential of the Lao economy, to attract higher quality private sector investment in a wider range of diversified sectors, and to benefit more fully from natural resource development spillovers.

129. While not insignificant efforts have been made to improve the investment climate in Lao PDR, the costs of doing business remain high in relation to comparator countries at similar levels of development. Significant aspects of the investment climate remain characterized by a lack of transparency and predictability for investors. Much of the reform agenda has been driven by efforts to improve investment facilitation for natural resource sector investments and "mega projects", with more limited focus on diversified sectors that create more jobs. Similarly, natural resource investors have so far been more able to absorb high investment transactions costs given larger resource rents and economies of scale. High transactions costs, as a share of business investment costs, have acted as a disincentive for small investors in diversified sectors of the economy. Even in areas where Lao PDR has implemented investment climate reforms, the gap with comparator countries has not been closed as reforms have been implemented elsewhere in the region.

130. Lao PDR, not unlike many other developing countries, suffers from a significant gap between the "de jure" legal framework and the "de facto" environment that enterprises experience on the ground. It is not unexpected that the country, which is still in the midst of a major transition from plan to market, should experience substantial policy gaps. However, the result is a persistent and widespread problem commonly referred to as "lack of implementation" that results in inconsistent and unpredictable enforcement of laws and regulations. In fact, the root causes of this problem are likely to be more complex and associated with the political economy of reform in a socialist state and a still unsettled consensus on the direction of reform. Much of the headline investment climate reforms have been driven by the desire to change the outward appearance of the country, including through accession to the WTO and commitments to ASEAN, but without a widespread understanding of the full implications of such commitments. This may have led to a partial reform syndrome with much more success in building the "form" of modern investment climate institutions than in building the "substance".

131. In the same way, natural resource based expansion has concealed the costs of workforce education and skills that are at a level well behind that of comparable economies. Skill levels in the Lao labor force compare poorly with comparator countries on just about every metric and there has been no observable growth in productivity during the last decade. Meanwhile, labor costs have been rising rapidly in line with a growing economy, but without growth in productivity. Firms that

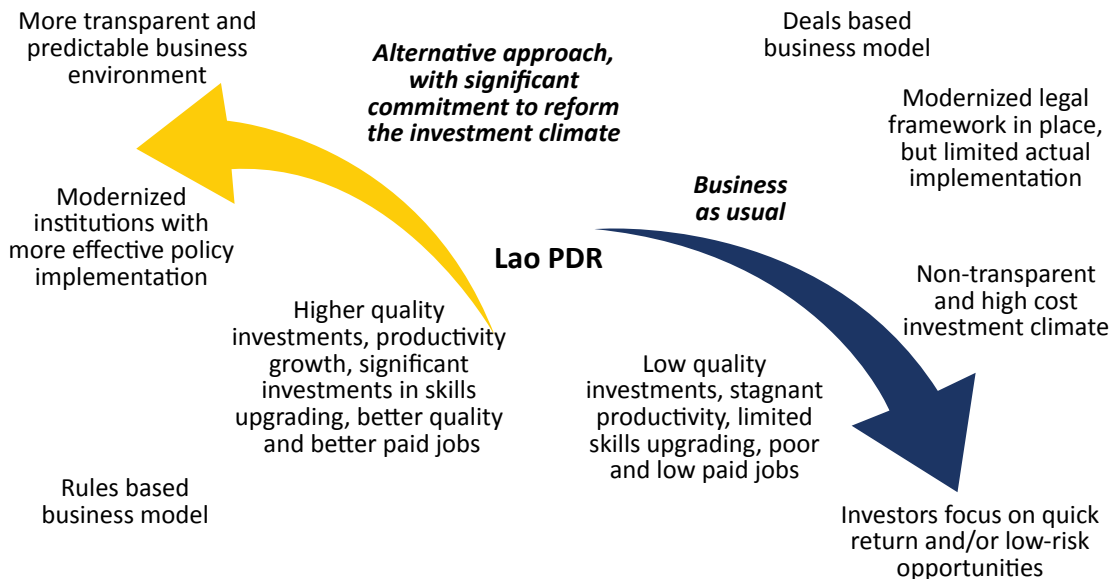
complete on international markets (and are thus “price takers”) such as manufacturers have become stuck in a low profitability, low productivity and low wage cycle, that has constrained growth. The same situation has not, however, acted as a brake on natural resource sector investments which are not labor intensive. Weak skills and poor productivity present a major barrier to private sector development in the diversified sectors, particularly in areas where knowledge acquisition, service delivery and learning-by-doing are important parts of the economic development process.

132. In addition, the rapid expansion of the mining and hydropower sectors, in an otherwise small economy, has put strains on the competitiveness of the non-natural resource sectors.

While there are clearly large and obvious benefits to Lao PDR associated with the sustainable development of natural resources, including land, minerals, forest and water resources, this process has begun to distort the wider economy. Growth in manufacturing has been repressed while services development has been stimulated. This could lead to an unbalanced development model and with the Lao PDR being exposed to high systemic risks from sector specific shocks⁸³. Moreover, there is a risk that the country experiences high rates of growth, but without significant job creation or development in diversified sectors of the economy.

133. There are also early warning signs that the natural resource based development model is placing strains on governance. Businesses in Lao PDR are increasingly likely to report corruption as a constraint, and the volume and value of rent seeking payments appears to be growing, putting gains in terms of poverty and shared prosperity at risk.

Figure 68: Two possible future scenarios for Lao PDR



⁸³ With the rapid expansion over recent years in copper and gold mining, Lao PDR has become increasingly exposed to changes in global commodity prices, and in particular to metals demand in China. Similarly, hydropower projects expose the country to greater risk of demand changes for imported electric power in Thailand.

134. The principal conclusion from this Investment Climate Assessment is that policymakers in Lao PDR face two different pathways: business as usual, or radical change in the approach to private sector development (see Figure 68):

- **Business as usual, meaning the continuation of the current, principally natural resource extraction model**, with limited growth in diversified sectors and a focus on “mega projects”. While this approach still likely continue to drive high rates of growth in the short to medium term, momentum will eventually slow. In the longer term, there will be significant risks that incremental growth delivers fewer returns in terms of poverty reduction and the economy will become vulnerable to sector specific shocks.
- **An alternative development approach that seeks to radically reform the business enabling environment improving transparency and predictability.** The objective would be to put in place an investment climate that can attract higher quality investors and investments, encourage substantially larger investments in skills upgrading in areas that the private sector needs, facilitating productivity growth and the creation of better quality and better paid jobs in diversified sectors. The focus would be much less on putting in place the “form” of modernized institutions for private sector development, and much more on the actual “substance” of service delivery. This may mean less use of first-best institutional solutions, and more context-specific approaches that result in changes to the investment climate that can be observed at the enterprise level. While natural resource based development projects would still play a dominant role in the economy, much greater emphasis would be placing on facilitating higher productivity and performance in diversified and higher value manufacturing, agriculture and services.

135. Implementing this new approach will require a number of policy actions with a greater focus on full implementation of a more limited set of reforms, rather than partial implementation in many areas:

- **Much greater efforts to streamline and simplify transactions costs in the business enabling environment.** This will require wholesale efforts to rethink the way that the state engages and interacts with private enterprise, and a generalized movement in the public sector away from direct regulation of business activity through licensing, permits and taxation to one of facilitation.
 - A key and necessary change would be to shift the vast majority of regulations governing business operations from an ex ante to ex post approach, with assumed compliance in all but a handful of sectors (where there is a strong public goods requirement for prior regulation).
 - This would imply a substantial reduction in the number of sectors requiring non-automatic licensing and permits for establishment and/or operations.
 - Regulatory control would remain only in limited areas where there is a strong public goods rationale (for example relating to public health or security), with remaining regulatory requirements permitted through full electronic data interchange systems (including, for example with regard to export/import transactions a regulatory National Single Window that includes full electronic authorization) and risk based approaches that provide private sector incentives towards compliance.

- **A public commitment to transparency in all aspects with which the state engages with the private sector.**
 - Prompt publication of all drafts of legislation, fee schedules, permits and licensing requirements; tax, excise, customs and duties; and business processing requirements.
 - A commitment to grant equal treatment to electronic publication of laws, regulations, schedules etc. with print publication.
 - The application of “readiness filters” to all new laws and regulations, including full preparation of subsidiary legislation and a clear timeline for entry into force, before new primary legislation is presented for approval.
 - Much stronger implementation of the Law on Laws, including on prior consultation on draft legislation before adoption, prior publication of approved legislation before implementation, full transparency of legal instruments and implementation of “sunset clauses” that would automatically revoke redundant legislation.

- **Much greater commitment to the establishment of a rule-of-law state.**
 - This would require fundamental change in the way that public officials interact with businesses, with primacy given to the consistent implementation of publically available legislation, rules and regulation, and a reduction in bureaucratic discretion.
 - Establishment of a low-cost, transparent and independent appeals process for all administrative decisions regarding private enterprise (on tax, customs and licensing decisions).
 - Full and effective separation of regulatory and ownership functions in sectors where state ownership remains significant (financial services, telecommunications and transportation).

