

APEC Economic Policy Report 2012

# **APEC's Ease of Doing Business Interim Assessment**

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# Appendix B. Methodology

## Average Values

The EoDB initiative requires not only credible targets, but also an assessment of the progress made by the APEC region with a methodology that is easy to understand.

As the target establishes an APEC-wide target of 25 percent improvement by 2015 and 5 percent improvement by 2011, the methodology should measure the evolution of APEC as a whole in the five EoDB priority areas. In this sense, the assessment should compare across time the average values of APEC in the EoDB indicators available from the World Bank Doing Business database. The indicators divided by priority areas are as follows:

1. Starting a Business
  - A. Procedures (number)
  - B. Time (days)
  - C. Cost (percentage of income per capita)
  - D. Paid-in Minimum Capital (percentage of income per capita)
2. Dealing with Construction Permits
  - A. Procedures (number)
  - B. Time (days)
  - C. Cost (percentage of income per capita)
3. Getting Credit
  - A. Strength of Legal Right Index (from 0 to 10, being 10 the strongest)
  - B. Depth of Credit Information Index (from 0 to 6, being 6 the deepest)
  - C. Public Registry Coverage (percentage of adults)
  - D. Private Bureau Coverage (percentage of adults)
4. Trading Across Borders
  - A. Documents to Export (number)
  - B. Time to Export (days)
  - C. Cost to Export (US\$ per container)
  - D. Documents to Import (number)
  - E. Time to Import (days)
  - F. Cost to Import (US\$ per container)
5. Enforcing Contracts
  - A. Procedures (number)
  - B. Time (days)
  - C. Cost (percentage of claim)

To calculate the APEC average values per year in each of the aforementioned indicators, this study utilizes a simple average across APEC member economies. Simple averages provide a transparent and straightforward method to calculate these values. In addition, they are easy to

understand and achievements by all APEC members are treated equally. For example, the calculation of the APEC average number of procedures in the Starting a Business priority area is as follows:

APEC avg. procedures<sub>2011</sub> = (# of procedures in Australia<sub>2011</sub> + # of procedures in Brunei Darussalam<sub>2011</sub> + ... + # of procedures in Viet Nam<sub>2011</sub>) / # of APEC economies

The APEC-wide annual rate of improvement (or decline) in the period 2009-2011 can be calculated by comparing the average value in 2011 with the value obtained in 2009. Following the example of the number of procedures in the Starting a Business priority area, the APEC-wide rate of improvement in this indicator is equal to:

$$\text{APEC-wide rate of improvement avg. procedures}_{2009-2011} = \left[ \frac{(\text{APEC avg. procedures}_{2011})}{(\text{APEC avg. procedures}_{2009})} - 1 \right] \times 100$$

## Median Values

The latest Doing Business dataset, released by the World Bank in October 2011, includes adjustments in the historical data. It was found that 458 data points from year 2010, or about 10 percent of the 2010 data points used in last year's EoDB interim assessment, were corrected. The high level of corrections motivated a closer revision of the latest Doing Business dataset and the convenience of depending on average values as the single measurement for progress in the EoDB priority areas.

An analysis of the distribution of the data series by region and indicator shows that outliers (extreme values) increased in year 2011. A simple way to detect outliers is to find how many data points in each of the series used in this assessment are outside a data range. For example, a distribution is considered normal if around 68 percent of the data points belonging to a particular indicator are located within one standard deviation from the average. A percentage of data points in that range below 68 percent would give an indication of the possible presence of outliers. Same would happen when less than 95 percent of data points belonging to a particular indicator are located out of the range defined by two standard deviations from the average.

The number of series in this study with data points out of the aforementioned ranges is as follows:

	< 68 percent of data points within one standard deviation from the average	Percentage of series	< 95 percent of data points within 2 standard deviations from the average	Percentage of series
Base year 2009	45	25.0%	75	41.6%
Year 2010	41	22.8%	70	38.8%
Year 2011	50	27.8%	76	42.2%

*Note: The total number of series in this study for each year is 180.*

The possible indication of the presence of outliers increased in 2011 compared to the previous years, especially with regards to 2010. A larger proportion of averages for 2011 may have been influenced by extreme values and given a distorted picture of APEC and any other region's collective performance in particular indicators. In addition, as the number of data series with extreme values in 2011 was larger than in 2010, there is a possibility that the improvement rates in the average of some EoDB indicators for the period 2009-2011 were pulled up by those values to a larger extent than those corresponding for the period 2009-2010.

In this regard, a better picture of APEC's performance in the EoDB priority areas can be obtained by complementing averages with median values for each of the indicators included in the EoDB priority areas.

The median is the middle value in any data series, separating the upper half of the values with the lower half of the values. In other words, in the case of APEC, the median for any EoDB indicator is equivalent to the value registered by the economy located in the 11th position. For example, the following table shows the cost of dealing with construction permits as a percentage of income per capita for each of the 21 APEC members:

#### APEC: Cost of Dealing with Construction Permits (2011)

Position	% of income per capita
1st	4.2
2nd	7.1
3rd	9.5
4th	9.9
5th	12.8
6th	17.8
7th	18.1
8th	27.9
9th	34.4
10th	41.9
11th	57.5
12th	65.6
13th	76.3
14th	79.0
15th	79.5
16th	105.3
17th	109.0
18th	110.5
19th	183.8
20th	333.1
21st	444.1
Average	87.0
Median	57.5

SOURCE: World Bank, *Doing Business*.

