acts 2015

IMS Health
Quality Assurance

Statistical Services

http://imshealth.com/actsonline

imshealth™
INTELLIGENCE APPLIED.

Contents

Abstract

Dear Client:

You as our valued customer are depending upon having the right information at the right time in order to make effective decisions and react appropriately to rapidly changing markets. It is with this fundamental concept in mind that each year we evaluate our success in meeting your dual needs for *Accuracy* and *Timeliness* in our deliveries.

The IMS Health Annual Report on Quality Assessment, ACTS, serves as a reference on our performance. We're proud to be publishing the report's 29th edition this year, as this sustained effort demonstrates our strong commitment to meeting your information needs.

We also take particular pride in reporting that our efforts to improve data quality have resulted in the highest precision score of the last five years, reaching an index of 95% in 2014. This index is an aggregate of the precision in our retail, hospital, and pharmacy-based services. The high degree of accuracy is visible in all underlying offering types: retail reached an index of 96%, hospital offerings came in at 93%, and PharmaTrend offerings at 93%. Retail and hospital had their best year in a five-year span; please view the detailed results by region and country in the respective sections of this publication.

On the delivery side, we expanded our tracking base to include the complete range of weekly offerings, a move that had a one-time impact of reducing our overall average delivery time by two days. So as not to cause a trend break with this change, we added the weekly services into our historical analysis dating back to 2011. Based on the new expanded basket, we have achieved a slight improvement of 0.5 days in 2015, with an overall average delivery time of 22.1 days. At the same time, the average on-target performance improved by two percentage points to 86%.

In 2014, we developed and installed an early warning system to alert us of any undesired performance trend. As a result, we've been able to implement corrective actions much earlier than in the past. We're very pleased that this year's great results reflect the success of these continuous efforts.

ACTS is a quality monitoring system which is both unique in our industry and possible only with your collaboration. We wish to express our deepest gratitude to more than 2,900 clients in headquarter facilities and local affiliates for devoting the time and effort to contribute their information. Your participation in the process is invaluable to IMS Health and serves our entire clientele by supporting an objective assessment of data and service quality.

We are confident that this year's report will once again give you valuable insight into IMS Health's quality commitment. Your comments and questions are very welcome; we invite you to keep the discussion alive and help us make ACTS a superior and relevant reference.

Yours sincerely,

Stefan Ziegele

Vice President
IMS Statistical Services & Advanced Analytics

Accuracy

The IMS Validation Studies, with their global reach and standardized measures, provide pharmaceutical companies with an impartial and forthright reference with which to judge the quality of IMS data. By thus reporting on the precision of IMS' decision-support tools, validation studies facilitate pharmaceutical companies' international decision making.

The Validation Process

IMS conducts its Validation Studies in close co-operation with our service subscribers. Once we complete our year-end pharmacy audit, we supply our subscribers with software that presents our estimated yearly sales volume for each product pack. Subscribers then enter their *actual* sales volume based on what they supplied to retail pharmacies.

We then calculate an "R-Value" representing the ratio of *estimated* sales as projected by IMS to *actual* sales as reported by our industry partners. For each product examined, we calculate an individual "R-Value." We also calculate an average R-Value across all validated product forms.

R-Values indicate the scale of overestimation or underestimation in IMS results. An R-Value of 1.0 is the ideal and would mean that our projection matched reality exactly. Due to the nature of statistical sampling, R-Values typically deviate from 1.0, and it is only practical to strive for individual R-Values that are clustered tightly around this theoretical ideal.

We express audit precision (or the degree of clustering) as the percentage of all *individual* R-Values that fall within a predefined range of deviation around the *average* R-Value. The standard precision range is ±22.5 percentage points around the average over/underestimation. The greater the data precision, the more tightly R-Values will be clustered in the centre of this range.

A precision value of 90 percent, paired with a zero percent bias, can be interpreted as follows: On average, IMS audit data reflect a high degree of homogeneity since 90 percent of the validated product forms lie between –22.5 percent and +22.5 percent of the reported industry numbers.

Conceptually, comparing IMS audit estimates with manufacturer sales data requires that the numbers be fully compatible. This compatibility hinges on the ability of companies participating in the validation study to segregate their internal sales data, isolating those sales channeled to the pharmacy retailing sector. The degree to which they can do this correlates closely with the technical infrastructure of the country and the complexity of the distribution system. When sales to other market sectors (e.g., tenders, exports) are not segregated and instead are included in a company's sales, the assumption is that IMS data have underestimated reality, and consequently they are viewed as incorrect.

Parallel trade practices add another element of incompatibility to the data. Typically, manufacturers are unaware of the sales volume that sub-distributors and

pharmacies *export to* other countries (parallel exports) or *import* from other countries (parallel imports). In parallel *export* situations, the *industry* numbers are usually inflated by sales that never entered the domestic pharmacy market. Conversely, in parallel *import* situations in which the imported items are not isolated, for example through official parallel traders, *IMS* numbers are usually inflated.

Due to growing issues with data incompatibility, validation studies are gradually losing some of their potency as an objective measure of accuracy. Thus we are in the process of evaluating measures of data relevance for those regions highly affected by parallel business (e.g., European rim). Nevertheless, we believe that once we exclude products typically traded in parallel from the validation process, the exercise still provides a good overall picture of the accuracy and trends achieved in the individual markets.

Validation Study results are considered to be representative of the survey universe if more than 20 percent of the market is reflected in what our data partners send us. If the total market coverage reported by our data partners falls between 10 and 20 percent, validation results may still give a good indication of change from one year to the next, but otherwise must be used with care. Studies with participation rates less than 10 percent are included in the ACTS report but marked as *not representative* by means of an uncolored bar.

The 2014 Validation Results

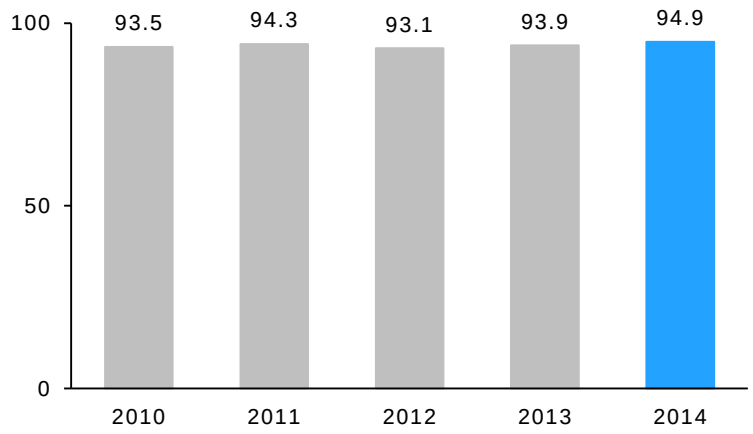
The validation process usually starts 2-3 months after the close of the year being validated. Typically, it can take up to ten months after we receive final feedback and can complete the analysis of any given country. This year, the last completed materials for 2014 were returned to us in December 2015.

The 2014 participation level decreased to a total of 32 companies on average participating in a country's validation process, down from 35 companies in 2013. In total, 2,939 company affiliates worldwide participated in the 2014 validation surveys and supplied a total of 85,974 product forms for analysis.

Global Validation Results

Until a couple of years ago, we only validated IMS retail audits while hospital, OTC and PharmaTrend offerings were quality-assessed more on a sporadic basis. Along with an upgrading of the ACTS validation process, we also incorporated these other standard deliverables in ACTS and have provided you lately with individual validation results. One request from our readers' community was to summarize all individual validation results to one single metric – the *Global Precision Index*. This is an aggregate of all validations performed with uninterrupted 5-years data and serves as a high level indicator on IMS data accuracy. For 2014, this global index utilized the outcome from 87 validation studies and demonstrated a high degree of stability across the 5-years time period. Lately, an overall improvement of 1.0 percentage point can be reported, from 93.9% in 2013 to 94.9% in 2014.

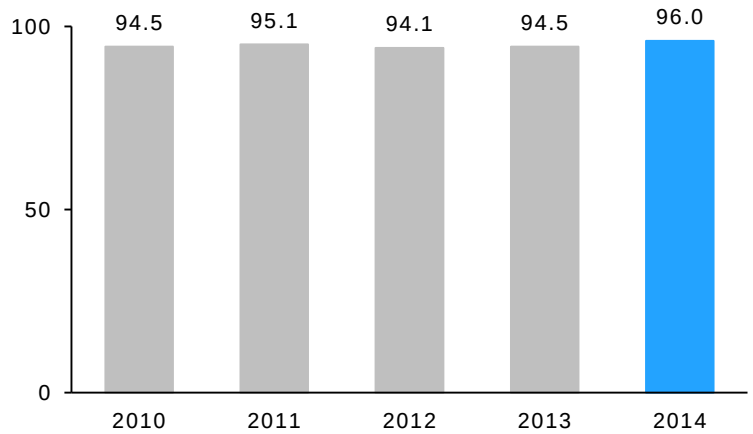
Global Precision Index (%)



Retail Validation Results

For the 2014 validation studies, 58 countries provided analyzable results. No validation study was necessary in Denmark, Finland, Norway and Sweden because we collect full census data in these countries. There, precision results are assumed to be 100 percent. This makes a total of 62 sets of validation results, of which 56 have uninterrupted five-year results. The overall degree of precision in IMS retail pharmaceutical reports is best described by an aggregated precision index for these 56 countries:

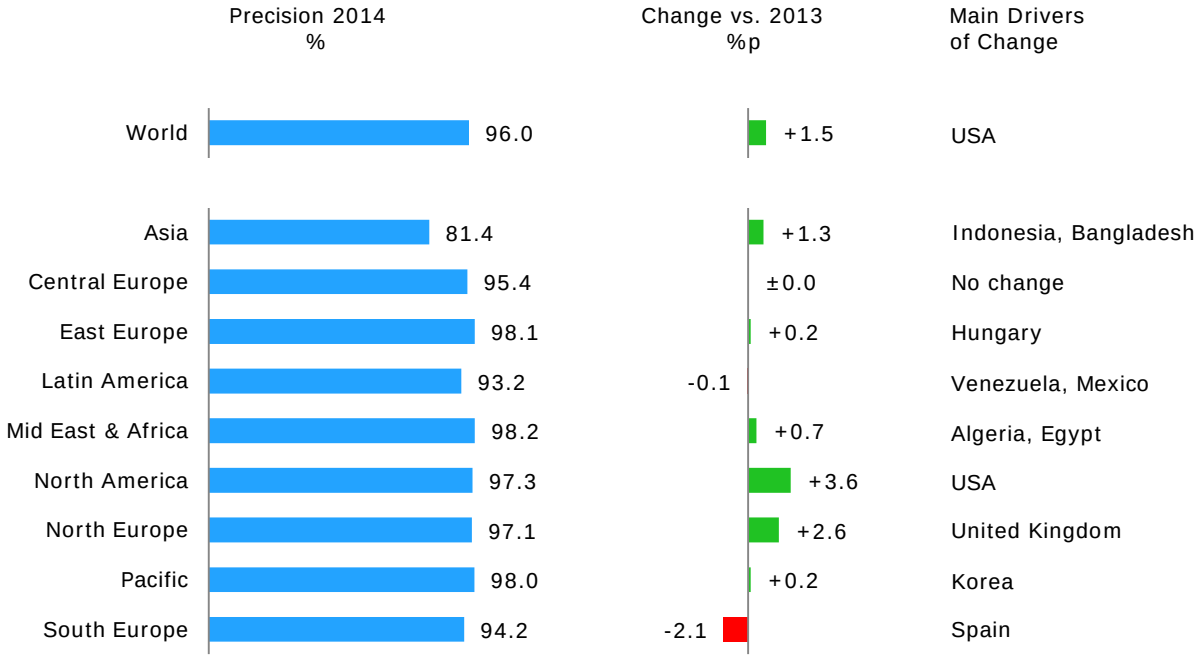
Retail Precision Index (%)



Overall, the Retail Precision Index over the 5-year period documents solid outcome in maintaining existing levels of data quality well above 94%. In 2014, the index improved by 1.5 percentage points over 2013 to 96.0% on average.

Regional Retail Validation Results

Seven of the nine regions managed to improve or maintain their 2013 result also in 2014. *Mid East & Africa* achieved the highest precision score with 98.2%, closely followed by *East Europe* at 98.1% and *Pacific* at 98.0%. The highest precision gain of 3.6 percentage points was reported for *North America*. Only two regions were facing precision loss: *South Europe* declined by 2.1 percentage points to 94.2% and *Latin America* reduced insignificantly to 93.2%. All regions in detail and their main contributors to changes are listed below:



Improvement & Deterioration by Country

More details on the markets with an improved or declined precision value are given in the table on the subsequent page.

Country	Improvement	
	Precision 2014 %	Change vs. 2013 %p
Bangladesh	76.1	+5.5
Brazil	99.1	+3.2
Ireland	99.2	+6.8
Jordan	83.9	+7.4
Korea	88.1	+4.0
Latvia	90.6	+8.3
Lebanon	97.4	+3.3
Serbia	97.0	+6.9
United Kingdom	95.4	+4.1
Uruguay	72.8	+3.8
USA	97.3	+4.1

Country	Deterioration	
	Precision 2014 %	Change vs. 2013 %p
Bolivia	41.6	-10.7
Chile	97.4	-2.6
Dominican Rep.	73.5	-2.4
Ecuador	89.8	-8.5
Hong Kong	73.1	-2.3
Mexico	87.6	-3.9
Paraguay	27.6	-9.5
Peru	88.2	-5.0
Spain	91.9	-5.1
Venezuela	89.6	-4.2
Vietnam	58.9	-2.4

Eleven countries turned out with significant improvement of more than two percentage points over 2013. Remarkable growth of 8.3 percentage points was noted for *Latvia*, followed by *Jordan* (7.4), *Serbia* (6.9) and *Ireland* with a 6.8 percentage point improvement. Opposed to this pleasant achievement, another eleven countries showed accentuated decline of more than two percentage points over 2013, with *Bolivia* facing the biggest precision loss of more than ten percentage points, followed by *Paraguay* and *Ecuador*. All these countries are in the focus of our quality-improving initiatives in 2016.

Country-specific Results

The validation studies mentioned on the following country pages refer to the IMS retail reports, with the following exceptions:

Country	Market covered
Croatia, Czech Republic, Hungary, India, Japan, Poland, Russia, Serbia, Slovak Republic, Slovenia, Switzerland, USA	Retail + Hospital market
Hong Kong, Indonesia, Vietnam	Total market
Malaysia, Singapore	Total private market

Further parts of this accuracy section, which follow the retail validation pages, highlight other validation initiatives of high interest to our data subscribers:

- OTC Validation Studies
- PharmaTrend Validation Studies
- Hospital Validation Studies
- Specialty Markets Validation Results
- Validating IMS Forecasting Services

In addition, we are providing updates on the latest measures we've taken to sustain today's quality levels:

- Universe Updates
- Data Capture

Algeria

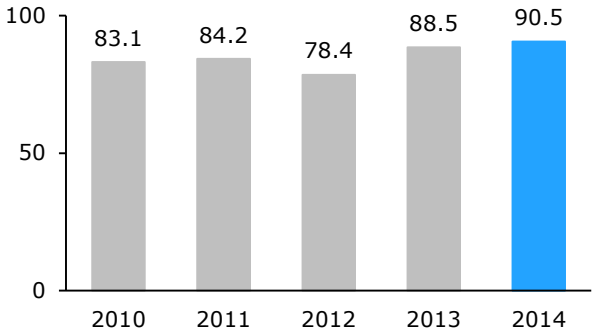
Retail Validation Study

Precision (%)

Overall precision index improved by 2.0 percentage points in 2014

Large product forms reached 94.0%, medium 91.3% and small 77.5%

Forms validated in both years, 2013 and 2014, improved by 3.3 percentage points to 95.8% in 2014

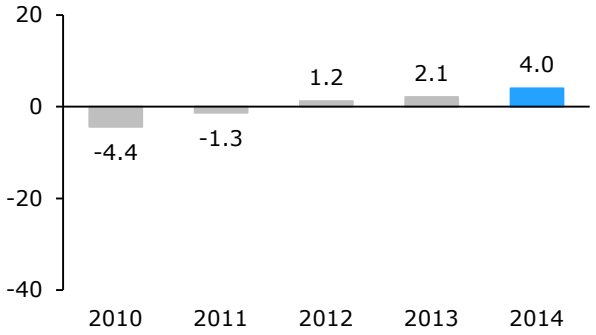


Over/Underestimation (%)

Overall overestimation increased by 1.9 percentage points in 2014

Large product forms were overestimated by 4.3%, medium by 2.6% and small by 6.3%

Overestimation of forms validated in both years, 2013 and 2014, increased by 1.9 percentage points to 4.4% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	9	11	13	12	**16**
Validated market share in unit terms	23%	26%	27%	26%	**28%**
Validated product forms	196	258	235	238	**303**

Actions

Adjust projection level

Argentina

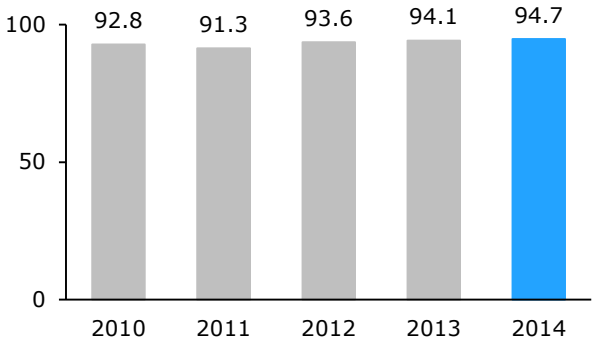
Retail Validation Study

Precision (%)

Overall precision index improved by 0.6 percentage points in 2014

Large product forms reached 96.4%, medium 94.2% and small 89.9%

Forms validated in both years, 2013 and 2014, improved by 0.8 percentage points to 95.9% in 2014

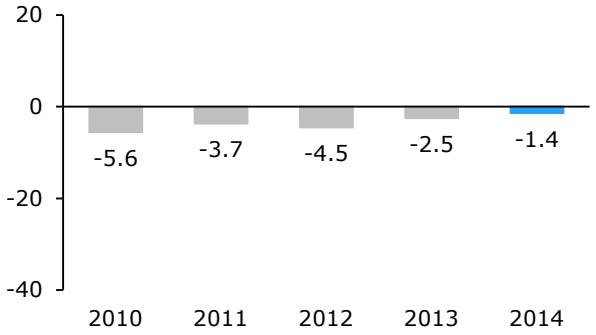


Over/Underestimation (%)