- **Greater certainty and consistency with the way that the private sector is taxed.**
 - Movement away from a system based on negotiation to one based on consistent application of a clear and transparent framework for taxation.
 - A low-cost, independent and effective administrative appeals process to provide arbitration on cases of dispute for tax related matters.
 - Wider options for the treatment of tax credits, such as transferal across tax regimes (for example to offset VAT credits against CIT debits), risk-based refund systems and/or payment of interest on outstanding unpaid credits.

- **Increased incentives for firm-level investment in education and skills, including the ability for firms to offset the costs of workforce skills upgrading against tax liabilities.**
 - Currently not only is investment in workforce skills upgrading not tax deductible, it is frequently treated as a taxable benefit-in-kind. This acts as a double disincentive for firms to provide in-service training to their workforces. Allowing firms to offset training investments (up to prescribed ceilings) would act as an incentive and help offset the risks that firms face in investing in skills development.
 - Matching grants schemes (such as the Business Assistance Facility) can also act as incentive for firms to invest in skills development, particularly where the public benefits of investment are larger than the private benefits (and so individual firms may underinvest).

- **Accept that significant skills gaps will remain in the private sector for the considerable future, and ensure that gaps can be filled quickly and efficiently with imported skills.**
 - Unlike in neighbouring countries, the movement towards a freer regional labour market under the ASEAN Economic Community, poses no threat to Lao PDR. Removing administrative barriers, including limitations on the number and time period of foreign skilled workers at the firm level, would attract increased investment in diversified and knowledge-intensive sectors. There are already strong cost advantages from localizing skilled worker positions to Lao employees that provide incentives for firms to train their local workforce.

- **Deeper investments in backbone infrastructure and services for competitiveness, but on an affordable basis,** including border facilities, power, telecommunications and regulatory infrastructure.
 - This would include continued at-the-border and behind-the-border reforms to further reduce the transactions costs associated with international trade. These costs are felt most keenly by smaller traders and in the non-natural resource sectors where returns are lower.

- **Modernize the financial sector as a key support base for private sector development.** Priority reforms include the following areas.
 - Opening up the banking sector to more foreign-owned institutions and let them offer the full range of financial products they offer in their home countries.
 - Gradually eliminate controls (caps) on interest rates for lending products to enable banks to price their lending products according to the risk profile of potential borrowers, and thus serve a larger number of SMEs.
 - Promote other forms of non-bank lending, such as equity financing for medium size enterprises.

- **Ensure macroeconomic stability as a prerequisite.** Damaging feedback loops during the recent pressures on the government's fiscal accounts have had consequent effects on the private sector. Increased pressure to intensify revenue collection, pressure on foreign reserves that has damaged the market for foreign exchange within Lao PDR, and the build-up of arrears owed by the government has all undermined business confidence.
 - This may mean recognizing that there are policy trade-offs from ensuring both high rates of economic growth and maintaining macroeconomic stability, and at times the two objectives may be mutually exclusive.

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Annexes

Annex 1: Main variables and concepts used in the analysis

The study focuses on several measures of firm productivity. These are calculated in a uniform way in all countries with comparable Enterprise Survey data from between 2006 and 2011. Although some surveys were conducted before 2006, these surveys did not use the same consistent sampling methodologies and questionnaires as the later surveys. Moreover, weights were not collected for these firms. We therefore restrict the analysis to the later, consistent surveys.⁸⁴ A list of countries and years of surveys included in the analysis are listed below in Table 5.

The *Enterprise Surveys* collect financial data in the local currency in the country being surveyed. To make cross-country comparisons, we need to convert the financial data into a common currency in a single year (i.e., to control for inflation and exchange rate differences). To do this, all values are converted into 2009 or 2009 US dollars (US\$). The data are inflated to 2009 values in local currency using the GDP deflator. The values in 2009 local currency are then converted into US\$ using 2009 exchange rates. Since most firms in the sample sell their products primarily in local markets, exchange rates have to be close to their equilibrium values in 2009 for these comparisons to be very accurate. If the exchange rate in a given country is over- or under-valued, the comparisons will under- or overstate the actual value of the performance measure for that country. The individual measures are constructed in the following way.

Value-added. Value-added is the value of the goods and services that the firm produces less the cost of the raw materials (such as iron or wood) and intermediate inputs (such as engine parts or textiles) used to produce the output. Output is measured in local currency not in physical units. We subtract the cost of raw materials, intermediate inputs, electricity and fuel in local currency from output to get value-added. Firms report electricity and fuel costs separately from raw materials and intermediate inputs. Firms that do not report sales or raw materials are dropped for this measure. Electricity and fuel costs are treated as if they are zero for firms that do not report electricity or fuel costs (i.e., the firms are not dropped). This is done because dropping firms that do not report electricity or fuel costs would have a significant impact on sample size and because electricity and fuel costs are small relative to sales and raw materials.

Number of workers. The number of workers is the number of permanent and temporary full-time workers. Temporary workers are weighted by the average length of employment for these workers. So, for example, if the average length of employment for a temporary worker was 6 months, the weight for temporary workers would be $\frac{1}{2}$. Data on part-time workers is not collected in most countries and so part-time workers are omitted for reasons of comparability. In practice, for countries with data on part-time workers, including these workers does not have a large effect on relative rankings. Firms that do not report permanent or temporary workers are dropped for measures that use workers (e.g., value-added per worker).

Labor Productivity. Value-added per worker is the basic measure of labor productivity used in this paper. It is value-added divided by the number of full-time workers in the firm. Firms that produce more output with less raw material and fewer workers have higher labor productivity.

Capital Intensity. The first measure is the book value of capital divided by the number of workers. For firms that keep detailed financial accounts, this measure should be the value of capital taken from those accounts. For other firms, it will either be omitted or estimated by the manager. This variable is described as follows in the ICA manual:

⁸⁴ There are some exceptions to this. Most notably, we include several earlier surveys from East Asia (e.g., China, Lao PDR and Vietnam) that were completed in 2005.

The net book value represents the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation) minus depreciation accumulated since the date of purchase. (World Bank, 2007b)

The second measure is the sales value of capital divided by the number of workers. The manager is asked to estimate the value of the capital if sold in its current condition. Although this is probably closer to the true value of the capital, it has some shortcomings. In particular, when markets for capital equipment are thin, it might be difficult for the manager to give an accurate estimate. The implementation manual notes:

Ask the manager to estimate the market value if all of the equipment, land and buildings were sold on the open market. If the respondent states that there is no market, ask how much the respondent would be willing to pay for the capital, knowing what it can produce in its current condition. Estimate how much it would cost to buy machinery in the current market which is similar in terms of age and characteristics. (World Bank, 2007b)

Firms that do not report these measures have to be dropped when calculating the respective measures of capital intensity.

Total Factor Productivity. This measure of productivity takes both labor and capital use into account. The methodology is described in Annex 2.

Labor costs per worker. The cost of labor is the cost of wages, salaries, bonuses, other benefits, and social payments for workers at the firm divided by the number of workers. The data is taken from the firms' accounts. It includes wages and salaries paid to all workers and managers—not just production workers. Firms are only dropped from these averages when they do not report labor costs (or workers).

Unit labor costs. This measure is labor costs as a percent of value-added. Although it is an approximation to true unit labor costs (i.e., it measures output in dollars rather than in physical units), it can be calculated using information from the Enterprise Survey. Even the approximation, however, is a better measure of labor costs than labor cost per worker in that it takes differences in productivity into account. Unit labor costs are higher when higher labor costs are not fully reflected in higher productivity. Another attractive feature of unit labor costs over the other performance measures is that they are not measured in local currency and, therefore, are unaffected by exchange rate variations. They are not perfect, however, since they do not take capital use into account.

Corruption. Alongside corruption a constraint, for which the word “corruption” itself is used, the Enterprise Survey asks firms about “informal payments”. For instance, the following question is asked:

It is said that establishments are sometimes required to make gifts or informal payments to public officials to “get things done” with regard to customs, taxes, licenses, regulations, services etc. On average, what percentage of total annual sales, or estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose?

Although the question inquires about “establishments like this one,” a positive answer is usually construed as an admission of informal payments. This phrasing is used to make the question less blunt and elicit more truthful answers. However, disingenuous answers and nonresponse are likely an issue—see Kraay and Murrell (2013), *inter alia*. Subsequently, all “spontaneous refusals to answer” were recorded by the enumerators and in the analysis such refusals were regarded as admission of informal payments to public officials.

