



Just Jobs Index 2013

Version 0.1

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Fafo Institute for Applied International Studies, Oslo

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Introduction and summary

Jobs have taken center stage in the development agenda since the financial crisis of 2008. The Just Jobs Network works to promote just jobs—those complete with appropriate compensation, social protections, labor rights, and opportunities for economic mobility—as the basis for broad-based, sustainable economic growth.

As part of that effort, we have developed a new international measure of fair jobs—the Just Jobs Index—to broaden the global discourse on employment beyond the common emphasis on unemployment and to address job quality.

The Just Jobs Index, or JJI, illustrates that an initiative to examine the relative availability of just jobs in countries at different stages of development is not only possible but also insightful. At the same time, our efforts show just how far there is to go in filling in the data gaps for developing and developed countries alike.

The JJI assesses the nature and extent of fair jobs at a country level and creates a vivid picture of work opportunities, income and employment security, and equality of treatment and working conditions. It is the first international measure of its kind and offers an essential complement to various indices such as the human development index, or HDI, that aggregately measure development. The JJI can be a useful analytical tool to identify countries that are successfully providing quality employment opportunities. It can also help researchers identify the mechanisms by which economic growth translates into higher standards of human welfare and more efficient economic and social development, and vice versa.

In addition, the JJI reveals interconnections among the various dimensions of job creation and how working conditions can be improved. This enables policymakers to target resources and design policies more effectively.

The findings presented in this issue brief represent only the preliminary estimates and analyses of just jobs in many developed and developing nations across the

world. Despite the exciting possibilities, however, this version of the index is limited by the lack of data in both developing and developed countries.

Good policymaking requires good data. Without good data, we cannot accurately identify where policy is working and where it is failing. Unfortunately, the vast majority of countries do not have all of the relevant data that would allow researchers and policymakers to measure employment availability, opportunity, and quality. Dimensions such as social protection and social dialogue, which we struggled to include in this initial version of the JJI, could be more fully incorporated into future versions if the data become available.

This issue brief summarizes the new index's preliminary findings, explains how the index was constructed, and suggests ways the index might communicate core findings that governments, development agencies, and other stakeholders can use to address the jobs concern and identify relevant policy measures.

Initial findings using the Just Jobs Index

We analyzed data for 183 countries for 14 indicators from 2000 to 2010. The list of indicators and their groupings are shown in Table 1.

The results presented here should be considered the first draft analysis of JJI rather than a final and comprehensive ranking. With that in mind, the current version of the index is labeled as version 0.1. Key findings of the analysis of JJI version 0.1 are summarized below. Once the full list of countries is included and relevant sensitivity analysis is made, it will be upgraded to version 1.0.¹ Additional efforts are needed to gather hard-to-find data such as information on social security and social dialogue. The integration of that data will enable a JJI upgrade to version 2.0.

TABLE 1
Just Jobs Index dimensions and indicators

Employment			Rights at work	
Employment opportunities	Income security	Employment security	Safety at work and healthy work conditions	Equality of treatment and opportunity
<ul style="list-style-type: none"> • Labor-force participation rate • Unemployment rate • Youth-unemployment rate • Wage and salaried workers 	<ul style="list-style-type: none"> • Average real wages • GDP per capita in purchasing-power parities, or PPPs 	<ul style="list-style-type: none"> • Vulnerable employment rate • Share of employment by occupation • Status in self-employment 	<ul style="list-style-type: none"> • Usual hours worked: 49-59 hours • Usual hours worked: 60 or more hours 	<ul style="list-style-type: none"> • Female-to-male employment rate disparity • Female-to-male unemployment rate disparity • Number of professional women to professional men disparity

The number of countries included in the index computation differs by year and subdimension, both of which determine the availability of data. As Table 2 shows, the number of countries covered by each subdimension varies by year. Out of the 183 countries for which data were collected, the “Employment opportunities” dimension had the highest data availability consistently across the years. The data on subdimension 4, “Safety at work and healthy work conditions,” were limited, however, and determined the list of countries included in the overall index.

We constructed two indices based on data availability in the subdimensions. The first one is an overall index, JJI 1, which uses all five dimensions, resulting in a maximum of 39 countries for 2004 and 2005. The second index, JJI 2, is constructed excluding subdimensions 2 and 4, where country data availability is limited. The number of countries covered by each of these indices is shown in Table 3.

The full index captures distinct and broader aspects of the just-jobs concept such as employment security, albeit with limited data availability for most countries, including developing nations—see Table 4. Among countries where data were available, European countries generally experienced the best just jobs performance in 2000 and from 2005 through 2009. Countries in Central and South Asia, including Turkey and Pakistan, and in Africa, including Mauritius, ranked lowest in 2005.

TABLE 2
Subdimensions and number of countries (N) covered by JJI

Year	Employment			Rights at work	
	Employment opportunities	Income security	Employment security	Safety at work and healthy work conditions	Equality of treatment and opportunity
2000	83	75	78	41	81
2001	92	83	83	45	87
2002	93	87	83	40	87
2003	94	88	83	49	88
2004	97	94	88	49	93
2005	97	101	90	47	95
2006	100	103	93	30	93
2007	92	99	89	31	89
2008	88	93	81	31	80
2009	82	84	69	29	70
2010	59	51	35	28	35

TABLE 3
Subdimensions and number of countries (N) covered by JJI

Year	Overall JJI (JJI 1)	JJI with 3 subdimensions (JJI 2)
2000	25	65
2001	31	73
2002	30	72
2003	38	74
2004	39	78
2005	39	77
2006	26	80
2007	26	79
2008	25	72
2009	22	63
2010	11	33