Overall underestimation improved by 1.1 percentage points in 2014

Large product forms were underestimated by 1.8%, medium by 0.8% and small by 1.2%

Underestimation of forms validated in both years, 2013 and 2014, improved by 1.4 percentage points to 1.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	75	64	64	65	**64**
Validated market share in unit terms	59%	63%	59%	57%	**62%**
Validated product forms	3,436	3,074	2,929	2,836	**3,140**

Actions

No action required from the statistical point of view

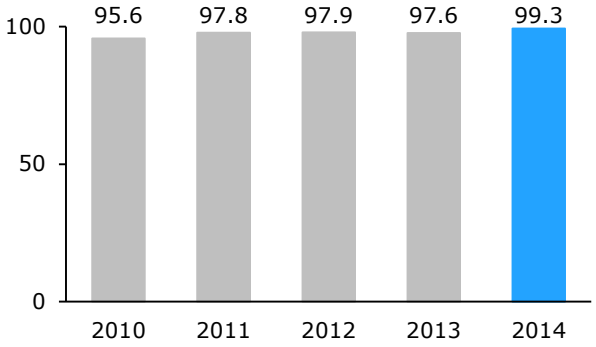
Austria

Precision (%)

Overall precision index improved by 1.7 percentage points in 2014

Large and medium product forms both reached a perfect 100%, small forms reached 95.3%

Forms validated in both years, 2013 and 2014, improved slightly by 0.4 percentage points to 99.3% in 2014

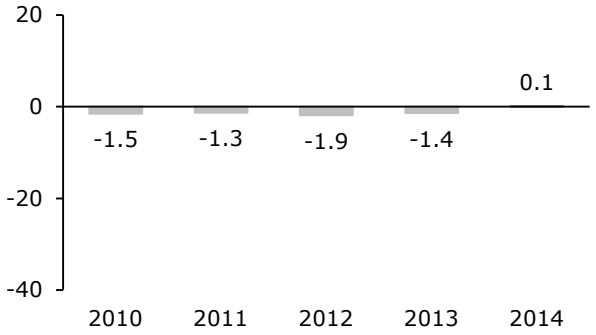


Over/Underestimation (%)

Overall bias improved from 1.4% underestimation to a negligible overestimation of 0.1% in 2014

Large product forms were overestimated by 0.2%, medium by 0.1%, and small forms were underestimated by 1.1%

Underestimation of forms validated in both years, 2013 and 2014, improved by 1.4 percentage points to 0.1% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	12	16	16	14	**13**
Validated market share in unit terms	16%	30%	25%	30%	**23%**
Validated product forms	474	791	654	802	**670**

Actions

No action required from the statistical point of view

Bangladesh

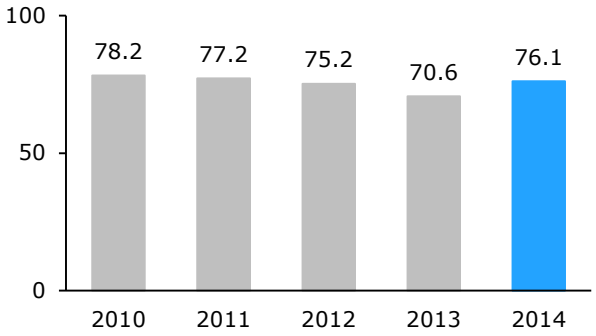
Retail Validation Study

Precision (%)

Overall precision index improved by 5.5 percentage points in 2014

Large product forms reached 89.1%, medium 67.5% and small 49.7%

Forms validated in both years, 2013 and 2014, declined by 0.7 percentage points to 74.7% in 2014

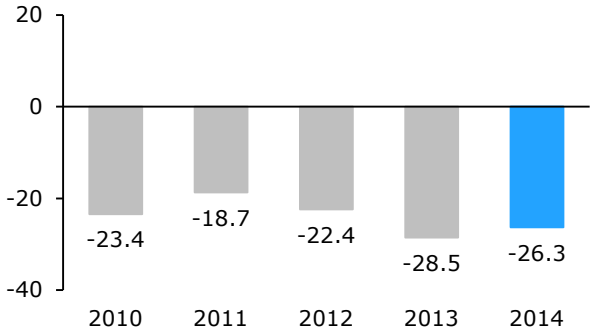


Over/Underestimation (%)

Overall underestimation improved by 2.2 percentage points in 2014

Large product forms were underestimated by 25.8%, medium by 26.8% and small by 27.7%

Underestimation of forms validated in both years, 2013 and 2014, increased by 2.5 percentage points to 26.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	14	12	12	10	**16**
Validated market share in unit terms	52%	36%	39%	40%	**56%**
Validated product forms	1,627	1,306	1,617	1,599	**2,147**

Actions

Update universe based on new census

Adjust projection level based on new census

Belgium

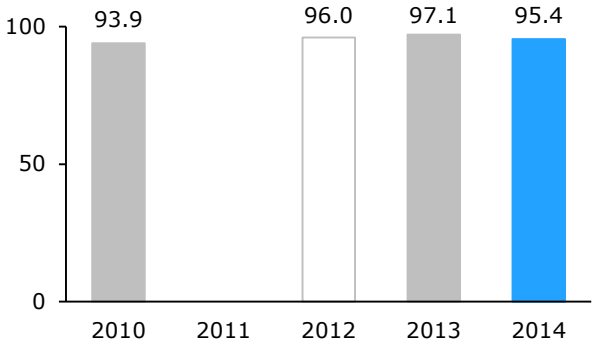
Retail Validation Study

Precision (%)

Overall precision index declined by 1.7 percentage points in 2014

Large product forms reached 95.8%, medium 95.5% and small 93.7%

Forms validated in both years, 2013 and 2014, improved by 0.2 percentage points to 94.0% in 2014

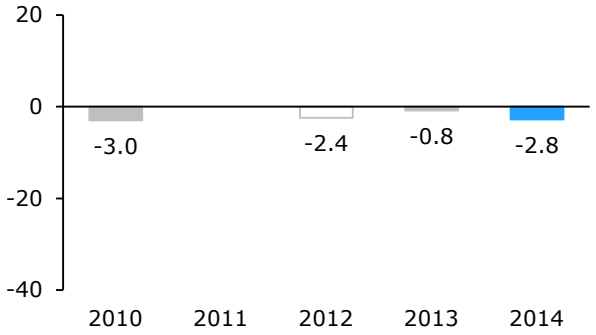


Over/Underestimation (%)

Overall underestimation increased by 2.0 percentage points in 2014

Large product forms were underestimated by 3.4%, medium by 2.1% and small by 2.0%

Bias of forms validated in both years, 2013 and 2014, turned from 1.0% underestimation in 2013 to 0.3% overestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	13		8	17	**21**
Validated market share in unit terms	15%		8%	21%	**25%**
Validated product forms	420		205	603	**631**

Actions

Continue direct sales improvement project

Bolivia

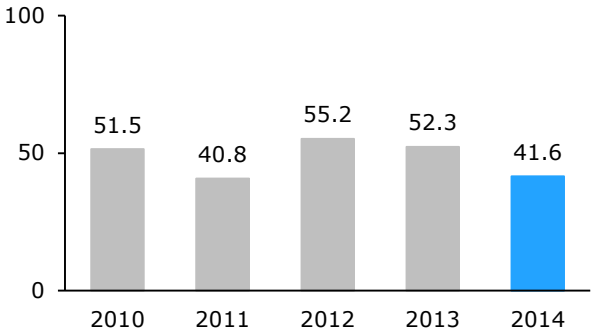
Retail Validation Study

Precision (%)

Overall precision index deteriorated by 10.7 percentage points in 2014

Large product forms reached 44.0%, medium 41.0% and small 34.8%

Forms validated in both years, 2013 and 2014, declined by 4.5 percentage points to 48.6% in 2014

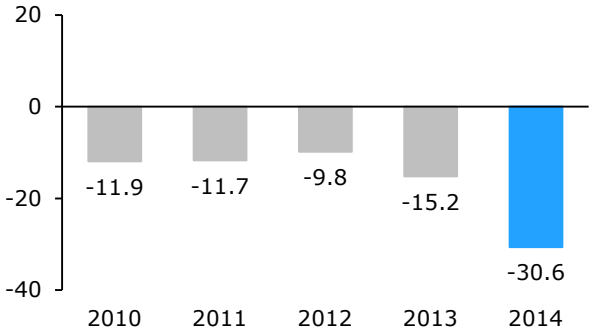


Over/Underestimation (%)

Overall underestimation increased by 15.4 percentage points in 2014

Large product forms were underestimated by 30.8%, medium by 30.9% and small by 29.0%

Underestimation of forms validated in both years, 2013 and 2014, increased by 5.3 percentage points to 20.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	67	62	45	35	**58**
Validated market share in unit terms	60%	63%	55%	51%	**66%**
Validated product forms	1,515	1,535	1,335	1,214	**1,796**