Table 5: Countries included in productivity analysis

Africa	East Asia and Pacific	Latin America and Caribbean
Angola 2006	Cambodia 2007	Antigua and Barbuda 2010
Angola 2010	China 2005	Argentina 2006
Benin 2009	Fiji 2009	Argentina 2010
Botswana 2010	Indonesia 2009-2010	Bahamas 2010
Burkina Faso 2006	Lao PRD 2005	Barbados 2010
Burkina Faso 2009	Lao PDR 2009	Belize 2010
Burundi 2006	Lao PDR 2012	Bolivia 2006
Cameroon 2006	Malaysia 2007	Bolivia 2010
Cameroon 2009	Micronesia 2009	Brazil 2008-09
Cape Verde 2006	Philippines 2009-2010	Chile 2006
Cape Verde 2009	Samoa 2009	Chile 2010
Central African Republic 2011	Timor Leste 2009	Colombia 2006
Chad 2009	Tonga 2009	Colombia 2010
Congo 2008	Vanuatu 2009	Costa Rica 2010
Congo, DR 2006	Vietnam 2005	Dominica 2010
DRC 2010	Vietnam 2009	Dominican Republic 2010
Eritrea 2009	Europe and Central Asia	Ecuador 2006
Ethiopia 2011	Albania 2008	Ecuador 2010
Gambia 2006	Armenia 2008-09	El Salvador 2006
Ghana 2007	Azerbaijan 2008-09	El Salvador 2010
Guinea 2006	Belarus 2008	Grenada 2010
Guinea Bissau 2006	Bosnia and Herzegovina 2008-09	Guatemala 2006
Ivory Coast 2008-09	Bulgaria 2007	Guatemala 2010
Kenya 2007	Bulgaria 2008	Guyana 2010
Lesotho 2008	Croatia 2007-08	Honduras 2006
Liberia 2008	Czech Republic 2008-09	Honduras 2010
Madagascar 2008-09	Estonia 2008-09	Jamaica 2010
Malawi 2005	FYR Macedonia 2008-09	Mexico 2006
Malawi 2009	Georgia 2008	Mexico 2010
Mali 2007	Hungary 2008-09	Nicaragua 2006
Mali 2010	Kazakhstan 2008-09	Nicaragua 2010
Mauritania 2006	Kosovo 2008-09	Panama 2006
Mozambique 2007-08	Kyrgyz Republic 2008-09	Panama 2010
Niger 2009	Latvia 2008	Paraguay 2006
Nigeria 2007	Lithuania 2008-09	Paraguay 2010
Nigeria 2009	Moldova 2008-09	Peru 2006
Rwanda 2006	Mongolia 2008-09	Peru 2010
Rwanda 2011	Montenegro 2008-09	St Kitts and Nevis 2010
Senegal 2008	Poland 2008-09	St Lucia 2010
Sierra Leone 2008	Romania 2008	St Vincent and Grenadines 2010
Swaziland 2006	Russia 2008-09	Suriname 2010
Tanzania 2006	Russia 2012	Trinidad and Tobago 2010
Togo 2009	Serbia 2008	Uruguay 2006
Uganda 2006	Slovak Republic 2008-09	Uruguay 2010
Zambia 2007	Slovenia 2008-09	Venezuela 2006
Zimbabwe 2011	Tajikistan 2008	Venezuela 2010
Africa -- Middle income	Turkey 2008	South Asia
Botswana 2006	Ukraine 2008	Afghanistan 2008
Gabon 2008	Uzbekistan 2008	Bangladesh 2007
Mauritius 2008-09	Middle East and North Africa	Bhutan 2009
Namibia 2006	Egypt 2008	Nepal 2009
South Africa 2007-08	Iraq 2011	Pakistan 2007
	Jordan 2006	Sri Lanka 2011
	Jordan 2011	
	Tunisia 2012	
	Yemen 2010	

Annex 2: Total factor productivity estimation

This appendix describes how total factor productivity is estimated for the cross-country comparisons of technical efficiency or total factor productivity and for the within-country comparisons for firms with different characteristics.

Methodology

Technical Efficiency (TE) is calculated as a residual from a regression of the log of output (either value-added or revenue) on labor, capital, and other intermediate inputs.⁸⁵ Using a formulation based upon value-added, the estimation assumes a Cobb-Douglas Production function:⁸⁶

$$Y_i = A_i K_i^\alpha L_i^\beta \quad (1)$$

Where Y is value-added for firm i, K is a measure of capital (e.g., the book value or replacement value of capital), L is the number of workers and A is total factor productivity or technical efficiency. Constant returns to scale are not imposed allowing the model to control for differences in productivity by firm size. The higher that A is, the more output the firm produces with the same amount of capital and labor. Taking natural logs of both sides implies that:

$$\ln(y_i) = \mu + \alpha \ln(k_i) + \beta \ln(l_i) + \varepsilon_i \quad (2)$$

where

$$A_i = e^{v_i} = e^{\mu + \varepsilon_i}$$

That is, the firm's productivity is equal to a constant, μ , and an additional firm-specific measure of productivity, ε_i . It is easy to generalize this into a more general 'augmented' production function where the error term is:

$$v_i = \mu + \partial FC_i + \varepsilon_i \quad (3)$$

Where FC_i is a vector of variables representing the characteristics of the firm or the characteristics of the investment climate that the firm faces. This implies that:

$$\ln(y_i) = \mu + \alpha \ln(k_i) + \beta \ln(l_i) + \partial FC_i + \varepsilon_i \quad (4)$$

To allow for productivity differences between countries, a vector of country dummies (μ_c) can be included in the analysis. Comparisons of TFP across countries and made looking at the coefficients on the country dummies. This can be interpreted as average total factor productivity for firms in each country. As discussed below, it is better to do this than to exclude the dummies and calculate the average residual for firms in each country because, as discussed below, the second approach is problematic if capital, labor or firm characteristics differ across countries. This implies that:

$$\ln(y_i) = \mu_c + \alpha \ln(k_i) + \beta \ln(l_i) + \delta FC_i + \varepsilon_i \quad (5)$$

⁸⁵ Following Caves and Barton (1990), the analysis in this chapter uses value-added rather than sales as the dependent variable. Caves and Barton (1990), found that measures of TE (technical efficiency) based upon revenues (gross output) were far more sensitive to small changes in functional form with respect to calculating efficiency. As discussed below, because the value of output is used rather than a physical measure of output, 'sales generating' function might be a better description.

⁸⁶ It is possible to make other assumptions about the functional form of the production function (e.g., to assume a trans-log production function), although this does not appear to have a significant impact on results in most cases. See for example the analysis from the Investment Climate Assessment for Turkey (World Bank, 2007a).

Under some assumptions, equation (4) can be estimated by Ordinary Least Squares (OLS). In particular, when firm characteristics are omitted (i.e., when equation (2) is estimated), the coefficients can be estimated with OLS if capital and labor are uncorrelated with the error term. That is any shock or firm specific factors that affect productivity must be uncorrelated with the firms' decisions regarding capital and labor choices. This would be violated if, for example, managers were aware of something that affected productivity and allowed this to affect their hiring, firing or investment decisions. For example, this assumption would be violated if a firm received some technical advice from one of their suppliers or buyers that improved the firm's productivity and then the manager decided to hire more workers to take advantage of this improved know-how.

Characteristics of the firm or the investment climate for the firm can also be directly included in the OLS regression as long as these characteristics are exogenous. For example, if becoming an exporter makes a firm more productive (e.g., through exposure to foreign markets) then a dummy variable indicating that the firm was an exporter could be included in the regression as long as changes in productivity did not affect the decision to become an exporter. If, for example, a firm became more productive and decided that this productivity boost meant that it could start exporting this assumption would be violated.⁸⁷

Rather than including firm or investment climate characteristics directly in the model, it is possible to first estimate equation (2) through OLS or another more robust estimation method, obtain estimates of TE by calculating ε for each firm from equation (2) and then regress the residuals on the firm and investment climate characteristics (e.g., estimating equation (3)). An advantage of this approach is that if panel data is available it might be possible to estimate equation (2) using a robust technique such as the method suggested by Levinsohn and Petrin (2003) and then use something such as 2SLS in the second stage if one of the firm or investment climate characteristics were thought to be endogenous.⁸⁸

The drawback of this second approach is that if the firm level or investment climate characteristics are correlated with the amount of labor and capital that the firm uses (i.e., if the manager's knowledge about the investment climate affects the firms use of labor or capital) then the estimates of the coefficients in equation (2) will be biased.⁸⁹ As a result, the ε 's will be estimated incorrectly and the coefficients from the second stage will be biased. It seems likely that this will often be the case. Escribano and Guasch (2005), argue that "this is almost always the case since the inputs are correlated with the Investment Climate (IC) variables and least squares estimators of [equation 2] are inconsistent and biased." For this reason, estimation is done in a single step in this report.

One concern about OLS is that outliers can have a significant effect on OLS estimates. This can be dealt with in several ways. One possible way is to estimate the equation with a robust estimation method such as a Least Absolute Deviations (LAD) estimator. Another is to drop outliers. Due to concerns about outliers, LAD estimators are often used when estimating production functions.⁹⁰

⁸⁷ There is a large literature on whether exporting improves performance (learning-by-exporting hypothesis) or whether only productive firms can export (self-selectivity hypothesis). The large literature on this topic is summarized in Tybout (2003) and Bernard and others (2007).

⁸⁸ Gatti and Love (2008) do this allowing access to credit to be endogenous in the second step.

⁸⁹ This is due to omitted variable bias. It is discussed in more detail in Chapter 7 in Kumbhakar and Lovell (2000) and in Escribano and Guasch (2005).

⁹⁰ See, for example, Greene (2000, pp. 449-450).

In addition to concerns about outliers, a second set of concerns has been discussed in the literature on (i) the functional form of the error term, ε , and (ii) whether the error term is correlated with capital and labor. There are several methods that have been proposed regarding the functional form of the error term. In particular, stochastic frontier analysis allows for two error terms, a one-sided term assumed to have a half normal distribution, v , representing technical efficiency and a two-sided normally-distributed error term, ε , representing temporary shocks to productivity and measurement error. The model is estimated using maximum likelihood estimation. In the analysis, we use the LAD estimators as our base estimators. We also estimate the model using standard OLS estimators and stochastic frontier analysis.