TABLE 4
JJI ranks for selected years

Rank	2000	2005	2006	2007	2008	2009
1	Luxembourg	Luxembourg	Luxembourg	Luxembourg	Luxembourg	Luxembourg
2	Denmark	Norway	Norway	Norway	Norway	Norway
3	Netherlands	Sweden	Netherlands	Sweden	Sweden	Denmark
4	Austria	Netherlands	Sweden	Denmark	Denmark	Sweden
5	Australia	Denmark	Denmark	Finland	Finland	Australia
6	United Kingdom	Ireland	Ireland	Ireland	Australia	Finland
7	Belgium	Australia	Australia	Australia	Ireland	Germany
8	Germany	Finland	Finland	New Zealand	Belgium	Austria
9	Israel	Belgium	New Zealand	Belgium	Germany	Belgium
10	France	United Kingdom	United Kingdom	United Kingdom	New Zealand	New Zealand
11	New Zealand	New Zealand	Belgium	Germany	Austria	United Kingdom
12	Portugal	Austria	Germany	Austria	United Kingdom	France
13	Hungary	Germany	Austria	Israel	France	Slovenia
14	Malta	Israel	Israel	France	Israel	Hungary
15	Cyprus	France	France	Hungary	Estonia	Estonia
16	Spain	Cyprus	Estonia	Slovenia	Slovenia	Czech Republic
17	Italy	Hungary	Hungary	Czech Republic	Hungary	Portugal
18	Bulgaria	Slovenia	Slovenia	Estonia	Czech Republic	Spain
19	Estonia	Estonia	Spain	Spain	Spain	Slovakia
20	Lithuania	Macau	Czech Republic	Portugal	Portugal	Italy

Due to the lack of data availability for two dimensions of the index, a second indicator was constructed using employment opportunities, employment security, and equality of treatment and opportunity. This enabled a larger number of countries to be included in the index and provided better comparisons from 2000 to 2010. The results for selected years and their rankings based on the reduced form of the index are shown in Table 5.

Rank	2000	2005	2006	2007	2008	2009
21	Croatia	Spain	Portugal	Slovakia	Slovakia	Poland
22	Macau	Czech Republic	Slovakia	Italy	Italy	Turkey
23	Panama	Portugal	Italy	Greece	Poland	
24	Peru	Lithuania	Greece	Poland	Armenia	
25	Tanzania	Slovakia	Poland	Armenia	Turkey	
26		Malta	Turkey	Turkey		
27		Italy				
28		Bulgaria				
29		Croatia				
30		Greece				
31		Moldova				
32		Mexico				
33		Poland				
34		Panama				
35		Peru				
36		Georgia				
37		Mauritius				
38		Turkey				
39		Pakistan				

Most of the European countries performed better using the reduced form of the index; Iceland ranked first in all five selected years. One interesting finding is that countries such as Egypt and Syria ranked in the bottom five during the 2006 to 2009 period, suggesting a connection to the social-economic sources of the 2011 uprisings in Egypt and Syria. Just-jobs performance is lowest in Pakistan, which ranked at the bottom consistently from 2006 through 2009.

TABLE 5
JJI ranks for selected years (excluding two dimensions)

Rank	2000	2005	2007	2008	2009
1	Iceland	Iceland	Iceland	Iceland	Iceland
2	Sweden	Australia	Sweden	Norway	Netherlands
3	Australia	Sweden	Norway	Netherlands	Norway
4	Denmark	Netherlands	Netherlands	Sweden	Australia
5	Norway	Denmark	Australia	Australia	Denmark
6	United Kingdom	Norway	Denmark	Denmark	Sweden
7	Netherlands	New Zealand	Finland	Finland	Luxembourg
8	Austria	Finland	New Zealand	New Zealand	New Zealand
9	Israel	Russian Federation	Luxembourg	Israel	Finland
10	Ireland	Ireland	Russian Federation	Russian Federation	Switzerland
11	Finland	Israel	Israel	Luxembourg	Macau
12	Singapore	Luxembourg	Macau	Switzerland	Israel
13	Russian Federation	Switzerland	Cyprus	Macau	Russian Federation
14	Switzerland	United Kingdom	Ireland	Cyprus	Austria
15	New Zealand	Macau	Switzerland	Austria	Cyprus
16	Germany	Kuwait	United Kingdom	United Kingdom	Germany
17	Czech Republic	Singapore	Singapore	Ireland	Singapore
18	Belgium	Belgium	Belgium	Singapore	United Kingdom
19	Luxembourg	Cyprus	Austria	Germany	Belgium
20	Barbados	Austria	Germany	Belgium	Slovenia
21	Hungary	Germany	Czech Republic	France	France
22	Macau	France	France	Czech Republic	Czech Republic
23	Slovenia	Estonia	Hungary	Slovenia	Ireland
24	Portugal	Hungary	Slovenia	Estonia	Hong Kong
25	Hong Kong	United Arab Emirates	Hong Kong	Hungary	Latvia
26	France	Czech Republic	Estonia	Latvia	Hungary
27	Cyprus	Slovenia	Spain	Hong Kong	Costa Rica
28	Malta	Hong Kong	Latvia	Portugal	Portugal
29	Malaysia	Spain	Lithuania	Malta	Malta
30	Slovakia	Portugal	Slovakia	Slovakia	Korea, South
31	Estonia	Slovakia	Portugal	Spain	Malaysia