Actions

Improve panel fulfillment

Review internal processes

Brazil

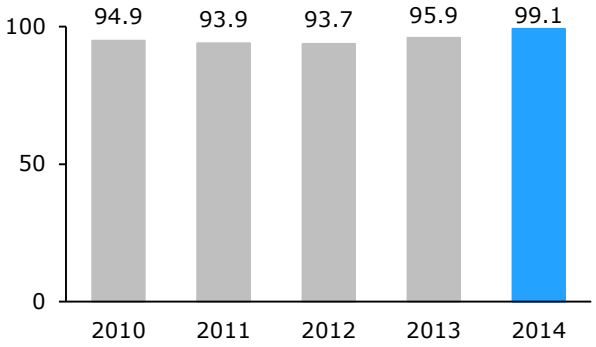
Retail Validation Study

Precision (%)

Overall precision index improved by 3.2 percentage points in 2014

Large product forms reached a perfect 100%, medium 98.2% and small 97.8%

Forms validated in both years, 2013 and 2014, improved by 1.7 percentage points to 99.1% in 2014

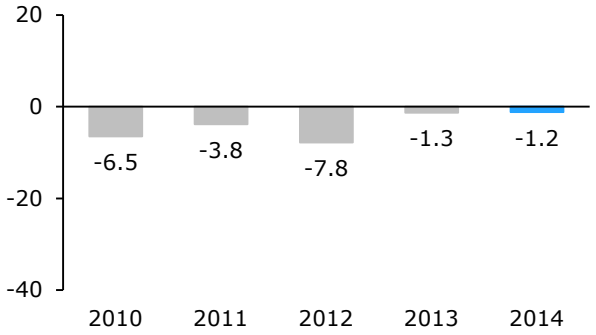


Over/Underestimation (%)

Overall underestimation improved by 0.1 percentage points in 2014

Large product forms were underestimated by 0.7%, medium by 2.1% and small by 1.4%

Underestimation of forms validated in both years, 2013 and 2014, improved by 0.2 percentage points to 1.1% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	15	28	28	36	**27**
Validated market share in unit terms	12%	16%	18%	20%	**17%**
Validated product forms	684	997	1,250	1,353	**1,052**

Actions

No action required from the statistical point of view

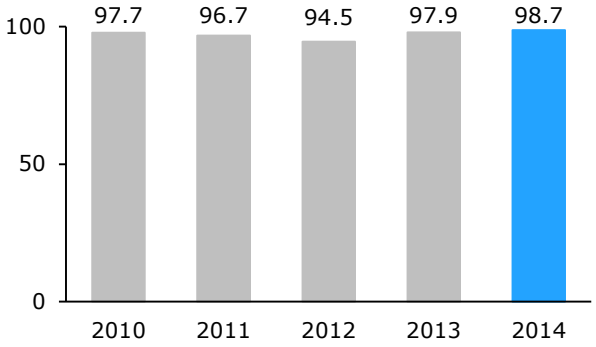
Bulgaria

Precision (%)

Overall precision index improved by 0.8 percentage points in 2014

Large product forms reached 99.3%, medium 98.5% and small 97.4%

Forms validated in both years, 2013 and 2014, improved slightly by 0.1 percentage points to 98.8% in 2014

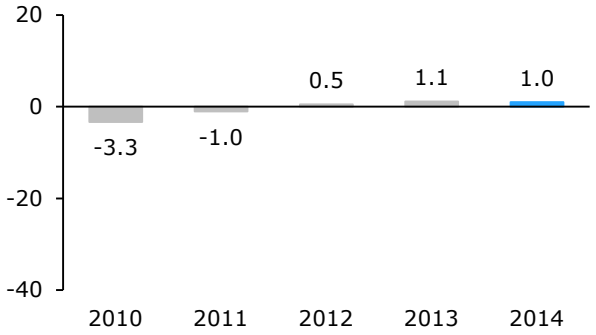


Over/Underestimation (%)

Overall overestimation improved slightly by 0.1 percentage points in 2014

Large product forms were overestimated by 1.3%, medium by 0.4% and small forms by 1.0%

Overestimation of forms validated in both years, 2013 and 2014, increased slightly by 0.7 percentage points to 1.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	68	49	59	58	**46**
Validated market share in unit terms	59%	51%	58%	58%	**52%**
Validated product forms	790	718	851	826	**762**

Actions

No action required from the statistical point of view

Canada

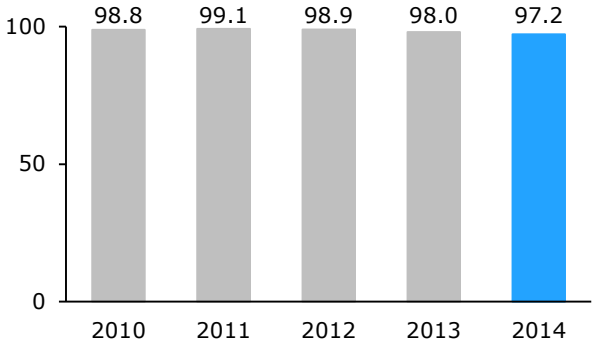
Retail Validation Study

Precision (%)

Overall precision index slightly declined by 0.8 percentage points in 2014

Large product forms reached 97.5%, medium 97.9% and small 95.0%

Forms validated in both years, 2013 and 2014, declined by 1.1 percentage points to 97.1% in 2014



Over/Underestimation (%)

Overall overestimation slightly increased by 0.4 percentage points in 2014

Large product forms were overestimated by 0.8%, medium by 1.2% and small forms by 0.7%

Overestimation of forms validated in both years, 2013 and 2014, slightly increased by 0.3 percentage points to 0.9% in 2014

Participation

	2010	2011	2012	2013	2014
Participating companies	85	87	88	94	**100**
Validated market share in unit terms	95%	95%	95%	95%	**95%**
Validated product forms	3,036	3,179	3,259	3,381	**3,414**

Actions

No action required from the statistical point of view

Central America

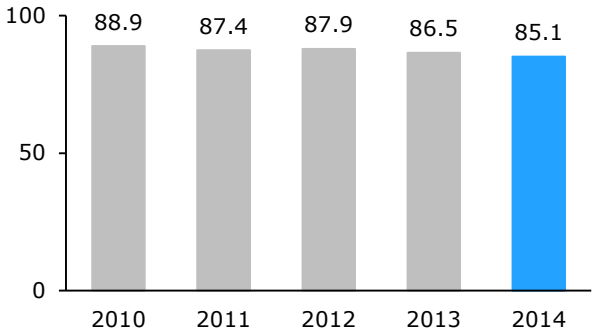
Retail Validation Study

Precision (%)

Overall precision index declined by 1.4 percentage points in 2014

Large product forms reached 86.3%, medium 87.5% and small 76.4%

Forms validated in both years, 2013 and 2014, slightly declined by 0.2 percentage points to 87.9% in 2014

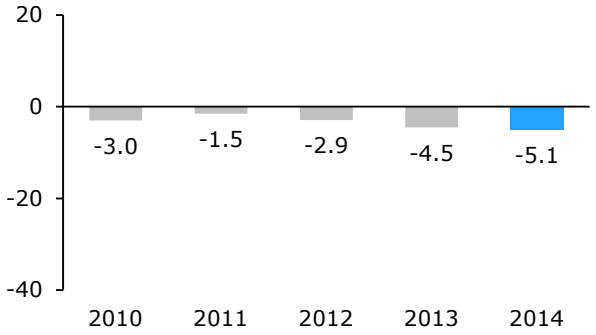


Over/Underestimation (%)

Overall underestimation increased by 0.6 percentage points in 2014

Large product forms were underestimated by 5.2%, medium by 4.8% and small by 4.5%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.1 percentage points to 4.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	25	29	31	26	**14**
Validated market share in unit terms	29%	30%	33%	32%	**23%**
Validated product forms	1,505	1,692	1,833	1,675	**1,124**

Actions

Review projection level

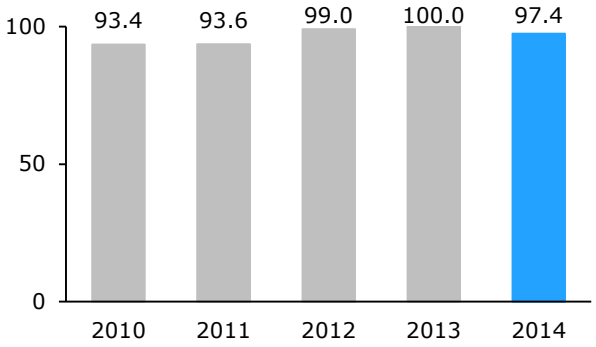
Chile

Precision (%)

Overall precision index declined by 2.6 percentage points in 2014

Large product forms reached 97.0%, medium 98.9% and small 95.8%

Forms validated in both years, 2013 and 2014, declined by 0.6 percentage points to 99.4% in 2014

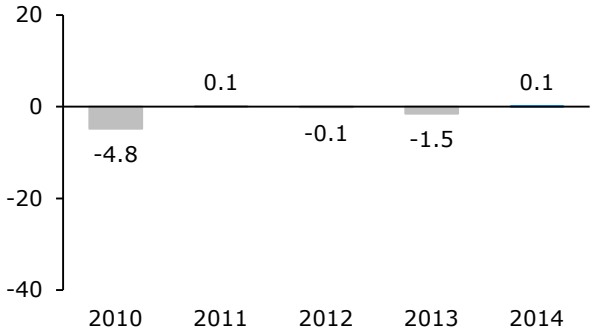


Over/Underestimation (%)