A broader problem is that things that affect productivity might affect firm managers' choices regarding capital and labor. If this is the case, OLS, stochastic frontier estimation and LAD estimation will all produce biased estimates of the coefficients. Although several methods have been proposed to deal with this, they require panel data (Levinsohn and Petrin 2003; Olley and Pakes 1996)—something that is not available for most Enterprise Surveys.

A final concern is that for analysis with firms from multiple sub-sectors of manufacturing, the analysis essentially assumes that firms use the same production technologies. Since the analysis in this chapter includes firms from more than one sub-sector of manufacturing, a more flexible estimation technique that allows firms in different sector to use different production technologies is preferable. This can be done mechanically by including a full set of sector dummies and interacting these dummies with the measures of labor and capital to allow labor and capital intensities to be different in different sectors. The augmented production function then becomes:

$$\log(\text{VA}_{ij}) = \mu_c + \sum_j (\alpha_j + \beta_j \log(k_{ij}) + \gamma_j \log(l_{ij})) + \delta \text{FC}_{ij} + \varepsilon_{ij} + v_{ij} \quad (5)$$

The coefficients on labor and capital, β and γ , are assumed to vary between sectors. Sector dummies, α , are also included to allow for systematic differences in productivity across sectors. These models are sometimes referred to as the 'unrestricted models' while the models that assume identical production technologies are referred to as 'restricted models'

Methodological issues

There are some well-known problems, however, with this methodology.

1. For cross-country comparisons, value-added and capital have to be denominated in a common currency (e.g., US dollars in these examples). Because these two variables are denominated in local currency in the survey, cross-country comparisons of TE are vulnerable to exchange rate fluctuations. If the exchange rate is overvalued relative to its long-run equilibrium then TE might look artificially high. Although this can make it difficult to interpret differences in TE between countries, it is important to note that this shouldn't have a significant impact on the coefficients on firm-level variables.
2. The model essentially assumes that firms in different countries in the same sector use similar technologies.
3. Capital is more difficult to measure than labor for both theoretical and practical reasons. Since TE uses measured capital in its construction, it will generally be mismeasured when capital is mismeasured.

4. Ideally the measure of output would be a physical measure of output. In practice, however, this is difficult to obtain and, instead, most analyses including those using Enterprise Survey data use sales (i.e., output multiplied by unit price) as the dependent variable (i.e., a sales generating function).⁹¹ With firms producing heterogeneous products, this can be problematic if some have market power. That is, firms with market power that charge high prices for their output (e.g., monopolists) would appear more productive than a similar firm in competitive markets that charges lower prices.⁹²
5. Because estimates are calculated in a regression framework, it is less straightforward to calculate TE than labor productivity. One issue is that estimates of TE for groups of firms do not have natural units. For cross country comparisons, TE is shown as percent of TE in Lao PDR in 2012. For other group (e.g., exporters) differences are presented in terms of a base category (e.g., non-exporters).
6. As noted by Escribano and Guasch (2005), there is no single accepted approach to estimating TE. For this reason, following Escribano and Guasch, we estimated the model in several different ways to check the robustness of results. We therefore estimate the model in various ways making different assumptions about the error terms (i.e., we present stochastic frontier estimation, OLS, and LAD estimators).
7. Recent studies have noted that inputs in the production function (labor and capital) are endogenous (Levinsohn & Petrin, 2003; Olley & Pakes, 1996) and this can affect the estimation of TE. With panel data, it is possible to control for this using sophisticated econometric techniques instrumenting for inputs with intermediate inputs or investment. In this case, without a long panel, these methodologies cannot be implemented.

There are some additional problems associated with including measures of the investment climate in TE regressions.

1. The impact that different aspects of the investment climate have on firm productivity is likely to vary across countries—and results across countries have often varied in previous Investment Climate Assessments. For example, improvements in access to financing are likely to depend upon how developed financial markets are, how difficult it is to get access, how the financial sector is regulated, what informal institutions have evolved to make up for problems with formal credit markets, and many other factors. Because we are primarily interested in the effect that investment climate variables have on productivity in Lao PDR, we restrict the analysis to how firm characteristics affect productivity to Lao PDR. This ensures that we are looking at differences in productivity as they apply in Lao PDR.
2. Most firm-level variables and investment climate variables are potentially endogenous.⁹³ The results for the firm-level variables should therefore be treated with caution and should not be assumed to be causal. For the base estimates of country-level differences in productivity, we will use the coefficients from the model without additional control variables.

⁹¹ See, for example, the discussion in Pakes (2008).

⁹² See, for example, the discussion by Levinsohn (2008) on the Escribano-Guasch methodology (Escribano and Guasch 2005; Escribano and others 2008; Escribano and others 2005).

⁹³ For investment climate variables, many previous studies that use firm-level data from Enterprise Surveys to look at the effect of the investment climate on various measures of firm performance control for this by replacing or instrumenting the potentially endogenous investment climate variables with region-industry averages.

Several papers have discussed these issues in more depth including Escribano and others (2005) and Dollar and others (2005).⁹⁴ Data is pooled for the sub-sectors of manufacturing for which enough data were collected to estimate productivity.⁹⁵

Results

Table 6 shows the correlation between various country-level measures of TFP based on the framework described above, per capita GDP and labor productivity. In general the measures are highly correlated. The different measures of TFP are correlated at over a 90 percent level. Moreover, they are also highly correlated with labor productivity (correlations between 77 percent and 88 percent). Given that it is generally easier to calculate labor productivity than TFP and that labor productivity is not affected by potentially mismeasured capital, this is encouraging.

Table 6: Correlation between country-level TFP, Labor Productivity, and Per Capita GDP

	Per Capita GDP	Labor Productivity	TFP (OLS)	TFP (LAD)	TFP (Frontier)
Per Capita GDP	1.00				
Labor Productivity	0.82*** (0.00)	1.00			
TFP (OLS)	0.81*** (0.00)	0.87*** (0.00)	1.00		
TFP (LAD)	0.80*** (0.00)	0.88*** (0.00)	0.98*** (0.00)	1.00	
TFP (Frontier)	0.68*** (0.00)	0.77*** (0.00)	0.91*** (0.00)	0.90*** (0.00)	1.00

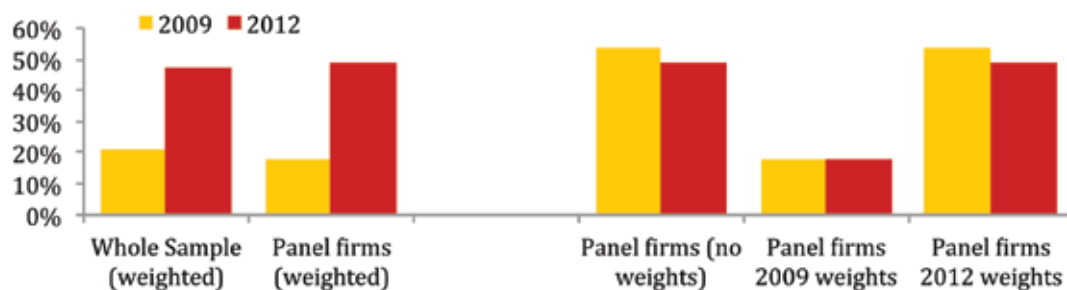
⁹⁴ See also comments on the Escribano-Guasch methodology by Levinsohn (2008), Pakes (2008) and Verhoogen (2008). Although the analysis is not identical to the analysis that these authors are commenting on, it shares many characteristics with it. Previous investment climate assessments have used multiple firm-level observations in a single regression. In most cases, the data for the investment climate variables and many of the firm characteristics is cross-sectional. That is, it was only asked for a single year. In contrast, productivity data was collected for three years. By replicating the investment climate variables, which were only collected as a cross-section, for each year for which there was productivity data, it was possible to run random effects panel regressions. Fixed effects could not be included because these would be collinear with the investment climate variables. In this case, productivity data were only collected for a single period making all analysis cross-sectional by necessity.

⁹⁵ The econometric approach that is used to estimate TE is similar to the econometric approach used in other Investment Climate Assessments in several ways. See, for example, the Investment Climate Assessment for South Africa (2007) or Investment Climate Assessment for Turkey (World Bank 2007a).

Annex 3: Exporting in 2009 and 2012

The Enterprise Survey data indicates a large increase in exporting between 2009 and 2012. In 2009, about 21 percent of manufacturing firms in Lao PDR reported that they exported some part of their output (see Figure 69). In 2012, about 47 percent of firms reported the same. This section looks at the data in more detail to try to assess what accounts for the large increase in exporting between the two years. To do this, we focus on panel firms (i.e., firms that were interviewed in both 2009 and 2012).

Figure 69: Comparison of 2009 and 2012 for exporting



Source: World Bank Enterprise Surveys

Note: Panel analysis only includes firms with complete data on exporting for both years.

When we look only at the panel firms, we see a similar pattern. Using sample weights, about 17 percent of panel firms reported exporting in 2009 and about 49 percent reported exporting in 2012. Again, this suggests a large increase in exporting between 2009 and 2012.