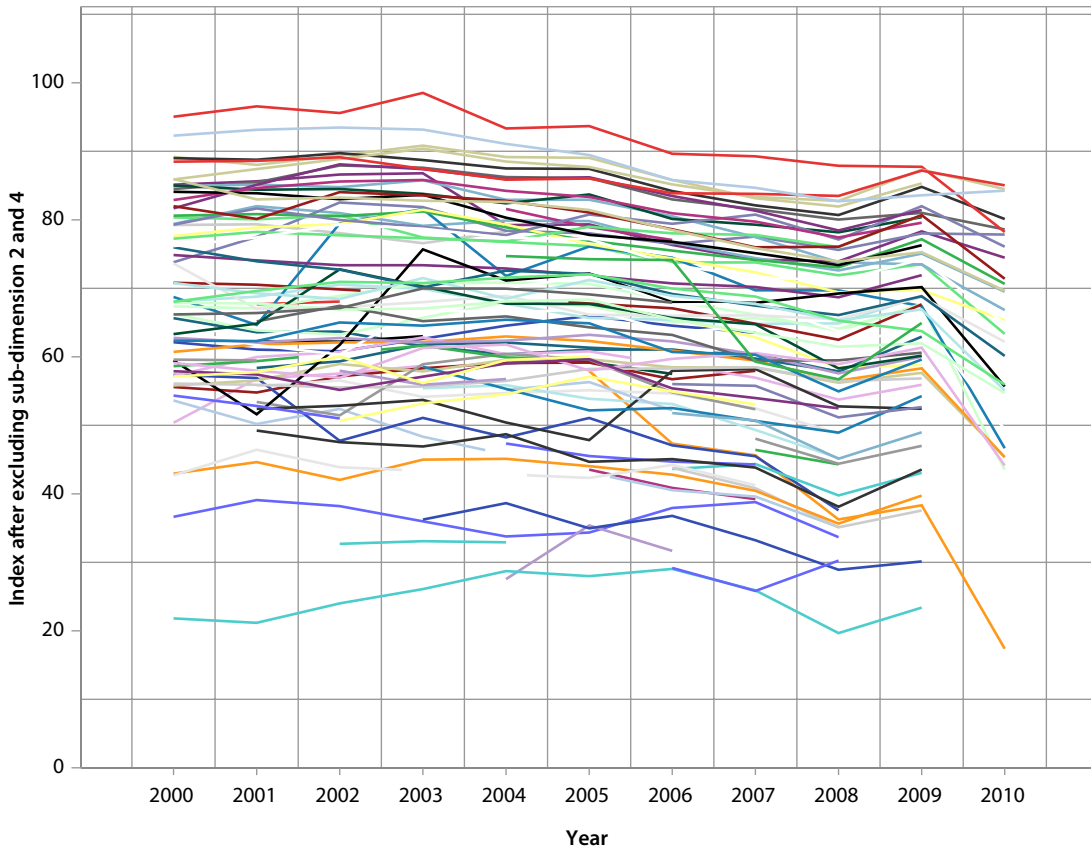
Rank	2000	2005	2007	2008	2009
32	Costa Rica	Korea, South	Korea, South	Costa Rica	Bulgaria
33	Spain	Latvia	Malta	Bulgaria	Estonia
34	Romania	Trinidad and Tobago	Bulgaria	Korea, South	Slovakia
35	Korea, South	Lithuania	Malaysia	Lithuania	Lithuania
36	Bulgaria	Malaysia	Costa Rica	Malaysia	United Arab Emirates
37	Trinidad and Tobago	Malta	Peru	Croatia	Croatia
38	Brazil	Azerbaijan	Croatia	Romania	Spain
39	Croatia	Peru	Romania	Moldova	Kazakhstan
40	Lithuania	Romania	Argentina	Poland	Romania
41	Peru	Costa Rica	Azerbaijan	Azerbaijan	Poland
42	Mexico	Bulgaria	Poland	Peru	Moldova
43	Thailand	Argentina	Mexico	Brazil	Peru
44	Argentina	Croatia	Kazakhstan	Kazakhstan	Mexico
45	Italy	Moldova	Thailand	Mexico	Thailand
46	Saint Lucia	Mexico	Brazil	United Arab Emirates	Azerbaijan
47	Latvia	Brazil	Italy	Italy	Italy
48	Poland	Italy	Moldova	Panama	Greece
49	Namibia	Thailand	United Arab Emirates	Greece	Panama
50	Uruguay	Poland	Panama	Thailand	Jamaica
51	Georgia	Greece	Greece	Jamaica	Mauritius
52	Jamaica	Panama	Macedonia	Macedonia	South Africa
53	Vietnam	Macedonia	Ecuador	Uruguay	Macedonia
54	Panama	Belize	Jamaica	South Africa	Paraguay
55	Greece	Ecuador	South Africa	Mauritius	Cambodia
56	Ecuador	South Africa	Uruguay	El Salvador	Sri Lanka
57	Maldives	Uruguay	Nicaragua	Lebanon	Indonesia
58	Dominican Republic	Nicaragua	El Salvador	Paraguay	Turkey
59	Bolivia	Kyrgyzstan	Kyrgyzstan	Cambodia	Philippines
60	Turkey	El Salvador	Paraguay	Armenia	Bhutan
61	Philippines	Lebanon	Mauritius	Turkey	Iran

Rank	2000	2005	2007	2008	2009
62	Tanzania	Mauritius	Lebanon	Indonesia	Morocco
63	Egypt	Madagascar	Cambodia	Sri Lanka	Pakistan
64	Algeria	Paraguay	Armenia	Georgia	
65		Bhutan	Bhutan	Bhutan	
66		Georgia	Georgia	Philippines	
67		Sri Lanka	Indonesia	Dominican Republic	
68		Turkey	Maldives	Iran	
69		Maldives	Turkey	Egypt	
70		Tanzania	Sri Lanka	Syria	
71		Iran	Tanzania	Morocco	
72		Indonesia	Iran	Pakistan	
73		Philippines	Philippines		
74		Burkina Faso	Dominican Republic		
75		Dominican Republic	Burkina Faso		
76		Egypt	Egypt		
77		Morocco	Morocco		
78		Ethiopia	Pakistan		
79		Syria	Syria		
80		Pakistan			

Trends in just jobs

The need for countries to focus not only on creating jobs but also on creating quality jobs—with appropriate compensation, rights, and economic security—is evident when examining the trends of countries’ performances in just-jobs measures. As shown in Figure 1, just-jobs performances declined fairly steadily over the 2006 to 2010 period and consistently across countries in the reduced index. This indicates that addressing the just-jobs question—especially for the countries ranking low on these just-jobs measures—will require a concerted global effort.