Overall bias turned from 1.5% underestimation in 2013 to 0.1% overestimation in 2014

Large product forms were overestimated by 1.3%, medium forms were underestimated by 0.7% and low by 0.2%

Underestimation of forms validated in both years, 2013 and 2014, improved by 1.8 percentage points to 0.1% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	22	13	15	13	**16**
Validated market share in unit terms	26%	14%	20%	18%	**19%**
Validated product forms	1,327	669	842	709	**838**

Actions

No action required from the statistical point of view

Colombia

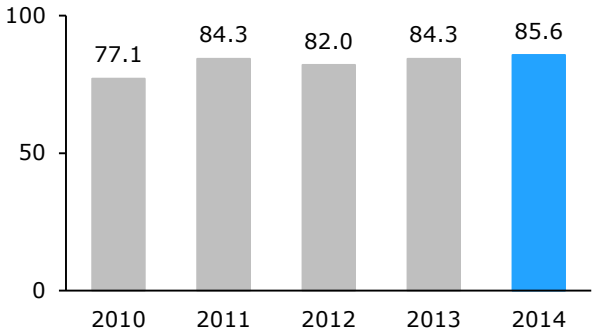
Retail Validation Study

Precision (%)

Overall precision index improved by 1.3 percentage points in 2014

Large product forms reached 88.6%, medium 87.6% and small 71.9%

Forms validated in both years, 2013 and 2014, improved by 2.1 percentage points to 89.7% in 2014

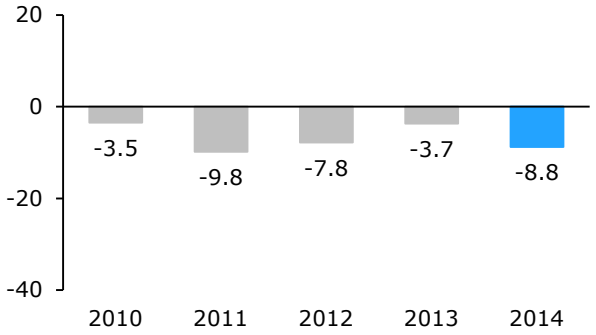


Over/Underestimation (%)

Overall underestimation increased by 5.1 percentage points in 2014

Large product forms were underestimated by 12.2%, medium by 4.6% and small by 0.9%

Underestimation of forms validated in both years, 2013 and 2014, increased by 4.4 percentage points to 7.2% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	18	8	18	14	**11**
Validated market share in unit terms	30%	14%	23%	18%	**16%**
Validated product forms	1,193	554	1,078	810	**615**

Actions

Implement high-end quality analytics tool

Conduct advanced validation analysis for identifying potential for further improvement

Croatia

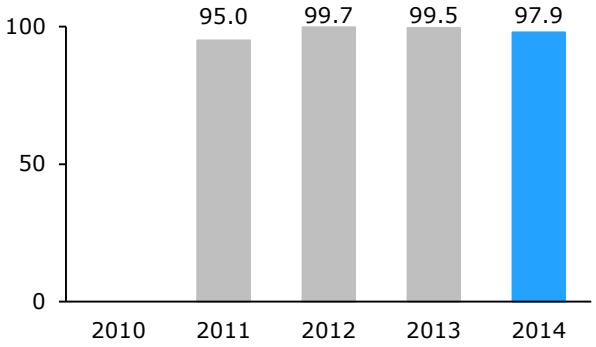
Retail+Hospital Validation Study

Precision (%)

Overall precision index declined by 1.6 percentage points in 2014

Large product forms reached 98.0%, medium 98.8% and small forms 95.8%

Forms validated in both years, 2013 and 2014, declined by 0.9 percentage points to 99.1% in 2014



Over/Underestimation (%)

Overall bias turned from 0.7% overestimation in 2013 to 3.0% underestimation in 2014

Large product forms were underestimated by 3.3%, medium by 2.7% and small forms by 2.8%

Bias of forms validated in both years, 2013 and 2014, turned from 0.6% overestimation in 2013 to 3.0% underestimation in 2014

Participation

	2010	2011	2012	2013	2014
Participating companies		8	10	11	**9**
Validated market share in unit terms		13%	41%	37%	**49%**
Validated product forms		262	541	535	**649**

Actions

No action required from the statistical point of view

Czech Republic

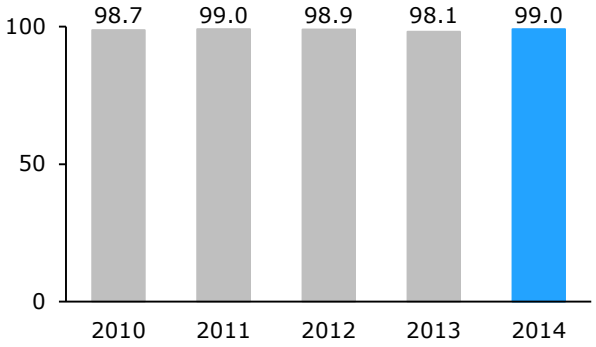
Retail+Hospital Validation Study

Precision (%)

Overall precision index improved by 0.9 percentage points in 2014

Large product forms reached a perfect 100%, medium 99.7% and small 94.3%

Forms validated in both years, 2013 and 2014, slightly improved by 0.3 percentage points to 99.2% in 2014

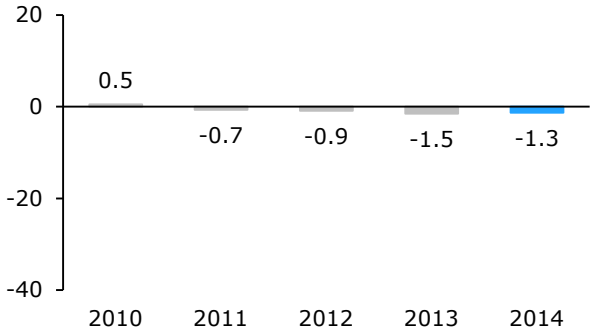


Over/Underestimation (%)

Overall underestimation slightly improved by 0.2 percentage points in 2014

Large product forms were underestimated by 1.2%, medium by 0.8% and small by 2.8%

Underestimation of forms validated in both years, 2013 and 2014, slightly increased by 0.3 percentage points to 1.3% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	28	25	29	22	**27**
Validated market share in unit terms	51%	46%	48%	44%	**43%**
Validated product forms	1,134	1,055	1,147	1,148	**1,193**

Actions

No action required from the statistical point of view

Dominican Republic

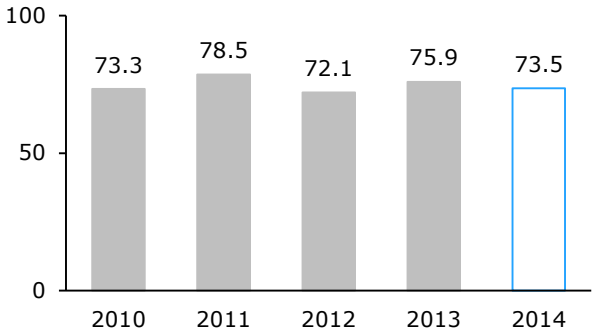
Retail Validation Study

Precision (%)

Overall precision index declined by 2.4 percentage points in 2014

Large product forms reached 75.9%, medium 76.8% and small 59.0%

Forms validated in both years, 2013 and 2014, declined by 1.9 percentage points to 76.3% in 2014

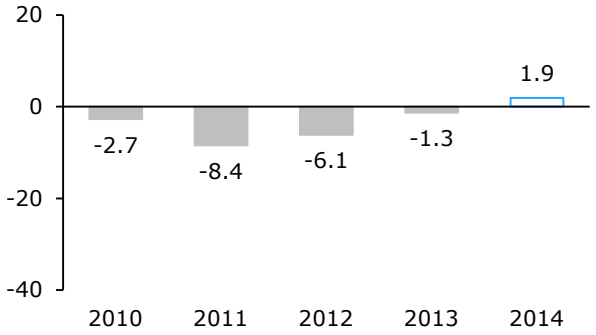


Over/Underestimation (%)

Overall bias turned from 1.3% underestimation in 2013 to 1.9% overestimation in 2014

Large product forms were overestimated by 2.8%, medium by 1.4% and small forms were underestimated by 1.6%

Bias of forms validated in both years, 2013 and 2014, turned from 3.4% underestimation in 2013 to 1.5% overestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	24	31	19	22	**10**
Validated market share in unit terms	35%	46%	27%	27%	**9%**
Validated product forms	1,384	1,953	1,251	1,387	**459**

Actions

Review projection level

Motivate more companies to participate in the validation study

Ecuador

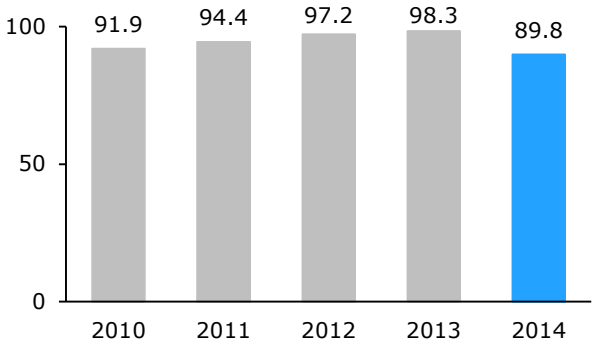
Retail Validation Study

Precision (%)