Interestingly, the large increase in the share of exporters in the weighted panel does not appear to be due to a large increase in exporting at individual firms. Of the 65 firms with data on exporting for both years, about 35 were involved in exporting in 2009 and about 32 were involved in exporting in 2012 (see Table 7). Moreover, most firms that exported in 2009 continued to export in 2012 (26 of 35) and most firms that did not export in 2009 did not export in 2012 (24 out of 30).

Table 7: Non-exporters and exporters among panel firms

		Non-exporters	2012 Exporters	Total
2009	Non-exporters	24	6	30
	Exporters	9	26	35
	Total	33	32	

Source: World Bank Enterprise Surveys Note: Counts are not weighted

Rather the shift appears to be due to shift in the weights. That is, the exporters receive much higher weights in 2012 than in 2009. Since the sample was not stratified based on export status, this suggests that there was a shift in sampling frame towards locations and size groups that tend to export more. This can be seen by applying the 2009 weights to the 2012 sample and vice versa. Using the 2009 weights, only about 18 percent of the 2012 sample were involved in exporting. Similarly, using the 2012 weights, about 53 percent of the 2009 sample were involved in exporting.

This suggests that shift in export status might be due to a shift in industrial structure towards export sectors. That is, it does not appear to be due to existing firms that were not previously exporting starting to export. It is possible that this could also be due to a reweighting of the sample towards these firms in the sample (rather than in the economy), but it is difficult to conclude this without an industrial census.

Annex 4: Problems with perceptions about the investment climate

Perhaps the most common approach to assessing what the binding constraints are to firm performance and growth in a country is to ask managers what they see as the biggest obstacles. The World Bank Enterprise Surveys include two types of questions about managers' perceptions. First, managers are asked to rate a series of investment climate constraints on a five-point scale ranging from 'no obstacle' to a 'very severe obstacle'. Typically, firms are asked to rate about 15-25 different areas in most Enterprise Surveys.⁹⁶ Second, managers are asked which constraints are the most serious constraints for the firm. For the second type of question, managers usually either note only the most serious obstacle or the top three obstacles. Although studies have used both measures of perceptions, most focus on the first type of questions ('ratings') rather than the second ('rankings').⁹⁷ For the 'ratings' measure, the severity of the constraint is usually assessed by calculating the percent of firms that rated each constraint as a 'major' or 'very severe' obstacle (the top two ratings on the five-point scale). Ranking constraints are usually based upon the percent of firms that said that each was the most serious problem.

Ranking of constraints based upon perceptions data

Although these perception-based questions are often used to identify binding constraints in a country, they are controversial. Dani Rodrik writes:

"These surveys are used increasingly to diagnose the main constraints facing firms and to identify policy reform priorities. If, for example, firms in country A complain most about the cost of finance while in B they complain about a skill shortage, this is taken as an indication country is constrained by poor access to finance while country B is constrained by poor human capital"⁹⁸

Although few investment climate assessments rely solely on perception-based measures to identify constraints, most use this information along with other information from the survey to do so.

Broadly speaking, criticisms of perception-based data can be grouped into three broad categories. The first concern is that firm managers might not be able to provide consistent and reliable information about specific investment climate problems.⁹⁹ The second is that it might not be possible to aggregate responses of individual managers in a reliable and consistent way. The final concern is that even if enterprise managers can provide consistent information and this can be aggregated that managers' concerns might not be useful for identifying constraints to private sector development and economic growth.

⁹⁶ In the most recent set of surveys, managers rank 16 obstacles: (i) electricity; (ii) telecommunications; (iii) transport; (iv) customs and trade regulation; (v) practices of competitors in the informal sector; (vi) access to land; (vii) crime, theft and disorder; (viii) access to finance; (ix) tax rates; (x) tax administration; (xi) business licensing and permits; (xii) political instability; (xiii) corruption; (xiv) courts; (xv) labor regulation; and (xvi) inadequately educated workers. The list of constraints—and how the constraints are phrased—has varied considerably across Enterprise Surveys. The 2012 survey for Lao PDR, for example, did not ask about political instability.

⁹⁷ The Zambia and Ethiopia ICAs (Regional Program on Enterprise Development, 2009b; World Bank, 2009b), for example, only discuss the first measure, while the Tanzania ICA discusses both but focuses on the first (Regional Program on Enterprise Development 2009a).

⁹⁸ See Dani Rodrik's weblog (Rodrik 2007)

⁹⁹ Bertrand and Mullainathan (2001), for example, argue that cognitive problems, the social acceptability of some responses and wrong, non- and soft attitudes all affect the reliability of subjective survey responses.

The most serious of the three concerns is the first. If managers' perceptions about specific area of the investment climate reflect something other than the actual constraints in that area, it will be difficult to rank constraints using this information.¹⁰⁰ Some evidence suggests that this is a concern. One indication that this is a problem is that managers do not always answer the ranking and rating questions consistently. For example, if a manager said that corruption was the most serious problem facing the firm, we would expect that same manager to rate corruption at least as high as any other constraint on the ratings. For example, it would not make sense for the manager to say that corruption is the most serious problem but to say that corruption was a minor constraint, while some other area such as electricity was a very serious constraint. Unfortunately, this is not always the case. In the 2012 Enterprise Survey for Lao PDR, about 42 percent of managers did not answer the questions consistently. This is higher than in other countries. On average, about 30 percent of managers have answered these questions inconsistently in the Enterprise Surveys completed since 2006.

Another concern is that managers' perceptions about specific areas of the investment climate reflect their overall level of confidence about the economy—not just their perceptions about that specific area of the investment climate. Clarke (2011a) found results consistent with this idea. When the World Bank's 2007-2008 Enterprise Survey was being carried out, a major electricity crisis hit South Africa. The crisis resulted in many more managers saying that power was a serious constraint on enterprise operations—the share rose from about 10 percent of managers before the crisis to close to 50 percent after the crisis. But managers also become more concerned about most other areas of the investment climate that were unrelated to the power crisis. Clarke (2011a) argued that this suggests that responses to questions about specific areas of the investment climate do not just reflect concern about that area of the investment climate. They also reflect overall business confidence.¹⁰¹

Although this suggests reason for concern—especially when using perception data for cross-country and cross-time comparisons—it is not clear that this would completely invalidate using perception-based data to identify binding constraints at a specific point in time. That is, although managers might become more concerned about all areas of the investment climate during a crisis, if their concern increases to similar degrees for all constraints, it might not affect relative rankings of constraints (including identification of the top constraints). This appears to be the case after the power crisis in South Africa. Clarke (2011a) notes that the relative rankings for constraints other than electricity remained similar after the crisis. That is, other than for electricity, a researcher using perception data to identify constraints would have identified similar constraints before and after the crisis.

Another broad response to these concerns is to note that managers' perceptions about specific areas of the investment climate appear to be correlated with objective measures of constraints. Hallward-Driemeier and Aterido (2009), for example, find that many subjective measures of the investment climate from the Enterprise Surveys are significantly correlated with objective measures

¹⁰⁰ A separate concern is whether perception-based data can be used to benchmark constraints across countries. If cultural differences make complaining about the investment climate less acceptable or make people more optimistic in some countries than others, this might be difficult. Similarly, firm managers might be more willing to complain about government policy in countries where political freedom is greater. Some evidence is consistent with this. Jensen and others (2010) show that non-response patterns and lying reduce measured corruption in politically repressive environments. Similar patterns also appear for less sensitive questions. In particular, Clarke and others (2007) show that firms appear to complain more about access to finance in countries that are more free politically than in other countries after controlling for other country and firm characteristics. Another concern is that respondents in different countries—or in the same country at different times—might use different yardsticks or reference points to assess the severity of constraints. Having five days each month without power might seem manageable for a firm in a low-income country in Africa that is used to more frequent cutoffs, but might be seen as a serious constraint in a high-income economy such as the United States where firms are used to reliable power supply. If yardsticks or reference points vary across countries or across time, the cross-country or cross-time comparisons will be difficult.

¹⁰¹ This does not imply that responses only reflect business confidence. If it did, we would expect firms to rank all concerns similarly depending on their level of overall confidence. Hallward-Driemeier and Aterido (2009) show that this is not the case—there is substantial variation in how individual respondents answer questions on different constraints.

of the investment climate.¹⁰² At the cross-country level, however, although the correlations are often statistically significant, they are not always high.

Even if managers can rank or rate constraints correctly, there is an additional problem of aggregating perceptions across firms. Constraints affect different firms to different degrees and perception-based data cannot be aggregated as easily as objective data (for example, costs measured in local currency). This makes it difficult to rank obstacles. For example, it is not clear whether an issue that one firm considers a very serious problem and another firm considers a minor problem, is more or less of a problem on aggregate than one that both consider a moderately serious problem. Or is a problem that one says is the top problem and another firm says is the seventh largest problem a greater or lesser constraint than one that both rank as the third greatest constraint?

There is some evidence that this is a concern. For example, as noted above, the Enterprise Surveys asks two questions related to perceptions. In Ethiopia, the top three constraints based upon the percent of firms saying each was a major problem were in order competition from informal firms, access to finance, and tax rates. Based upon the percent saying that each was the biggest problem they faced, the top four (in order) were access to finance, access to land, and competition from informal firms (World Bank, 2009b). The top constraints are similar—but not identical.¹⁰³ Overall, this suggests some reason for caution when using these rankings to rate constraints and identify binding constraints.