FIGURE 1
JJI trend by year (excluding dimensions 2 and 4)



Countries

- Algeria
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahrain
- Bangladesh
- Barbados
- Belgium
- Belize
- Bhutan
- Bolivia
- Brazil
- Bulgaria
- Burkina Faso
- Cambodia
- Chile
- Costa Rica
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Dominican Republic
- Ecuador
- Egypt
- El Salvador
- Estonia
- Ethiopia
- Finland
- France
- Georgia
- Germany
- Greece
- Hong Kong
- Hungary
- Iceland
- Indonesia
- Iran
- Ireland
- Israel
- Italy
- Jamaica
- Kazakhstan
- Korea, South
- Kuwait
- Kyrgyzstan
- Latvia
- Lebanon
- Lithuania
- Luxembourg
- Macau
- Macedonia
- Madagascar
- Malta
- Mali
- Mexico
- Moldova
- Mongolia
- Morocco
- Namibia
- Netherlands
- New Zealand
- Nicaragua
- Norway
- Pakistan
- Panama
- Paraguay
- Peru
- Philippines
- Poland
- Portugal
- Romania
- Russian Federation
- Saint Lucia
- Singapore
- Slovakia
- Slovenia
- South Africa
- Spain
- Sri Lanka
- Sweden
- Switzerland
- Syria
- Tanzania
- Thailand
- Tonga
- Trinidad and Tobago
- Turkey
- Uganda
- United Arab Emirates
- United Kingdom
- Uruguay
- Vietnam

Basic overview

Indicators are generally used to measure the extent to which a specified objective or outcome was achieved. They can thus be used to assess performance and evaluate progress over time in the achievement of specified objectives and can be helpful in making cross-country comparisons.

Currently, there is no single measure of just jobs, but a combination of several indicators may give a relatively accurate measure. Looking at a single indicator does not provide a comprehensive understanding of jobs. This is the case with social security, where the proportion of people receiving different types of benefits is captured, but there may be concern regarding the quality and effectiveness of services. In order to obtain an accurate picture of just jobs, therefore, it is necessary to combine several indicators into an overall index.

One of the basic considerations in constructing an index is the issue of relevance of the selected indicators. To this end, the JJI is made to be relevant to everyone—people in low-, middle-, and high-income countries irrespective of the type of work or industry.

The JJI is primarily anchored with the International Labour Organization's decent work dimensions: employment, social security, basic rights, and social dialogue. Due to the lack of data for the social security and social dialogue dimensions, however, the current version of the index includes only the employment and basic-rights dimensions.

Dimension 1: Employment

The operational definition of the employment dimension includes indicators in three subdimensions: employment opportunities, income security, and employment security.

Employment opportunities are defined both positively and negatively. In a positive sense, the subdimension refers to employment and labor-force activity among the relevant population base. In a negative sense, it includes unemployment and lack of employment opportunities for specific groups of the populations such as youth. The following indicators are used to measure the employment opportunities subdimension:

1. **Labor-force participation rate:** the proportion of the population ages 15 and older that is economically active—all people who supply labor for the production of goods and services during a specified period.
2. **Unemployment rate:** the share of the labor force that is without work but available for and seeking employment.
3. **Youth-unemployment rate:** youth unemployment as a percentage of the youth labor force.
4. **Wage and salaried workers:** those workers who hold the type of jobs defined as “paid employment jobs,” where the incumbents hold explicit—written or oral—or implicit employment contracts that give them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work.

Income security refers to the notion of an “adequate living wage” and can be measured using indicators of rate of pay and GDP per capita. The following indicators are used to measure the income security subdimension:

5. **Average real wages:** the goods and services that can be purchased with wages or provided as wages, expressed in real terms by adjusting for changes in consumer prices.²
6. **GDP per capita in purchasing-power parities, or PPPs:** gross domestic product converted to international dollars using purchasing-power parity rates. An international dollar has the same purchasing power over GDP as a U.S. dollar has in the United States. Purchasing-power parities are the rates of currency conversion that eliminate the differences in price levels between countries.

Employment security refers to the stability and security of work and is operationalized using the following indicators:

7. **Vulnerable employment rate:** unpaid family workers and own-account workers as a percentage of total employment. Own-account workers are those who operate their own economic enterprise or engage independently in a profession or trade and hire no employees.³

8. **Share of employment by occupation:** percentage of professional occupations in total employment with the groups defined by the classification, according to the International Standard Classification of Occupations.⁴
9. **Employment by status in self-employment:** percentage of self-employed workers and presented as percentages of the total employed.

Dimension 2: Rights at work

The operational definition of the second dimension—rights at work—includes two subdimensions: safety at work and healthy work conditions, and equality of treatment and opportunity.

