BACKGROUND

Economic growth depends on skills being put to productive use. In recent years, research on labor outcomes and education shows that there is a substantial mismatch between the supply and demand for skills around the world (Cappelli, 2014; McIntosh and Vignoles, 2001). This mismatch affects more than just wages or individual job satisfaction. Skills mismatches have an impact on productivity and growth at both the firm level and the macro-economic level (Quintini, 2014). Reports show that firms around the world consider skills challenges to be an impediment to the operation and development of their business. A cause for further concern is that this constraint seems to be disproportionately affecting the more dynamic and innovative employers, signifying a potentially negative impact on job creation and technological progress (World Bank, 2012).

Identifying the most relevant competencies and employable skills will help inform labor force and education policy. Current data that measure
demand for skills are largely based on the “stated preferences” of the employers surveyed. However, this approach does not provide enough evidence to show what skill set workers actually value or utilize in their role (Cunningham, Villaseñ or, and World Bank, 2014). It exposes the need to capture data that could suggest the “revealed preference” employers have for a certain skill—for example, when deciding to retain an employee beyond the probation period. It also exposes the need to identify the skills that existing employees use most regularly. This information could be used to guide policies targeted at skills development for the current workforce, re-employment strategies, preparation of workers entering the job market, and so on (Peterson et al., 2001).

The Skills Toward Employment and Productivity (STEP) Program Employer Survey (ES) aims to contribute knowledge and inform policies to improve the alignment between skills supply and demand. Tools developed for the STEP Program include an Employer Survey (ES), designed to identify demand for skills and constraints using data from employers; and a Household Survey, developed to measure the generic skills of the working-age population. This Jobs Note features an overview of the main findings from the STEP Employer Survey, Wave 1 and 2, in six countries (see Table 1).

The STEP Employer Survey is designed to enable a better understanding of how employers view the skills and characteristics of their workers, and the challenges employers face in recruiting workers with the desired skills. The survey collects information on the skills that employers look for when they recruit staff, the skills that staff most often apply, the skills-related constraints that employers face, and the way employers attempt to mitigate skills constraints, such as through training and exchanges with education and training providers.

The survey also captures firm characteristics, the environment in which employers operate, and the structure of their workforce.

### LEARNING HOW EMPLOYERS VIEW JOB MISMATCH IN THE ECONOMY

Employers report that a lack of sufficiently skilled job candidates poses the greatest constraint on recruitment. Across most countries surveyed, employers also report that their firms face a greater challenge hiring adequately skilled white-collar workers than blue-collar workers. The exception is Yunnan Province, China, where employers reported a slightly higher challenge recruiting blue-collar workers with required skill sets. Results from Armenia and Vietnam are illustrated in Figure 1.

Substantial shares of employers across all the countries surveyed report hiring difficulties in general—with the highest share being 95 percent of sampled firms in Yunnan Province, China, for both white- and blue-collar workers (Figure 2). A notable exception is Georgia, where fewer firms, sampled from the tourism, construction, IT, and telecommunication industries, found hiring to be a challenge.

There is a negative attitude toward the general education and TVET systems among employers, primarily because they believe these institutions are unable to produce candidates with the requisite “practical skills.” There is also concern regarding a lack of up-to-date knowledge and the general level of skills conveyed. It is worth noting, however, that few

### Table 1

**Countries surveyed in STEP ES Wave 1 and 2**

<table>
<thead>
<tr>
<th>Country</th>
<th>Survey Year</th>
<th>Sample Size</th>
<th>Economic Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan</td>
<td>2013</td>
<td>300 firms</td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>2012</td>
<td>600 firms</td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>2012</td>
<td>300 firms</td>
<td></td>
</tr>
<tr>
<td>Yunnan Province, China</td>
<td>2012</td>
<td>300 firms</td>
<td>Non-public Secondary and Tertiary sector enterprises</td>
</tr>
<tr>
<td>Armenia</td>
<td>2013</td>
<td>400 firms</td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>2013</td>
<td>400 firms</td>
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</tbody>
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employers feel that these systems produce graduates lacking “good attitudes;” the focus of their criticism is on job-specific technical skills (Figure 3).

Employers reporting hiring constraints, as well as those more critical of their workers’ qualifications, are more likely to consider the general education and TVET systems as “problematic.” This was true across all countries surveyed.

A substantial share of employers across countries surveyed feel that the general education system and the TVET system, in particular, pose a constraint to the operation and growth of their firms. The lowest share of employers holding this view is in Vietnam, but even there, as many as 48 percent and 58 percent of surveyed employers regard general education and TVET, respectively, as posing constraints. Compared to other labor constraints, however, the general education and TVET systems vary in significance.

Finding workers with previous experience is a significant labor constraint on business operation and growth. This difficulty in finding experienced workers is the top constraint in all countries surveyed except Armenia, where payroll taxes are considered a greater deterrent. This may also suggest further dissatisfaction with the level of skills the workforce currently possesses, as well as indicate a potential unwillingness to provide employees with training upon hiring.