In this example, the average is much higher than the median, as the costs experienced by the APEC economies in the 20<sup>th</sup> and 21<sup>st</sup> position pushed up the average value. Only six APEC members had their average costs of dealing with construction permits higher than APEC's average cost equivalent to 87 percent. On the opposite, APEC's median cost was not affected by the extreme values in the 20<sup>th</sup> and 21<sup>st</sup> position, as 10 APEC members had their average cost higher than APEC's median cost and other 10 APEC members had their average cost lower than APEC's median cost.

To summarize, the calculation of the APEC median cost of dealing with construction permits is as follows:

APEC median cost of dealing with construction permits<sub>2011</sub> = 11<sup>th</sup> lowest cost by an APEC member of dealing with construction permits in 2011

APEC median cost of dealing with construction permits<sub>2009</sub> = 11<sup>th</sup> lowest cost by an APEC member of dealing with construction permits in 2009

The comparison of APEC median values in different years can also provide another way to measure improvement (or decline) in APEC's priority areas during the period 2009-2011. Following the example of the APEC median cost in the Dealing with Construction Permits priority area, the APEC-wide rate of improvement is:

$$\text{APEC-wide rate of improvement median cost}_{2009-2011} = \left[ \frac{(\text{APEC median cost}_{2011})}{(\text{APEC median cost}_{2009})} - 1 \right] \times 100$$

## Obtaining the APEC-wide Rate of Improvement by Priority Area and APEC-wide Overall Improvement

Since all the priority areas are comprised by indicators with different nature and units of measurement (for instance: numbers, days, percentage of income per capita), the estimation of the APEC-wide rate of improvement in any priority area can be obtained by calculating the simple average of the rates of improvement (or decline) in each of the indicators belonging to the particular priority area. This can be calculated by using the rates of improvement (or decline) for either APEC averages or APEC median values.

For example, the APEC-wide rate of improvement in the Starting a Business priority area in the period 2009-2011 can be had by using the rates of improvement (or decline) of the averages in each of the four indicators belonging to this priority area:

$$\text{APEC-wide rate of improvement Starting a Business}_{2009-2011} = (\text{APEC-wide rate of improvement avg. procedures}_{2009-2011} + \text{APEC-wide rate of improvement avg. time}_{2009-2011} + \text{APEC-wide rate of improvement avg. cost}_{2009-2011} + \text{APEC-wide rate of improvement avg. paid-in minimum capital}_{2009-2011}) / \# \text{ of indicators}$$

By using a simple average, the measurement gives the same importance to each of the indicators comprising any specific priority area.

Similarly, the APEC-wide rate of improvement in the Starting a Business priority area can be obtained by using the rates of improvement (or decline) of APEC median values in each of the four indicators that are part of this priority area:

$$\text{APEC-wide rate of improvement Starting a Business}_{2009-2011} = (\text{APEC-wide rate of improvement median procedures}_{2009-2011} + \text{APEC-wide rate of improvement median time}_{2009-2011} + \text{APEC-wide rate of improvement median cost}_{2009-2011} + \text{APEC-wide rate of improvement median paid-in minimum capital}_{2009-2011}) / \# \text{ of indicators}$$

The methodology allows the identification of the priority areas and indicators in which APEC has met or surpassed its aspirational targets and assists APEC in recognizing areas where more work

is needed. The calculation of the APEC-wide rate of improvement in any priority area by using separately average and median values also provide an indication whether the progress in the priority areas' indicators is explained for just few APEC members or not.

This methodology also provides a measure of the overall APEC-wide rate of improvement in the whole EoDB initiative. In this regard, this measure can be attained by combining the APEC-wide rates of improvement in the five priority areas:

$$\text{APEC-wide rate of improvement EoDB}_{2009-2011} = (\text{APEC-wide rate of improvement Starting a Business}_{2009-2011} + \text{APEC-wide rate of improvement Dealing with Construction Permits}_{2009-2011} + \text{APEC-wide rate of improvement Getting Credit}_{2009-2011} + \text{APEC-wide rate of improvement Trading Across Borders}_{2009-2011} + \text{APEC-wide rate of improvement Enforcing Contracts}_{2009-2011}) / \# \text{ of priority areas}$$

The APEC-wide rate of improvement in the EoDB initiative can be calculated by using either the rates of improvement concerning APEC averages or those concerning APEC median values.

The intention of the EoDB initiative is to reach an APEC-wide improvement of 5 percent by 2011 and 25 percent by 2015. Measuring the overall improvement by using a simple average of the rates of improvement (or decline) of the five priority areas, reduces the subjectivity of the assessment by considering all priority areas as equally important.<sup>115</sup>

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<sup>115</sup> If weighted averages are introduced, the overall results could be skewed toward the priority area assigned with the greater weight. Assigning weights could introduce additional complications, such as the criteria to be used. It is also possible that individual APEC economies differ on the importance to assign to each of the priority areas based on its particular realities.