Safety at work and healthy work conditions are defined as the general conditions that preserve and promote the physical and psychological integrity of workers. These are operationalized using two indicators:

10. **Usual hours worked:** the “usual hours worked” per week identifies the most common weekly working schedule of a person in employment over a selected period. The recently adopted internationally agreed-upon statistical definition of “usual hours worked” refers to the hours worked in any job during a short period such as one week, a longer period of time, or more technically as the modal value of the “actual hours worked” per week over a longer observation period. The definition is applicable to all types of jobs, even those where the worker does not possess a working contract such as in small-scale or family enterprises or in self-employment. “Usual hours worked” includes overtime that occurs systematically every day or week and excludes time not worked on a usual basis. This indicator is operationalized by share of persons working between 49 and 59 hours.
11. **Usual hours worked:** the same definition as indicator 10, operationalized by the share of people working 60 or more hours.

Equality of treatment and opportunity refers to the equality of opportunity in employment, occupation, and equal pay for work of equal value. This subdimension is operationalized using three indicators:

12. **Female-to-male employment rate disparity:** defined as indicator 2 and calculated as an absolute value of the difference from 100.

- 13. Female-to-male unemployment rate disparity:** defined as indicator 2 for female population and calculated as an absolute value of the difference from 100.
- 14. Number of professional women to the number of professional men disparity:** refers to the definition of indicator 8 and is defined by referring to the female share of employment.

Constructing the index

Constructing an index raises the question of how much weight should be given to different indicators and which formula should be used for combining qualitative and quantitative indicators. The Just Jobs Index attempts to demonstrate that it is possible to develop overall indices of fair-jobs performance. This involves decisions on whether to include quantitative and qualitative indicators, the weight to be given to different indicators, and their combination into an overall index.

The construction of the JJI starts with a simple approach to help assess the quality of the data, as well as to interpret the results in a manner that is free from methodological complexities. The variables used to construct the JJI are measured in different units and with different ranges. Average wages, for example, are measured differently from unemployment rates. The indicators must therefore be standardized before being combined into a single component of the JJI. We standardize each indicator on a scale of 0 to 10, with 0 indicating the worst and 10 indicating the best score.

The standardization is made based on specific formulas depending on the value and type of indicator and its implications toward the index. Each of the indicators in the five subdimensions is related negatively or positively to what they measure. The summary of the indicators and their implication is presented below. Based on their implication, the standardization formula is applied.

For indicators with positive implications for the index—meaning a higher value indicates a better condition—such as hourly wage rates, we use the standardization as:

$$I_i = \frac{X_i - \min\{X\}}{\max\{X\} - \min\{X\}} \times S$$

TABLE 6
Inside the JJI

Indicator ID	Indicator description	Implications
IND 1	Labor-force participation rate	Positive
IND 2	Unemployment rate	Negative
IND 3	Youth-unemployment rate	Negative
IND 4	Wage and salaried workers	Positive
IND 5	Average real wages	Positive
IND 6	GDP per capita in PPP	Positive
IND 7	Vulnerable employment rate	Negative
IND 8	Share of employment by occupation	Positive
IND 9	Employment by status in self-employment	Positive
IND 10	Usual hours worked: 49 to 59 hours	Negative
IND 11	Usual hours worked: 60 or more hours	Negative
IND 12	Female-to-male employment rate disparity	Negative
IND 13	Female-to-male unemployment rate disparity	Negative
IND 14	Number of professional women to professional men disparity	Negative

in which I_i represents the value of the standardized indicator for country i ; X_i is the actual value of the relevant variable for country i ; $\min \{X\}$ is the minimum value of the variable across all countries; $\max\{X\}$ is the maximum value of the variable across all countries; and S is the maximum value of the range for the standardized indicator.

For indicators with a negative implication to the index—meaning higher value indicates a worse condition—such as unemployment rate, the standardization will be conducted as:

$$I_i = \frac{\max\{X\} - X_i}{\max\{X\} - \min \{X\}} \times S$$

The score for each of the dimensions of the JJI will be calculated from the simple arithmetic average of all the standardized indicators associated with that component. Once all indicators are standardized, an additive index is constructed.

For the purpose of constructing the index, we used the following steps:

1. Collection of data on 121 indicators of decent work dimensions from secondary data sources for the 11 years from 2000 to 2010
2. Data cleaning and refining of the indicators, resulting in 14 indicators for five subdimensions of just jobs
3. Imputations of missing data for various countries
4. Construction of an additive Just Jobs Index

Empirical properties of index components

In this section, we examine individual components of the indices described earlier to understand the underlying mechanisms that led to the ranking of countries. The following panel shows the trend of components of the index by economic region. Opportunities for work and income security are dimensions that contributed to the decline in trends exhibited earlier.