Among other constraints to doing business, such as tax rates and political uncertainty, the perceived impacts of labor constraints vary substantially among the countries surveyed.

IDENTIFYING SKILLS VALUED BY EMPLOYERS: THE RIGHT SKILLS FOR THE JOB

Employers prioritize job-specific technical skills when they make retention decisions for both white- and blue-collar workers. The secondary criteria for retaining new hires vary among worker types (Figure 4). Across all countries surveyed, leadership skills and numeracy skills are ranked as most important to retaining white-collar workers. For blue-collar
workers, communication skills and the ability to work independently are most valued.

When asked to compare job-relevant skills against personality traits and personal characteristics, employers rank job-relevant skills such as communication and problem-solving on the job relatively higher. This result was the same across all countries surveyed. An interesting difference is that although preferences follow the same ranking pattern for the two types of workers, personal characteristics play a more pivotal role than personality traits for blue-collar workers. The range of skills captured by the STEP Employer Survey has been provided in Table 2.

Unsurprisingly, white-collar workers use a larger number of skills and apply them more regularly in their jobs. This holds true across almost all countries surveyed, with the exception of Yunnan Province, where blue-collar workers are reported to require the use of an equally high number of skills in their roles (Figure 5). A ranking of skills most used on the job reveals the top skills to be teamwork, numeracy, and, to a lesser extent, reading. This holds true for both types of workers.

The survey goes further to determine if these patterns exist in firms of different sizes. It finds that for white-collar workers, skills usage for each identified skill typically increases as firm size increases, but for blue-collar workers, the patterns of skill intensity and firm sizes vary across countries surveyed. For example, in Vietnam, blue-collar workers’ use of mathematics is higher in smaller firms (47 percent) than in larger firms (25 percent) (Figure 6a and 6b). This pattern varies with each identified skill and by country surveyed.

Both the incidence and the level of complexity of computer use are also higher for white-collar workers across all countries surveyed. The complexity of computer use also increases with firm size in all countries surveyed, with the exception of Armenia and Yunnan Province, where it is relatively higher in medium-sized firms. Both of these patterns are captured for the share of workers who are required to use a computer as part of their daily role Figures 7a and 7b illustrate results from Sri Lanka.

<table>
<thead>
<tr>
<th>Category</th>
<th>Skills</th>
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<tbody>
<tr>
<td>Job-Related Skills</td>
<td>• Reading and writing&lt;br&gt;• Numeracy&lt;br&gt;• Reading and writing in English / other foreign language&lt;br&gt;• Job-specific technical skills (including ICT skills)&lt;br&gt;• Communication&lt;br&gt;• Leadership&lt;br&gt;• Teamwork&lt;br&gt;• Creative and critical thinking&lt;br&gt;• Problem solving&lt;br&gt;• Working independently&lt;br&gt;• Time management</td>
</tr>
<tr>
<td>Personality Traits</td>
<td>• Conscientiousness (does a thorough job, is hard-working, does things efficiently)&lt;br&gt;• Emotional stability (is relaxed and handles stress well, doesn’t worry or get nervous easily)&lt;br&gt;• Agreeableness (forgives other people easily, is considerate and kind, is polite)&lt;br&gt;• Extraversion (is talkative, assertive outgoing, and sociable)&lt;br&gt;• Openness to experience (is original and comes up with new ideas, has an active imagination)</td>
</tr>
<tr>
<td>Personal Characteristics</td>
<td>• Age&lt;br&gt;• Appearance&lt;br&gt;• Ethnicity&lt;br&gt;• Gender&lt;br&gt;• Family relations or personal ties</td>
</tr>
</tbody>
</table>
Figure 4
The importance of job-specific skills for the retention of white- and blue-collar workers, Vietnam

Figure 5
Skills usage on the job by white- and blue-collar workers, Armenia

Figures 6a and 6b
Skills usage by firm size for each worker type, Sri Lanka and Vietnam

Figures 7a and 7b
Incidence of computer use and level of complexity for each worker type in large, medium, and small firms, Sri Lanka
CAPTURING REQUIREMENTS FOR INNOVATIVE FIRMS

Skill intensity is higher for both worker types in innovative firms across all countries surveyed. The share of workers applying skills regularly is reported to be higher in innovative firms. However, a few specific skills are exceptions, such as writing skills among white-collar workers and teamwork and use of foreign languages among blue-collar workers. These skills are reportedly used more often in traditional firms. Figure 8 illustrates the results from Georgia.

The same is the case with the level and complexity of computer use as illustrated in Figure 9 (showing results from Yunnan Province). Workers tend to use computers more regularly in innovative firms, and more of the use is typically for specialized and complex tasks, compared with traditional firms, where usage is reported to be more straightforward or only moderately complex.