If firm managers can accurately answer questions about constraints and these can be aggregated in a meaningful way, then it should be possible to use their responses to measure at least what the managers see as the major problems they face. But this does not mean that this provides useful information on what the main constraints are to private sector development.

A third question is whether the perceptions of the enterprise managers interviewed in the survey reflect what the biggest constraints really are in the country. That is, these rankings might represent what the main problems that firm managers believe they face, but these beliefs might not describe what the true barriers are to broader private sector development or economic growth.

One reason why this might be the case is that the views of interviewed managers might not reflect the views of non-interviewed firms. In some cases, the omissions are due to conscious survey design—most surveys only cover part of the economy. For example, the World Bank's Enterprise Surveys are conducted in the main cities in each country—usually between 3 and 5 locations—and only cover firms in the manufacturing and service sectors with over five full-time employees.¹⁰⁴ So, for example, rural firms and firms in primary production (agriculture and mining) are excluded from the Enterprise Survey. If the concerns of small, medium-sized and large manufacturing and service firms do not reflect the concerns of microenterprises, rural firms, farms or mines, the results will need to be interpreted in this light.

¹⁰² Gelb and others (2006) find some significant correlations (e.g., for finance, power, and corruption) in surveys for Africa, but weaker correlations for measures related to regulation. Hellman and others (1999) show that perceptions about exchange rates and telecommunications infrastructure are correlated with objective data in these areas using data from Eastern Europe and Central Asia.

¹⁰³ In other cases, the concerns appear similar using the two measures. In Tanzania, for example, the top constraints based upon the percent of firms saying they were major or severe obstacles were electricity, access to finance, and tax rate. These were also the top three concerns based upon the percent of firms saying that they were the biggest problem that they faced (Regional Program on Enterprise Development, 2009a).

¹⁰⁴ Based upon the ISIC 3.1 categorization, the Enterprise Survey covers all manufacturing sectors (group D), construction (group F), retail and wholesale services (sub-groups 52 and 51 of group G), hotels and restaurants (group H), transport, storage, and communications (group I), and computer and related activities (sub-group 72 of group K). Survey design is discussed on the World Bank's Enterprise Survey website in more detail (www.enterprisesurveys.org). See also, World Bank (2009a).

In addition to not reflecting the concerns of firms that are excluded intentionally from the survey (e.g., firms in mining or agriculture or microenterprises), the survey might also not reflect the views of other omitted firms. One group of unintentionally omitted enterprises is potential new entrants. These firms might have different concerns about the investment climate than managers of existing firms. For example, managers of existing enterprises that have already completed registration procedures might not be concerned about entry costs even if they remain high. It is important, therefore, to think about how constraints might affect new and potential entrants as well as how they affect the managers of existing firms interviewed during the survey.

More broadly, another omitted group is firms that are unable to operate in a country due to problems in the investment climate. For example, in countries where the cost or reliability of power supply is particularly binding, firms that rely upon constant and cheap power might simply be unable to operate. Similarly, if the ports and custom facilities are particularly poor, very few firms might operate in export-oriented industries. Or if transportation costs are especially high or transportation infrastructure particularly poor in some areas, firms that produce perishable, fragile, or heavy goods might not be able to survive. Since you can only interview firms that exist—and by definition these are firms that have managed to overcome the binding constraints—surveys of existing firms may underestimate the barriers due to particularly binding constraints. Hausmann and Velasco (2005) illustrate this point with an analogy to camel and hippos. They note that the few animals that you find in the Sahara will be camels, which have adapted to life in the desert, rather than hippos, which depend heavily upon water. Asking the camels about problems associated with life in the desert might not adequately represent the views of the missing hippos.

Problems of omitted firms will potentially affect both cross-country rankings if the industrial structure is different in different countries and within-country rankings if the omitted firms have different views on certain areas of the investment climate. As discussed above, most evidence suggests that different types of firms face different constraints, potentially making these omissions important.

A separate problem unrelated to possible differences between the perceptions of interviewed firms and non-interviewed firms is the fact that enterprise managers' interests might not always be consistent with society's interests. Most managers would like subsidized credit or to be charged less for electricity or water if they believed that the cost of providing these services would be borne by someone else. They would also prefer that the burden of taxes falls on others rather than themselves. And most would be happy to face less competition even if the cost to society outweighed the benefits to their firm. It is important, therefore, to think about how policy changes will affect other stakeholders (e.g., workers and taxpayers) before adopting programs to reduce constraints.

These concerns emphasize that it is important to keep in mind the limits of perception-based data. In particular, it is important to keep in mind: (i) that things other than concerns about the specific area being asked about might affect perceptions; (ii) that asking questions and aggregating responses in different ways might affect cross-country and cross-time comparisons and affect within-country rankings; (iii) that the perceptions of the interviewed firms do not necessarily reflect the perceptions of firms that are not interviewed either due to conscious omissions or other reasons and (iv) that the views of the managers might not be accurate reflections of the problems facing the economy as a whole.¹⁰⁵ For this reason, it is useful to use alternative sources of information to try to identify constraints—at least to verify results from perception-based analysis.

¹⁰⁵ It is also important to remember that there are concerns about objective data as well—particularly for sensitive and difficult questions. For example, some work has shown that managers appear to find it difficult to answer questions that involve calculating percentages. Clarke (2011b) shows that managers in Sub-Saharan Africa that report bribes as a percentage of sales report bribe payments that are between four and fifteen times higher when they report them as a percent of sales than when they report them in monetary terms. Similarly, bribes payments as a percentage of sales are about ten times higher than in monetary terms in the 2012 Lao Enterprise Survey data. This does not appear to be due to outliers, differences between firms that report bribes in monetary terms and firms that report them as a percent of sales, and the sensitivity of the corruption question. Lying is also a problem. Azfar & Murrell (2009) show that even broad questions about corruption, including questions about 'firm like yours', suffer from serious problems with lying and non-response that can lead to substantial underestimates of the extent of corruption.

Testing the statistical significance of differences in perceptions about major constraints

Relatively few managers reported that various areas of the investment climate were serious obstacles. The most common concern was worker education and skills—about 18 percent of managers said that ‘inadequately educated workers’ was a serious obstacle. Given that the next obstacle was ranked as a serious obstacle by about 16 percent of firms it is interesting to see whether the differences between the top constraints are statistically significant.

For the most part, the differences between the percent of firms identifying ‘inadequately educated workers’ and the other most cited areas (corruption, electricity, crime, tax rates and trade regulations) as their most serious constraints are not statistically significant at a 5 percent level. This suggests that it is difficult to use the rating variables to definitively identify the top constraint.

Table 8: Statistical differences between proportions of firms saying areas are serious obstacles

	Percent saying skills are serious obstacle	Percent saying other area is serious obstacle	Difference	P-value
Corruption	17.2 %	18.1 %	-0.9 %	76.6 %
Skills	17.2 %	17.2 %	0.0 %	100.0 %
Electricity	17.2 %	15.4 %	1.9 %	49.0 %
Crime	17.2 %	14.9 %	2.4 %	37.2 %
Tax Rates	17.2 %	14.2 %	3.0 %	26.1 %
Trade Regulations	17.2 %	12.5 %	4.7 %*	7.5 %
Competition with informal firms	17.2 %	11.4 %	5.9 %**	2.2 %
Access to finance	17.2 %	11.3 %	6.0 %**	2.0 %
Tax administration	17.2 %	10.8 %	6.5 %**	1.1 %
Transportation	17.2 %	7.3 %	9.9 %***	0.0 %
Courts	17.2 %	6.1 %	11.2 %***	0.0 %
Business Regulations	17.2 %	5.1 %	12.2 %***	0.0 %
Labor Regulation	17.2 %	1.9 %	15.3 %***	0.0 %

Note: Proportions are unweighted since the STATA command `prtest` does not allow us to test the differences based on weighted proportions. For the most part, the percentages are fairly close to the weighted averages—although there are some small differences.

The combination of relatively low levels of concern about all areas of the investment climate (e.g., few firms reporting any area as a serious obstacle), the relatively small and statistically insignificant differences in the proportions of firms saying that areas were serious obstacles, and the inconsistent responses on the rankings and rating measures suggest that the perceptions data should be treated cautiously.

Annex 5: Econometric analysis of perceptions about the investment climate

An interesting question is whether there are systematic differences in perceptions about the investment climate among firms of different types. One way of doing this would be simply to look at how many firms of different types rated a particular investment climate issue as their biggest constraint or how many firms rated it as a major or very severe constraint.

Although this approach is intuitive, there are at least two problems associated with it. First, the subsamples of different types of firms are often relatively small. For example, there are only about 32 foreign-owned firms, 74 exporters and 42 large firms in the sample. This makes it difficult to assess whether differences are due to random variation in responses or due to actual systematic differences in perceptions.

Second, there are also systematic differences in other firm characteristics across types of firms. For example, exporters tend to be both larger than non-exporters and more likely to be foreign-owned. Whereas only about 18 percent of domestic firms export, about 38 percent of foreign-owned firms do (see Table 9). Similarly, whereas only about 10 percent of small firms export, more than half of large firms do the same (see Table 10). Differences in perceptions between managers of exporters and non-exporters might therefore reflect differences in size rather than whether their firm exports.