FIGURE 2
Opportunities for work

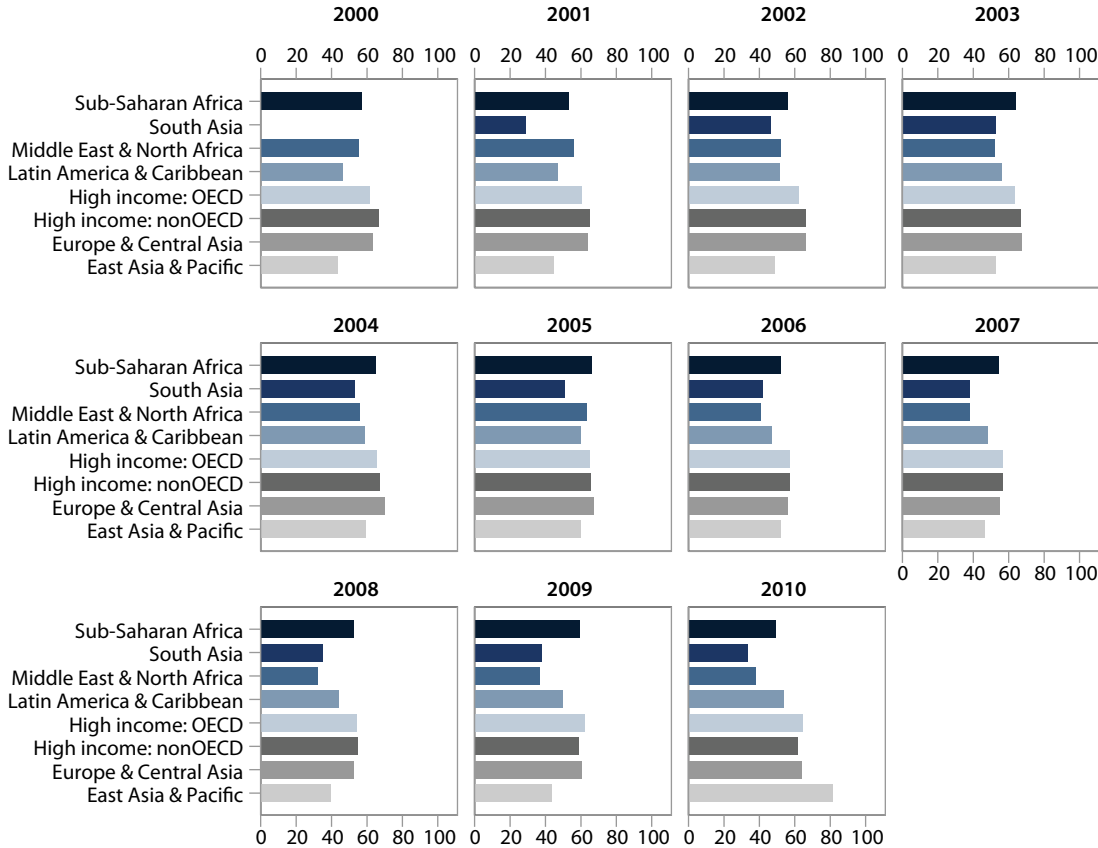


FIGURE 3
Income security

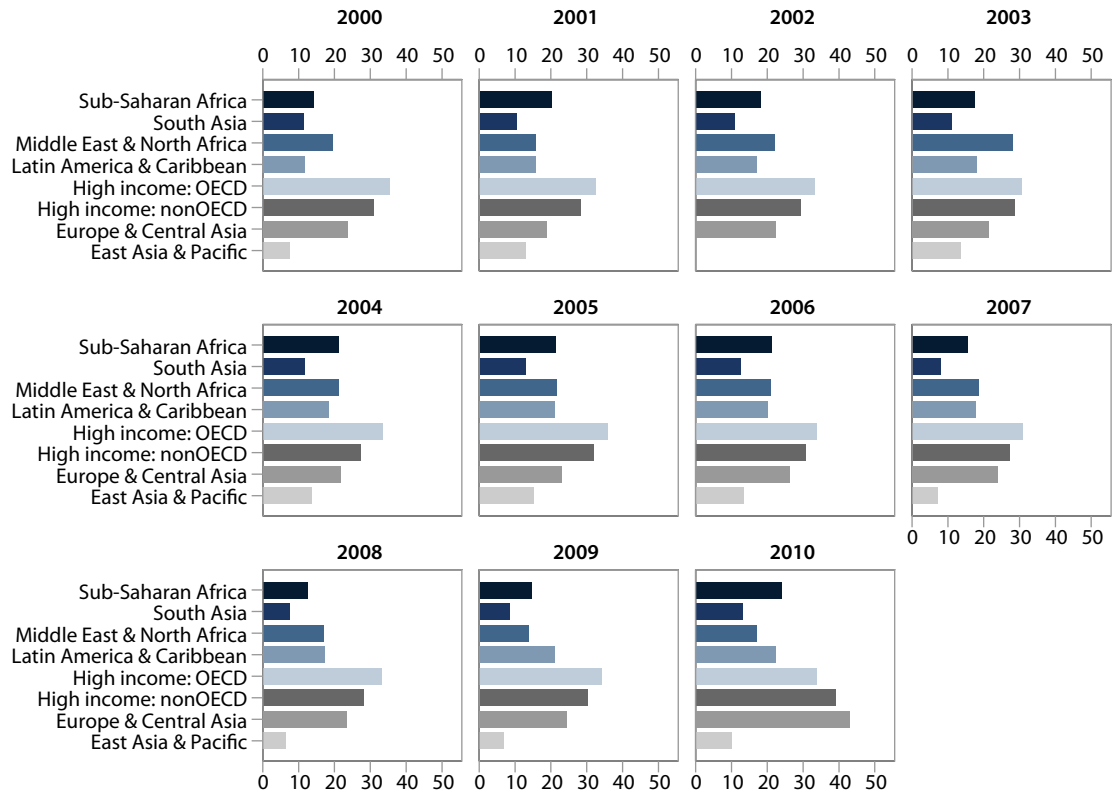


FIGURE 4
Employment security