“Critical thinking” is a unique skill that innovative firms value more highly than traditional firms when retaining new recruits for both worker types. For white-collar workers, innovative firms attach importance to technical skills, teamwork, and critical thinking. Similarly, for blue-collar workers, the skills these firms generally value more are critical thinking and leadership.

Significantly, innovative firms are more exposed than traditional ones to recruiting constraints, across all countries surveyed, when seeking white-collar workers. This observation also holds for recruiting blue-collar workers in all countries surveyed (Figure 10) except Azerbaijan, where traditional employers found recruiting for these positions a greater constraint. In the case of Azerbaijan, this observation is determined for all enterprises except those in these sectors: land, water, and air transportation; wood processing; pulp and paper; tobacco manufacturing; and recycling.
LEARNING IF AND HOW EMPLOYERS ARE SUPPLEMENTING THEIR TRAINING NEEDS

Across most countries surveyed, less than 25 percent of employers have regular interactions with education and training providers. The only exception is Yunnan Province, where close to 60 percent of employers have linkages with such institutes. Effective interactions with education and training providers are considered essential for improving the alignment of the demand for and supply of skills. However, in most countries surveyed, the share of employers engaging with these institutes ranges from 4 to 22 percent, and the engagement is most often related to white-collar workers. (Figure 11, showing results from Georgia and Azerbaijan).

Moreover, these interactions are primarily focused on serving employers’ short-term needs, such as recruiting, work placements, and employee training. Far fewer firms engage in curriculum development or student testing—that is, in efforts to structurally improve the quality and relevance of the supply of skills. Figure 12 illustrates results from Yunnan Province and Armenia.

Compared to traditional employers, innovative employers have more regular interactions with training institutes. In Georgia, innovative employers are four times as likely as traditional ones to have this contact.

Innovative firms provide significantly more internal and external training to their employees than traditional firms. This difference between innovative and traditional firms is most pronounced concerning external training opportunities. An interesting exception is Yunnan Province, where internal training for both types of workers is approximately equally common in traditional and innovative firms (Figure 13).

POLICY APPROACHES TOWARD CLOSING SKILLS GAPS AND REDUCING SKILLS MISMATCH

Skills have a direct impact on job productivity. The right skills are essential for an efficient labor market geared to improving outcomes for both employers
and workers. The overall skills development and utilization system must be flexible and responsive to the demands of employers. Cohesive policies must therefore be developed to reduce the skills gaps, skills shortages, and degree of mismatch in the current labor market.

Comprehensive labor market information is necessary to understand job creation trends and counter the recruitment constraints that employers face. Based on the results from the STEP Employer Survey, while skills gaps exist, they seem to affect job creation (hiring of new applicants) significantly more than productivity (skills gaps within the current workers)—implying a high degree of mismatch.

Labor market information (LMI) is required to guide student career choices and ensure individuals’ optimal educational investment. There is a need to involve employers and recruiters in the process of informing employment trends, discussing their need and expectations, and becoming partners in skills development. Governments can play a critical role in both generating and distributing labor market information (LMI) through a network of institutions and centers created to use this knowledge in a meaningful way. This approach can also ensure that the skills profiles of workers are responsive to demand.

Employer interaction and alignment with general education and TVET systems need to increase, with a focus on curriculum development and student testing for essential skills. Initial schooling provides the foundation for future skills development. Individuals need access to relevant and practical training opportunities in order to improve their competency. This also creates pathways for unemployed individuals to become upskilled or reskilled to enter alternate careers. Employers can play an active role in improving skills levels in the economy and within their own firms. Governments can also play an active role in financial and technical assistance, providing resources for strategic planning and training needs assessments, and developing training policies for the general education and TVET systems.

Looking to the future, efforts are needed to enable and facilitate innovation. High skill levels result in increased productivity, leading to an improved scope for innovation—which in turn leads to job creation. Accelerating technological change and a shifting economy structure changes production and skills needs. By identifying and connecting with innovative employers who are involved in adopting new technologies, new processes, new products, and new services, reported skills needs can inform policies. Public-private partnerships can help create and strengthen skills supply channels.

This Jobs Note was prepared by Maria Laura Sanchez Puerta (msanchezpuerta@worldbank.org), Senior Economist (Global Practice Social Protection and Labor, World Bank Group), and Anam Rizvi, Consultant (Jobs Group, World Bank Group). Issues highlighted here can be further investigated by researchers and policy makers interested in using survey tools to discuss skills availability and needs in the labor and education policy contexts.

The Jobs Note draws on the STEP Employer Survey Snapshot (2016)—Sanchez Puerta, Maria Laura; Valerio, Alexandria; Hoftijzer, Margo; Rizvi, Anam; Avato, Johanna. 2016. Employer Survey Snapshot 2016: Highlights from Six Low and Middle-Income Countries. World Bank, Washington, DC, World Bank.

For further details on the STEP Skills Measurement Program: http://microdata.worldbank.org/index.php/catalog/step/about

For the STEP ES country reports: http://microdata.worldbank.org/index.php/citations/?collection=step