Overall precision index declined by 8.5 percentage points in 2014

Large product forms reached 89.0%, medium 92.3% and small 87.2%

Forms validated in both years, 2013 and 2014, declined by 9.0 percentage points to 89.6% in 2014

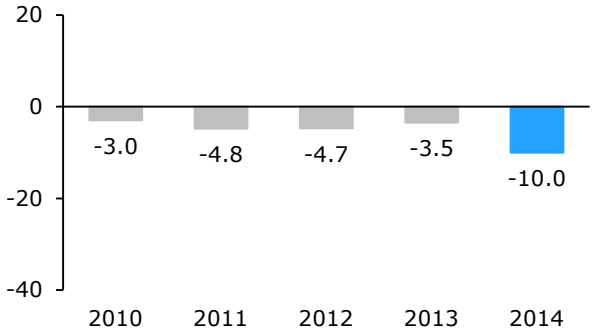


Over/Underestimation (%)

Overall underestimation increased by 6.5 percentage points in 2014

Large product forms were underestimated by 11.4%, medium and small forms by 8.0% both

Underestimation of forms validated in both years, 2013 and 2014, increased by 4.8 percentage points to 9.2% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	86	88	89	80	**49**
Validated market share in unit terms	68%	74%	72%	62%	**47%**
Validated product forms	2,394	2,478	2,449	2,119	**1,363**

Actions

Review internal quality assurance process

Egypt

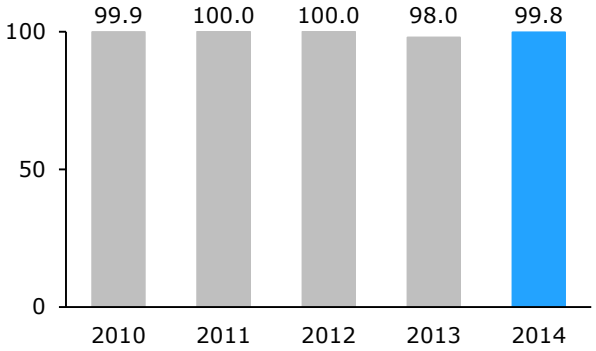
Retail Validation Study

Precision (%)

Overall precision index improved by 1.8 percentage points in 2014

Large and medium product forms both reached a perfect 100%, small forms reached 99.0%

Forms validated in both years, 2013 and 2014, improved by 0.3 percentage points to 100% in 2014

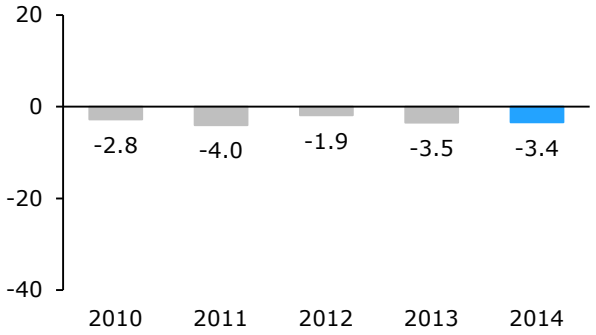


Over/Underestimation (%)

Overall underestimation slightly improved by 0.1 percentage points in 2014

Large product forms were underestimated by 3.9%, medium by 3.0% and small by 2.6%

Underestimation of forms validated in both years, 2013 and 2014, improved by 2.7 percentage points to 3.0% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	64	30	46	41	**24**
Validated market share in unit terms	44%	30%	24%	22%	**15%**
Validated product forms	980	748	604	542	**408**

Actions

No action required from the statistical point of view

Estonia

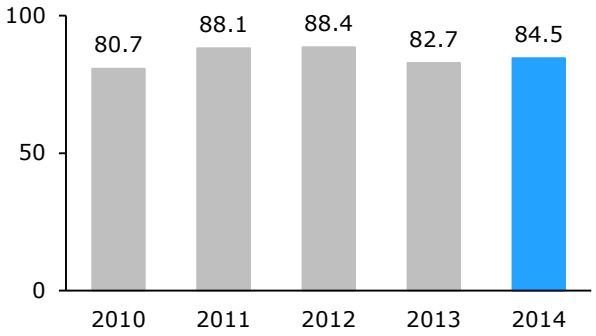
Retail Validation Study

Precision (%)

Overall precision index improved by 1.8 percentage points in 2014

Large product forms reached 88.8%, medium 82.5% and small 73.9%

Forms validated in both years, 2013 and 2014, improved by 1.2 percentage points to 87.2% in 2014

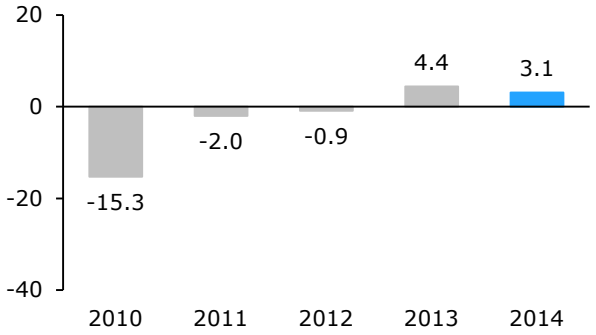


Over/Underestimation (%)

Overall overestimation improved by 1.3 percentage points in 2014

Large product forms were overestimated by 3.4%, medium by 3.5%, and small forms were underestimated by 0.2%

Overestimation of forms validated in both years, 2013 and 2014, improved by 1.4 percentage points to 0.6% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	11	6	17	10	**14**
Validated market share in unit terms	24%	17%	15%	21%	**25%**
Validated product forms	290	204	220	265	**422**

Actions

Review projection level

Germany

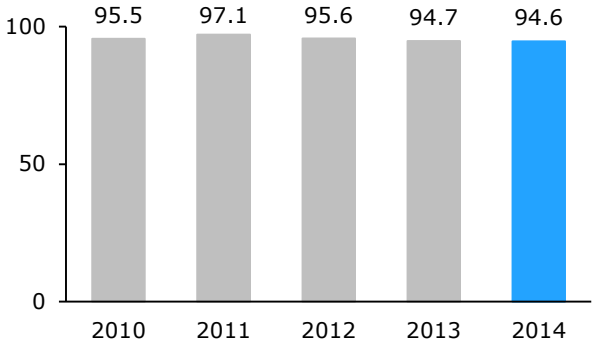
Retail Validation Study

Precision (%)

Overall precision index declined marginally by 0.1 percentage points in 2014

Large product forms reached 95.2%, medium 95.3% and small 91.4%

Forms validated in both years, 2013 and 2014, declined slightly by 0.2 percentage points to 95.3% in 2014

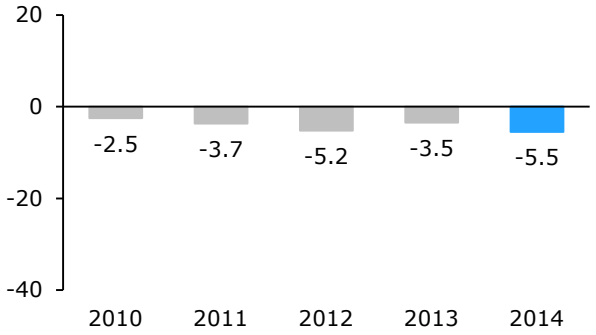


Over/Underestimation (%)

Overall underestimation increased by 2.0 percentage points in 2014

Large product forms were underestimated by 6.4%, medium by 4.0% and small by 3.5%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.5 percentage points to 5.8% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	33	33	35	30	**32**
Validated market share in unit terms	26%	24%	24%	26%	**26%**
Validated product forms	3,114	3,230	3,139	3,059	**2,995**

Actions

No action required from the statistical point of view

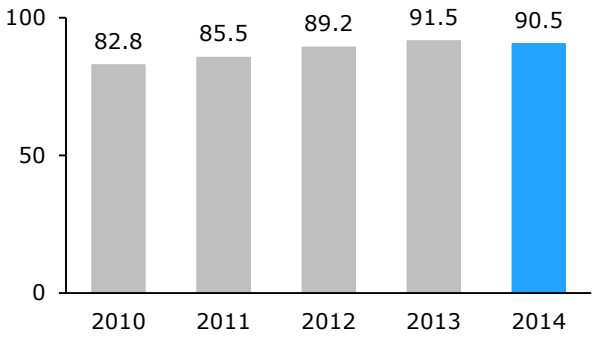
Greece

Precision (%)

Overall precision index declined by 1.0 percentage point in 2014

Large product forms reached 94.6%, medium 89.6% and small 78.9%

Forms validated in both years, 2013 and 2014, declined by 0.9 percentage points to 91.0% in 2014

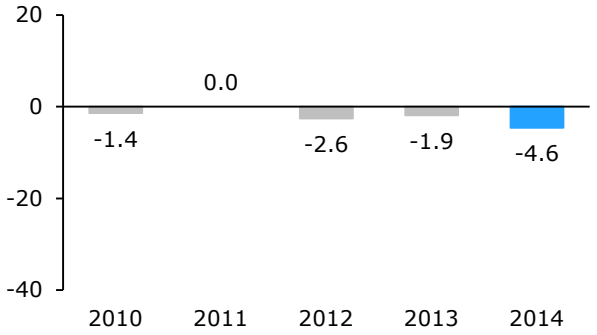


Over/Underestimation (%)