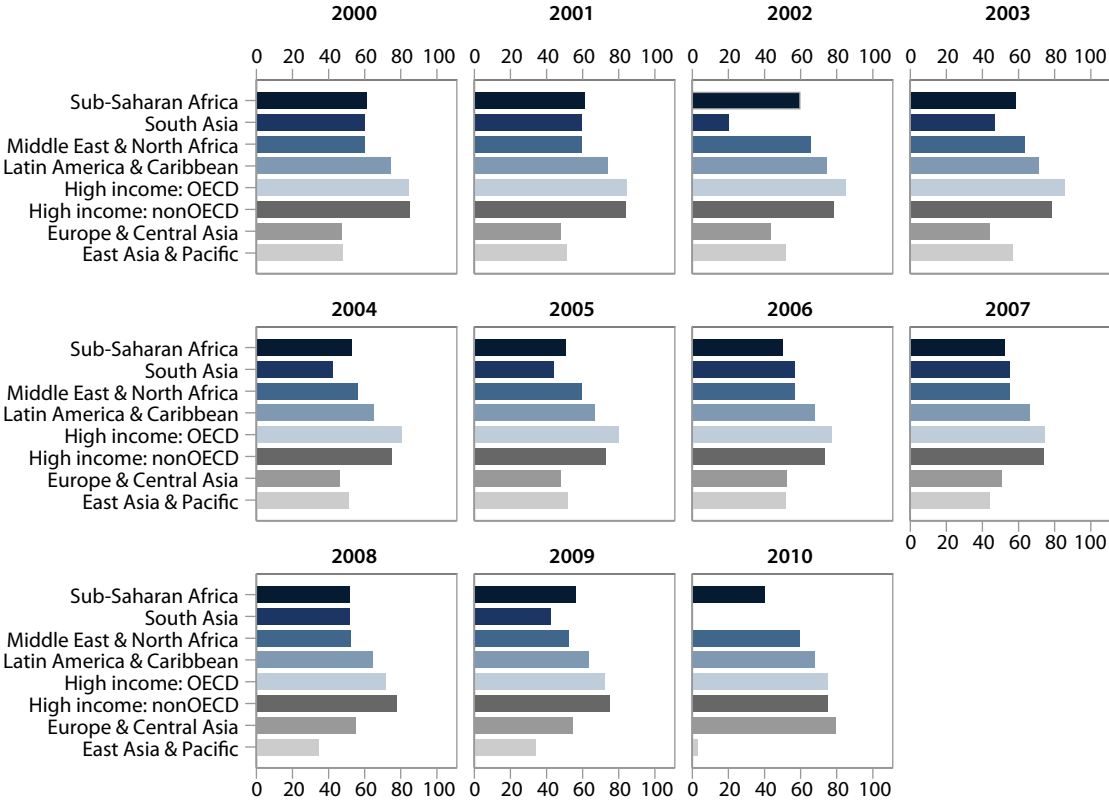


FIGURE 5
Safety at work and healthy work conditions

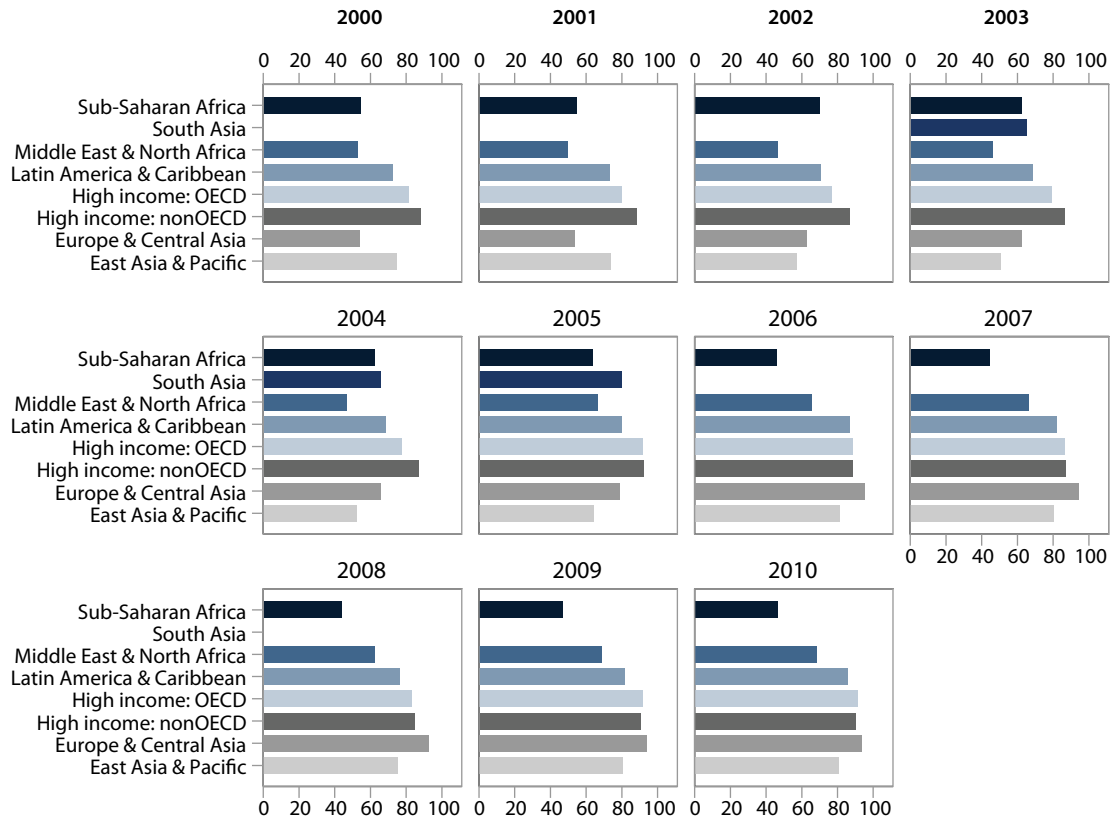
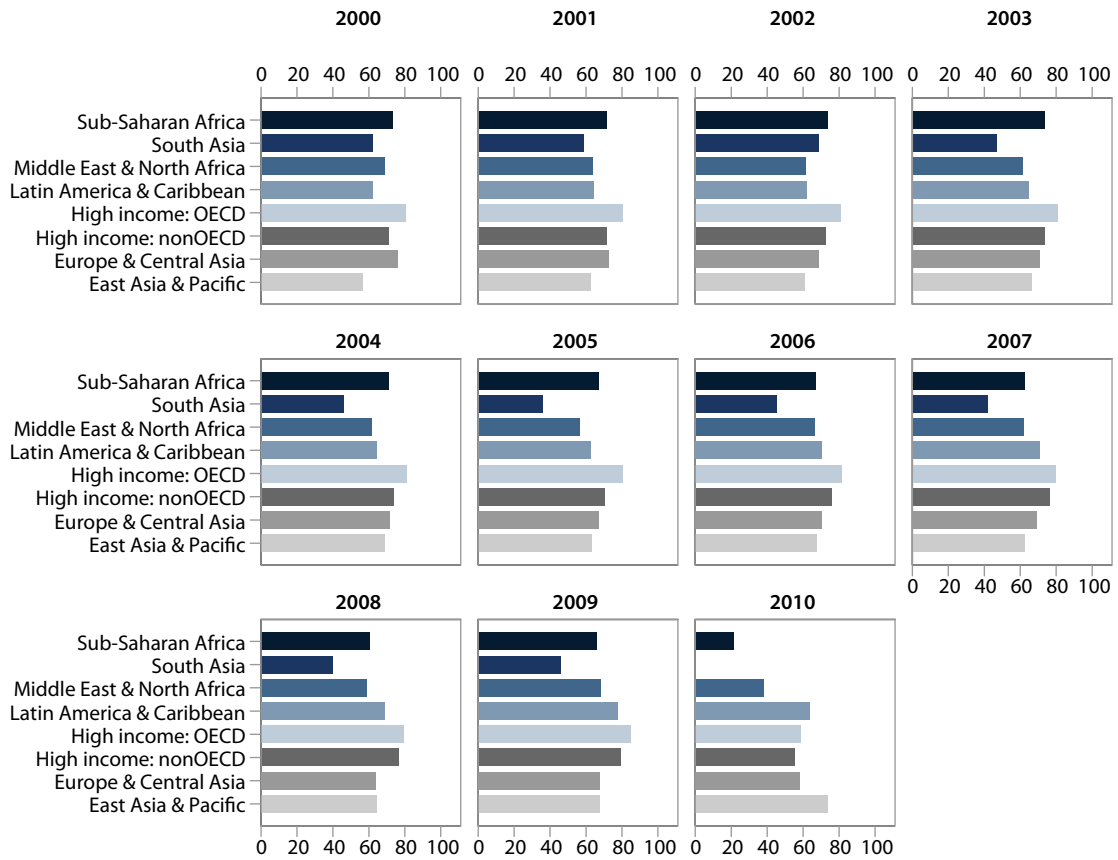