Table 9: Count of exporters and foreign-owned firms

	Domestic	Foreign-owned	Total
Non-exporter	279	20	299
Exporter	62	12	74
Total	341	32	373

Note: All data are unweighted counts.

Table 10: Count of exporters by firm size

	Small	Medium	Large	Total
Non-exporter	183	101	18	302
Exporter	21	29	24	74
Total	204	130	42	376

Note: All data are unweighted counts.

This appendix presents econometric results that deal with these issues. First, by using a multivariate regression approach, it is possible to look at differences in perceptions after controlling for other systematic differences between firms. Second, it is possible to look at the statistical significance of the results (i.e., to see whether it is likely that the differences are due to random variation).

Methodology

The methodology used in this section is similar to that used in a recent paper by Gelb and others (2006) that used data from seven countries in Africa (Kenya, Madagascar, Senegal, South Africa, Tanzania, Uganda, and Uganda) to look at differences in perceptions within and between countries. The

question of how different factors, including ownership, affect access to credit for microenterprises is examined by estimating different versions of the equation below:

$$\text{Perceptions}_i = \alpha + \beta \text{ Firm Characteristics}_i + \varepsilon_i$$

Perceptions are how large an obstacle the manager of firm i sees each area of the investment climate. The dependent variable takes five possible values (0 to 4) corresponding to “no obstacle”, “minor obstacle”, “moderate obstacle”, “major obstacle” and “very severe obstacle”.

$$\text{Reported Obstacle} = \begin{cases} 0 & -\infty & \mu_1 \\ 1 & \mu_1 & \mu_2 \\ 2 & \text{if } \mu_2 < \text{Perceptions} \leq \mu_3 & \\ 3 & \mu_3 & \mu_4 \\ 4 & \mu_4 & \infty \end{cases}$$

Since the dependent variable is ordered and categorical, the model is estimated as an ordered Probit model. The error term is assumed to be normally distributed. Because the dependent variable is a dummy variable, the model is estimated using standard maximum likelihood estimation. The independent variables are dummy variables indicating firm ownership (whether the firm is foreign owned), firm size, whether the firm exports, and a series of dummies indicating sector of operations. In addition to the regressions with the ratings variables, we run similar regressions indicating that the firm said that each area was the biggest problem that they faced. For these regressions, we focus on those areas of the investment climate that at least 10 percent of managers indicated were the biggest problem that they face. The reason for this is that when too few firm managers said it was the biggest problems many of the independent variables predict the firm manager’s response perfectly. That is, in many of these cases, there is too little variation in the dependent variable for the model to be useful (i.e., the dummy variable is mostly zero). Because the dependent variable is a simple dummy, we estimate the model as a Probit model using maximum-likelihood regressions.

Results

The basic results for ratings are shown in Table 11 (ratings for infrastructure, inputs and corruption), Table 12 (ratings for regulation and taxation) and Table 13 (rankings for the four main areas). In this section, we discuss the main econometric results.

Firm Size. The coefficients on the dummy variables indicating that the firm is medium-sized (20-99 employees) or large (100+ employees) were only statistically significant in a few cases. Since the omitted group is small enterprises (fewer than 20 employees), the coefficients can be interpreted as the difference between small firms and the other two groups. This suggests that for most areas of the investment climate, we cannot reject the null hypothesis that managers of medium and large firms have similar perceptions about the investment climate as managers of small firms. This could be because they have similar views or because the data are noisy enough to make it difficult to draw strong conclusions regarding differences in perceptions by firm size.

There are, however, two exceptions. First both medium and large firms appear to be more concerned about electricity than small firms. Moreover, managers of large firms also appear to be more concerned about electricity than managers of medium-sized firms (i.e., the point estimate of the coefficient is larger for large firms than for medium-sized firms.¹⁰⁶ Second, medium-sized firms appear to be more concerned about business registration than small firms. Although the coefficient for large firms is positive and about the same size as for medium-sized firms, it is statistically insignificant at conventional significance levels.

¹⁰⁶ However, we are unable to reject the null hypothesis that the two coefficient on the dummy variables for large and medium sized firms are the same size (p-value=0.39).

Firm Age. In contrast to the other variables, the coefficient on firm age is statistically significant in many of the regressions. In particular, managers of older firms were less likely to say that electricity, transportation, corruption, crime, access to finance, labor regulation and business registration were serious constraints than managers of younger firms. For the other constraints, the coefficients were also negative—although statistically insignificant.

It is possible that some of these differences are due to differences in actual experiences for older firms. For example, it might not be surprising that managers of older firms are less concerned about registration and licensing. Similarly, because they have had longer to establish business relationships with banks, older firms often find it easier to get bank credit. It is therefore possible that this is why they are less concerned about access to credit. The consistent negative coefficients, however, suggest that something else might be affecting the results. That is, it is possible that managers of better established firms have become more used to doing business in the country and, therefore, appear less concerned not because the constraints are different but because they have adapted their expectations.

Exporters. Managers of firms that export were more likely to say that inadequately educated workers and transportation were obstacles than other managers were. The coefficient on the dummy variable that indicates that the firm exports is statistically significant and positive in both cases.

Foreign-owned firms. The coefficients on foreign ownership are statistically insignificant in all regressions. This could reflect that differences in perceptions between foreign and domestic firms are due to things other than ownership (i.e., size or export status). However, it is important to note that there are relatively few foreign-owned firms in the sample. There are only about 33 majority foreign-owned firms in the sample—and only about 40 firms with any foreign ownership. In this respect, it is possible that the samples are just too small to find significant results.

Sector of Operations. The coefficient on the dummy indicating that the firm is a manufacturing firm is statistically significant in the regressions for electricity, access to finance, and tax rates and administration. Since the omitted dummy variable is for retail firms, this suggests that managers of manufacturing firms are more likely to be concerned about these areas of the investment climate than managers of retail firms. The coefficients are also statistically significantly different from the coefficient on service firms. Manufacturing firms were more likely to say that electricity, access to finance, and tax rates and administration were significant problems than service firms as well.

The coefficient on service firms is statistically significant in two other regressions: transportation and trade regulations. Since the coefficients are both negative, this suggests that these firms are less concerned about transportation and trade regulation than retail firms. The coefficients are also significantly different than the coefficients on the manufacturing dummies, indicating that they are also more concerned about these areas of the investment climate than manufacturing firms. This probably reflects that these firms are, on average, less tied into trade networks than other firms.

Year. As a final check, we pool data from the 2009 and 2012. We then add a year dummy to the regression surveys to see whether perceptions changed between the two years. The coefficient on the year dummy is statistically significant in most regressions indicating several changes over the three years (see Table 14 and Table 15), especially with respect to tax rates where perceptions improved significantly between the two years.



Photo by Remy Rossi / World Bank, 2013

Table 11: Effect of firm characteristics on perceptions about ratings (infrastructure and other inputs, crime and competition)

	Worker Education	Transportation	Electricity	Access to finance	Corruption	Crime
Observations	364	329	364	353	315	364
Medium-sized	0.269* (0.16)	-0.082 (0.19)	0.036 (0.17)	-0.031 (0.19)	-0.022 (0.20)	0.098 (0.16)
Large	0.186 (0.26)	-0.036 (0.24)	0.385* (0.22)	-0.104 (0.27)	-0.214 (0.27)	0.148 (0.22)
Age (natural log)	-0.125 (0.09)	-0.226** (0.10)	-0.158* (0.09)	-0.140 (0.09)	-0.261*** (0.09)	-0.160* (0.09)
Exporter	0.212 (0.20)	0.552*** (0.19)	0.495*** (0.16)	-0.156 (0.23)	0.069 (0.18)	0.054 (0.16)
Foreign-owned	0.084 (0.29)	0.323 (0.26)	0.065 (0.17)	-0.200 (0.25)	0.264 (0.28)	0.024 (0.23)
Manufacturing	-0.457* (0.24)	-0.117 (0.20)	0.417** (0.19)	0.337 (0.21)	0.311 (0.20)	-0.243 (0.21)
Services	-0.104 (0.20)	-0.482** (0.19)	0.116 (0.17)	0.110 (0.19)	-0.043 (0.21)	-0.119 (0.19)
Pseudo R-Squared	0.01	0.05	0.04	0.01	0.02	0.01

Source: World Bank's Enterprise Survey for Lao PDR (2012)

Note: All regressions are ordered Probit regressions. Dependent variables are index variables with: 0 indicating no obstacle, 1 indicating minor obstacle, 2 indicating moderate obstacle, 3 indicating major obstacle and 4 indicating very severe obstacle. Robust standard errors in parentheses.