Overall underestimation increased by 2.7 percentage points in 2014

Large product forms were underestimated by 5.2%, medium by 3.8% and small by 4.4%

Underestimation of forms validated in both years, 2013 and 2014, increased by 2.9 percentage points to 3.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	92	68	85	76	**87**
Validated market share in unit terms	67%	60%	69%	68%	**68%**
Validated product forms	1,084	962	1,074	964	**1,083**

Actions

Implement enhanced data collection technology

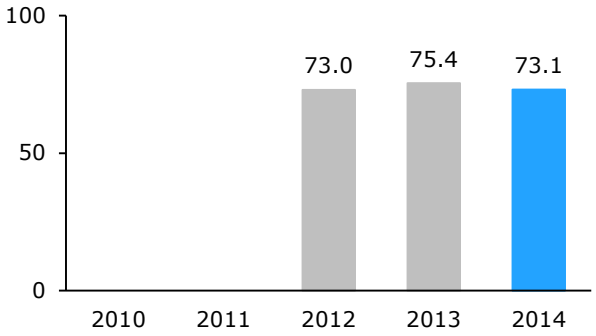
Hong Kong

Retail Validation Study

Precision (%)

Overall precision index declined by 2.3 percentage points in 2014

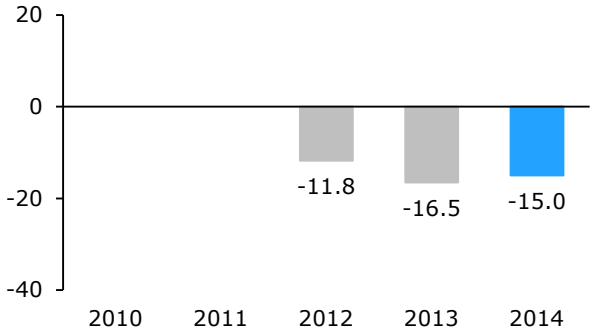
Medium product forms reached 75.3% and small 69.2%. A minor number of large product forms was grouped into the medium class for analysis



Over/Underestimation (%)

Overall underestimation improved by 1.5 percentage points in 2014

Medium product forms were underestimated by 14.0% and small by 19.2%. A minor number of large product forms was grouped into the medium class for analysis



Participation

	2010	2011	2012	2013	2014
Participating companies			26	25	**27**
Validated market share in unit terms			20%	17%	**16%**
Validated product forms			964	901	**869**

Actions

Review projection level and panel composition

Hungary

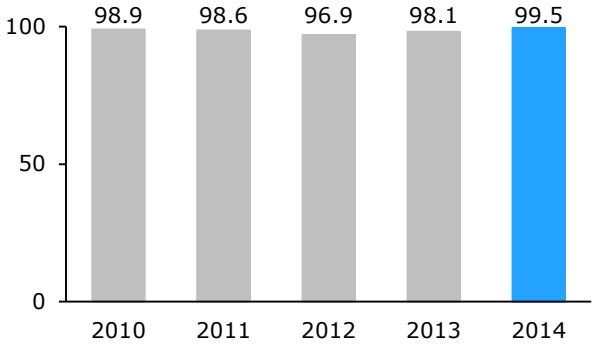
Retail+Hospital Validation Study

Precision (%)

Overall precision index improved by 1.4 percentage points in 2014

Large product forms reached a perfect 100%, medium 99.6% and small 97.6%

Forms validated in both years, 2013 and 2014, improved by 0.8 percentage points to 99.4% in 2014

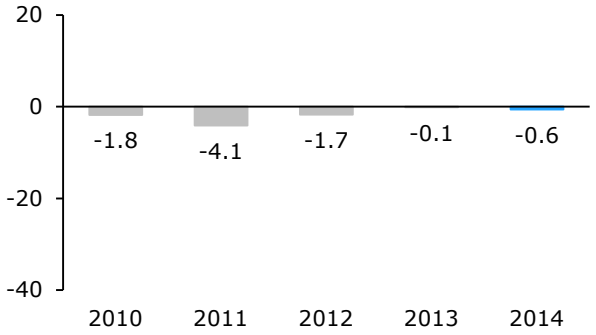


Over/Underestimation (%)

Overall underestimation increased slightly by 0.5 percentage points in 2014

Large product forms were underestimated by 0.9%, medium by 0.1% and small by 0.7%

Bias of forms validated in both years, 2013 and 2014, increased slightly from 0.0% to a 0.5% underestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	88	90	82	84	**88**
Validated market share in unit terms	78%	77%	76%	76%	**74%**
Validated product forms	1,612	1,697	1,703	1,696	**1,743**

Actions

No action required from the statistical point of view

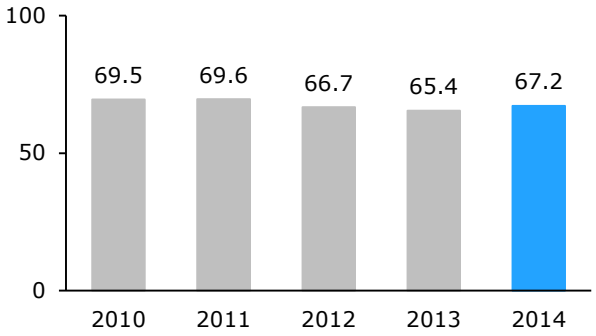
Indonesia

Total Market Validation Study

Precision (%)

Overall precision index improved by 1.8 percentage points in 2014

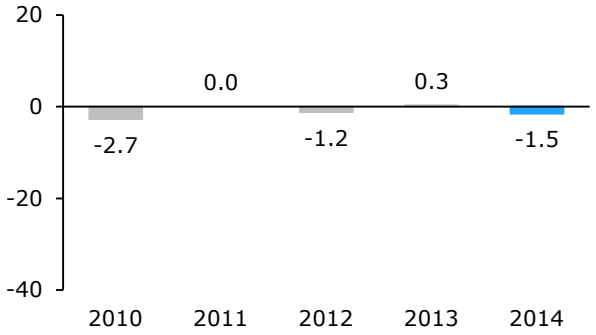
Large product forms reached 66.3%, medium 65.7% and small 73.1%



Over/Underestimation (%)

Overall bias turned from slight overestimation to small underestimation in 2014

Large product forms were underestimated by 0.5%, medium forms by 2.8% and small forms by 7.2%



Participation

	2010	2011	2012	2013	2014
Participating companies	80	78	62	64	**66**
Validated market share in unit terms	49%	48%	43%	44%	**42%**
Validated product forms	5,573	5,641	4,981	4,367	**4,536**

Actions

Review data collection and quality control process

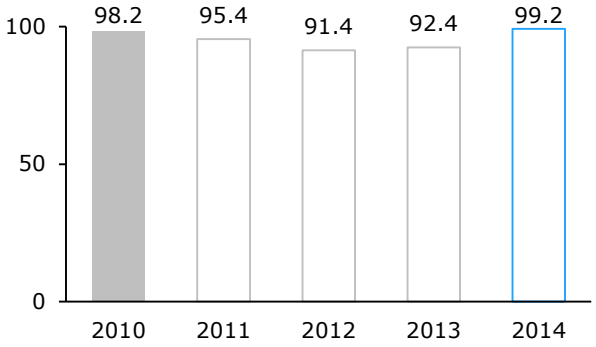
Ireland

Precision (%)

Overall precision index improved by 6.8 percentage points in 2014

Medium product forms reached 98.7% and small forms reached a perfect 100%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, improved by 10.0 percentage points to 100% in 2014



Over/Underestimation (%)

Overall underestimation improved by 0.8 percentage points in 2014

Medium product forms were underestimated by 2.1% and small by 2.0%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, improved by 4.7 percentage points to 0.5% in 2014

Participation

	2010	2011	2012	2013	2014
Participating companies	20	23	12	14	**15**
Validated market share in unit terms	16%	9%	6%	6%	**8%**
Validated product forms	313	261	188	166	**186**

Actions

Motivate more companies to participate in the validation study

Italy

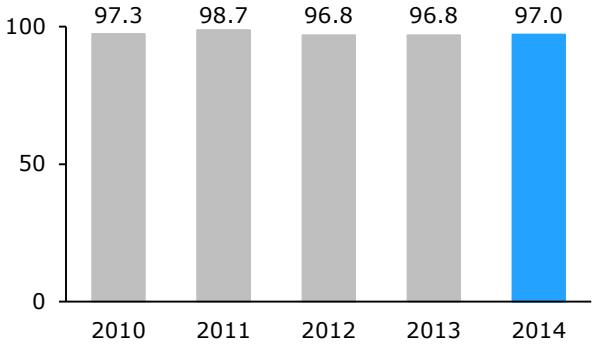
Retail Validation Study

Precision (%)

Overall precision index improved slightly by 0.2 percentage points in 2014

Large product forms reached 96.7%, medium 98.2% and small 95.3%

Forms validated in both years, 2013 and 2014, slightly improved by 0.2 percentage points to 98.0% in 2014