FIGURE 6
Equality of treatment and opportunity



Gaps and future directions

One of the challenges in the construction of a Just Jobs Index is the lack of available data on various indicators relevant for just jobs. This requires a tremendous amount of work to verify and cross-validate the data obtained from secondary sources for countries around the world.

The following steps would help the development of a more credible Just Jobs Index:

- Procure better data at the international level in order to expand the JJI to include currently missing countries and other important dimensions such as social security and social dialogue.
- Verify and cross-validate data on just jobs indicators across countries when data on missing countries become available.
- Employ various weighting mechanisms such as the use of ranks.
- Conduct robustness checks on the index by carrying out sensitivity analysis on the weighted index. This entails assessing the variation of the index and ranking of countries when some indicators are included or excluded.

Conclusion

With the Just Jobs Index, we developed a new international measure of just jobs that broadens the global discourse on employment beyond the common emphasis on unemployment and that also addresses job quality. Most developed European countries ranked high on the index, while Central and South Asian countries and African countries performed the lowest. In addition to presenting preliminary analysis of the results of the indices, the technical feasibility and the potential implication and use for policy are explained as well.

Despite this progress in constructing a comprehensive index that can be used for assessing just jobs, further work is needed to improve the index. This can be done by procuring better data at the international level and including missing countries in the index.

Data sources

Data relevant for the construction of the indices were gathered from secondary sources. The initial attempt was to gather data for 121 indicators across the world. Due to the lack of data for most indicators, however, the index uses 14 selected indicators. The following sources were the main providers of data:

- **International Labor Organization KILM database:** <http://kilm.ilo.org/manuscript/kilm07.asp>
- **World Bank database of indicators:** <http://data.worldbank.org/indicator>
- **U.N. Statistics Database, or UNSDS:** <http://unstats.un.org/unsd/databases.htm>

Endnotes

- 1 Sensitivity analysis is an assessment of how the variation in the final index can be apportioned—qualitatively or quantitatively—to different sources of variation in the assumptions used to construct the indicators, including the selection of the indicators and of how the index depends upon the information fed into it.
- 2 “Real wages” are defined in the International Labour Organization, or ILO, resolution adopted by the Eighth International Conference of Labor Statisticians, or ICLS, in 1954. ILO, “Average monthly wages,” available at <http://kilm.ilo.org/manuscript/kilm15.asp> (last accessed April 2013).
- 3 ILO, “International Classification by Status in Employment (ICSE),” available at <http://laborsta.ilo.org/applv8/data/icsee.html> (last accessed April 2013).
- 4 ILO, “Employment by occupation,” available at <http://kilm.ilo.org/manuscript/kilm05.asp> (last accessed April 2013). International Standard Classification of Occupations, 1988 (ISCO-88), with the following major groups (1) Legislators, senior officials and managers; (2) Professionals; (3) Technicians and associate professionals; (4) Clerks; (5) Service workers and shop and market sales workers; (6) Skilled agricultural and fishery workers; (7) Craft and related trades workers; (8) Plant and machine operators and assemblers; (9) Elementary occupations; and (10) Armed forces.

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