***, **, * Statistically significant at 1 percent, 5 percent and 10 percent significance levels

Table 12: Effect of firm characteristics on perceptions about ratings (taxation, regulation and governance)

	Tax rates	Tax administration	Trade regulation	Labor regulation	Courts	Business registration	Informality
Observations	359	358	338	360	285	362	356
Medium-sized	0.195 (0.17)	0.041 (0.184)	0.053 (0.19)	0.090 (0.17)	0.136 (0.23)	0.206 (0.18)	0.194 (0.17)
Large	0.339 (0.26)	0.120 (0.259)	0.158 (0.24)	0.346 (0.25)	0.024 (0.27)	0.154 (0.25)	0.194 (0.23)
Age (natural log)	-0.062 (0.10)	-0.133* (0.074)	-0.136 (0.09)	-0.280** (0.11)	-0.143 (0.12)	-0.276*** (0.10)	0.037 (0.10)
Exporter	-0.187 (0.19)	-0.001 (0.160)	0.356* (0.20)	0.251 (0.21)	0.135 (0.20)	0.131 (0.19)	-0.079 (0.20)
Foreign-owned	0.263 (0.20)	0.130 (0.250)	0.188 (0.22)	0.026 (0.26)	-0.091 (0.25)	-0.016 (0.26)	-0.340 (0.23)
Manufacturing	0.423** (0.21)	0.487*** (0.174)	0.184 (0.18)	0.186 (0.23)	0.467* (0.24)	0.309 (0.22)	-0.345* (0.20)
Services	-0.193 (0.20)	-0.001 (0.172)	-0.295* (0.18)	-0.007 (0.21)	0.029 (0.22)	0.173 (0.21)	-0.509*** (0.17)
Pseudo R-Squared	0.03	0.02	0.03	0.03	0.01	0.02	0.01

Source: World Bank's Enterprise Survey for Lao PDR (2012)

Note: All regressions are ordered Probit regressions. Dependent variables are index variables with: 0 indicating no obstacle, 1 indicating minor obstacle, 2 indicating moderate obstacle, 3 indicating major obstacle and 4 indicating very severe obstacle. Robust standard errors in parentheses.
***, **, * Statistically significant at 1 percent, 5 percent and 10 percent significance levels

Table 13: Effect of firm characteristics on perceptions about the biggest obstacle

	Access to Finance	Tax Rates	Worker Education	Informality
Observations	313	313	313	313
Medium-sized	-0.509* (0.27)	-0.218 (0.24)	0.450* (0.25)	-0.204 (0.22)
Large	-0.809* (0.45)	-0.099 (0.33)	0.641* (0.34)	0.147 (0.33)
Age (natural log)	0.090 (0.17)	-0.135 (0.13)	0.566*** (0.15)	0.019 (0.13)
Exporter	0.169 (0.33)	-0.253 (0.26)	-0.033 (0.22)	-0.402 (0.27)
Foreign-owned	-0.314 (0.55)	-0.654 (0.43)	-0.021 (0.33)	-0.520 (0.34)
Manufacturing	1.065*** (0.35)	0.528* (0.31)	-0.536* (0.30)	-0.134 (0.31)
Services	0.959*** (0.32)	0.12 (0.29)	0.181 (0.28)	-0.450* (0.26)
Pseudo R-Squared	0.08	0.04	0.11	0.02

Source: World Bank Enterprise Survey for Lao PDR (2012)

Note: All regressions are Probit regressions. Dependent variables are binary variables with 1 indicating that the area is the firm's biggest constraint and 0 otherwise. Robust standard errors in parentheses.

***, **, * Statistically significant at 1 percent, 5 percent and 10 percent significance levels

Table 14: Effect of firm characteristics on perceptions about ratings (infrastructure and other inputs, crime and competition), pooled cross-section

	Worker Education	Transportation	Electricity	Access to finance	Corruption	Crime
Observations	724	689	724	711	593	724
2012 dummy	0.074 (0.14)	0.400** (0.18)	0.091 (0.14)	-0.231 (0.16)	-0.060 (0.16)	1.205*** (0.13)
Medium-sized	0.651*** (0.18)	0.172 (0.25)	0.225 (0.20)	0.160 (0.19)	0.132 (0.18)	0.213 (0.17)
Large	0.631*** (0.21)	0.284 (0.21)	0.248 (0.24)	0.103 (0.20)	0.429* (0.23)	0.209 (0.19)
Age (natural log)	-0.189 (0.12)	-0.285* (0.16)	-0.203 (0.13)	-0.218* (0.13)	-0.123 (0.12)	0.123 (0.11)
Exporter	-0.094 (0.15)	0.336* (0.19)	0.303 (0.19)	0.219 (0.23)	-0.295 (0.20)	-0.404** (0.19)
Foreign-owned	0.264 (0.25)	-0.263 (0.19)	0.311 (0.40)	-0.541** (0.24)	-0.202 (0.27)	-0.045 (0.20)
Manufacturing	-0.266 (0.21)	0.072 (0.21)	0.081 (0.25)	0.299 (0.22)	0.128 (0.28)	-0.041 (0.22)
Services	0.298 (0.23)	-0.198 (0.27)	-0.004 (0.23)	0.107 (0.23)	0.070 (0.27)	-0.338* (0.20)
Pseudo R-Squared	0.05	0.04	0.02	0.02	0.01	0.11

Source: World Bank's Enterprise Survey for Lao PDR (2009 and 2012)

Note: All regressions are ordered Probit regressions. Dependent variables are index variables with: 0 indicating no obstacle, 1 indicating minor obstacle, 2 indicating moderate obstacle, 3 indicating major obstacle and 4 indicating very severe obstacle. Robust standard errors in parentheses.

***, **, * Statistically significant at 1 percent, 5 percent and 10 percent significance levels

Table 15: Effect of firm characteristics on perceptions about ratings (taxation, regulation and governance), pooled cross-section

	Tax rates	Tax administration	Trade regulation	Labor regulation	Courts	Business registration	Informality
Observations	718	717	696	720	505	722	715
2012 dummy	-0.510*** (0.15)	0.007 (0.16)	0.802*** (0.16)	1.346*** (0.15)	-0.369** (0.18)	0.863*** (0.16)	0.684*** (0.16)
Medium-sized	0.246 (0.18)	0.333* (0.20)	0.101 (0.19)	0.118 (0.14)	0.594*** (0.19)	0.331* (0.18)	0.435** (0.18)
Large	0.490** (0.21)	0.361* (0.20)	0.106 (0.19)	0.453** (0.21)	0.506** (0.22)	0.472** (0.19)	0.353 (0.22)
Age (natural log)	0.012 (0.14)	-0.134 (0.13)	-0.016 (0.10)	-0.084 (0.12)	-0.123 (0.16)	-0.316*** (0.11)	-0.265*** (0.09)
Exporter	-0.010 (0.26)	0.216 (0.25)	0.394* (0.22)	0.104 (0.17)	0.080 (0.20)	-0.106 (0.18)	-0.182 (0.21)
Foreign-owned	-0.483* (0.26)	-0.337 (0.22)	-0.096 (0.18)	-0.059 (0.19)	-0.432 (0.27)	0.049 (0.19)	-0.122 (0.21)
Manufacturing	-0.322 (0.23)	-0.512** (0.22)	0.275 (0.23)	-0.191 (0.25)	-0.318 (0.30)	-0.001 (0.30)	-0.680*** (0.22)
Services	-0.167 (0.22)	-0.222 (0.24)	-0.554** (0.24)	-0.462** (0.18)	-0.097 (0.30)	-0.233 (0.22)	-0.876*** (0.23)
Pseudo R-Squared	0.02	0.02	0.08	0.16	0.03	0.08	0.07

Source: World Bank's Enterprise Survey for Lao PDR (2009 and 2012)

Note: All regressions are ordered Probit regressions. Dependent variables are index variables with: 0 indicating no obstacle, 1 indicating minor obstacle, 2 indicating moderate obstacle, 3 indicating major obstacle and 4 indicating very severe obstacle. Robust standard errors in parentheses.
***, **, * Statistically significant at 1 percent, 5 percent and 10 percent significance levels

Table 16: Effect of firm characteristics on perceptions about rankings, pooled cross-section

	Access to Finance	Tax Rates	Worker Education	Informality
Observations	673	673	673	673
2012 dummy	-0.299 (0.22)	-0.711*** (0.19)	0.017 (0.20)	0.988*** (0.16)
Medium-sized	-0.147 (0.23)	-0.917*** (0.20)	0.998*** (0.25)	0.310* (0.18)
Large	-0.368 (0.27)	-0.757** (0.29)	1.180*** (0.26)	0.186 (0.29)
Age (natural log)	-0.008 (0.13)	0.115 (0.15)	0.110 (0.18)	-0.049 (0.09)
Exporter	0.468 (0.30)	-0.124 (0.23)	-0.641** (0.26)	-0.081 (0.31)
Foreign-owned	-0.547* (0.29)	0.302 (0.40)	-0.233 (0.22)	0.146 (0.27)
Manufacturing	0.111 (0.30)	-0.321 (0.29)	0.645** (0.31)	-0.655*** (0.22)
Services	0.308 (0.32)	-0.169 (0.28)	0.745*** (0.25)	-0.815*** (0.18)
Pseudo R-Squared	0.03	0.12	0.16	0.13

Source: World Bank Enterprise Survey for Lao PDR (2012)

Note: All regressions are Probit regressions. Dependent variables are binary variables with 1 indicating that the area is the firm's biggest constraint and 0 otherwise. Robust standard errors in parentheses.

***, **, * Statistically significant at 1 percent, 5 percent and 10 percent significance levels



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