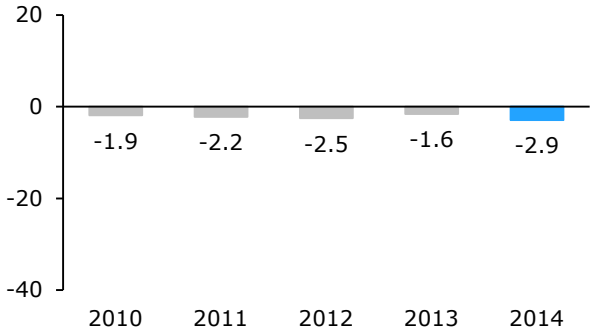


Over/Underestimation (%)

Overall underestimation increased by 1.3 percentage points in 2014

Large product forms were underestimated by 2.9%, medium by 2.9% and small by 3.3%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.7 percentage points to 2.9% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	32	28	29	31	**22**
Validated market share in unit terms	27%	33%	32%	28%	**21%**
Validated product forms	808	997	1,081	1,001	**684**

Actions

No action required from the statistical point of view

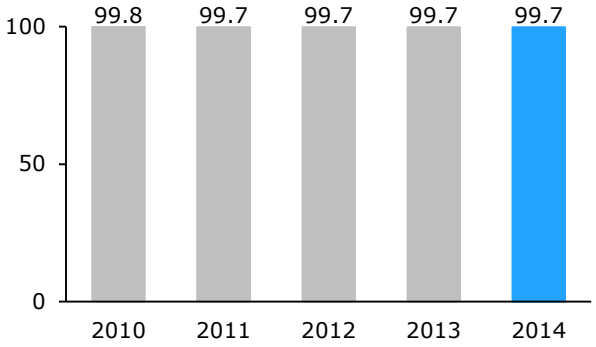
Japan

Retail+Hospital Validation Study

Precision (%)

Overall precision index remained stable in 2014

Large product forms reached 99.8%, medium 99.7% and small 99.3%



Over/Underestimation (%)

Overall bias improved to a favorable 0.0% in 2014

Large product forms had no bias, medium were overestimated by 0.8% and small by 0.7%

Participation	2010	2011	2012	2013	2014
Participating companies	51	51	53	55	**59**
Validated market share in unit terms	67%	68%	71%	70%	**73%**
Validated product forms	2,861	2,989	3,056	3,096	**3,571**

Actions

No action required from the statistical point of view

Jordan

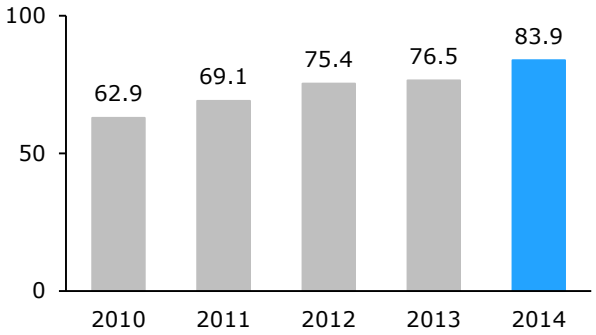
Retail Validation Study

Precision (%)

Overall precision index improved by 7.4 percentage points in 2014

Large product forms reached 87.3%, medium 82.9% and small 74.4%

Forms validated in both years, 2013 and 2014, improved by 7.9 percentage points to 85.1% in 2014

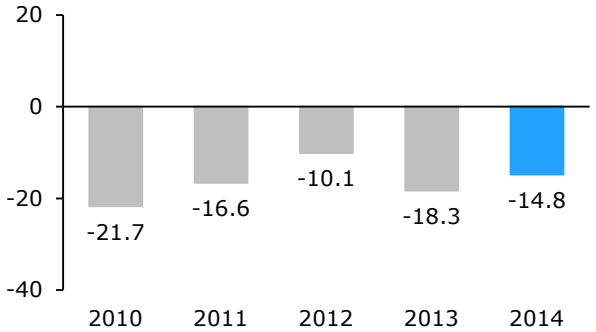


Over/Underestimation (%)

Overall underestimation improved by 3.5 percentage points in 2014

Large product forms were underestimated by 16.4%, medium by 12.3% and small by 12.4%

Underestimation of forms validated in both years, 2013 and 2014, improved by 3.1 percentage points to 14.3% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	16	15	10	10	**13**
Validated market share in unit terms	36%	31%	17%	25%	**27%**
Validated product forms	733	594	349	457	**444**

Actions

Monitor projection level

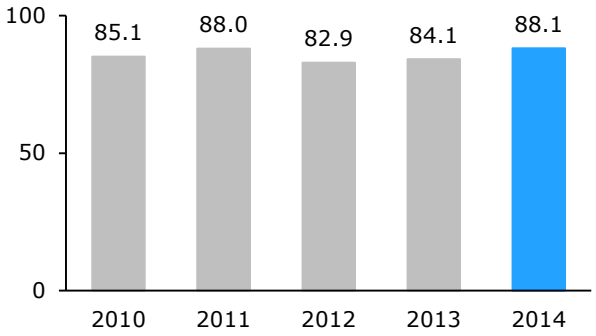
Korea

Precision (%)

Overall precision index improved by 4.0 percentage points in 2014

Large product forms reached 96.2%, medium 81.5% and small 74.0%

Forms validated in both years, 2013 and 2014, slightly declined by 0.3 percentage points to 84.3% in 2014

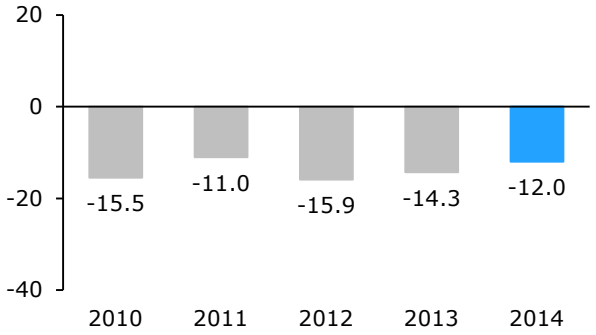


Over/Underestimation (%)

Overall underestimation improved by 2.3 percentage points in 2014

Large product forms were underestimated by 11.0%, medium by 12.1% and small by 14.9%

Underestimation of forms validated in both years, 2013 and 2014, improved by 1.0 percentage point to 10.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	23	19	16	12	**19**
Validated market share in unit terms	30%	22%	12%	18%	**12%**
Validated product forms	935	887	696	734	**770**

Actions

Review projection level and panel composition

Improve data collection and coding quality

Kuwait

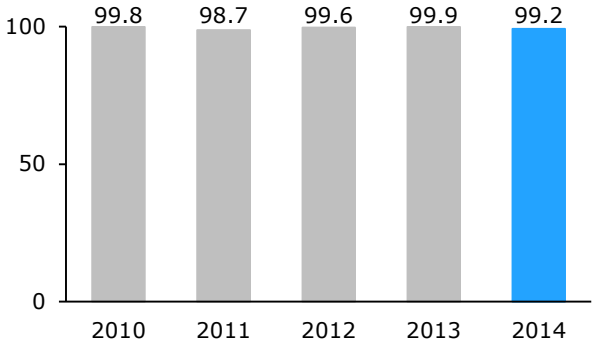
Retail Validation Study

Precision (%)

Overall precision index slightly declined by 0.7 percentage points in 2014

Large product forms reached 98.7%, medium forms reached a perfect 100%, small forms 99.5%

Forms validated in both years, 2013 and 2014, slightly declined by 0.9 percentage points to 99.1% in 2014

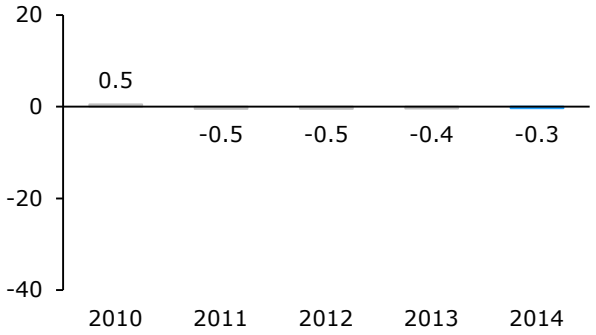


Over/Underestimation (%)

Overall underestimation slightly improved by 0.1 percentage points in 2014

Large product forms were underestimated by 0.5%, medium forms were overestimated by 0.2% and small forms were underestimated by 0.2%

Underestimation of forms validated in both years, 2013 and 2014, slightly increased by 0.3 percentage points to 0.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	15	23	26	33	**22**
Validated market share in unit terms	33%	36%	46%	51%	**34%**
Validated product forms	317	484	520	579	**419**

Actions

No action required from the statistical point of view

Latvia

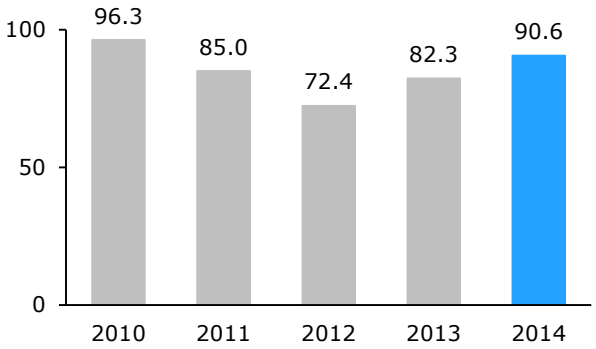
Retail Validation Study

Precision (%)

Overall precision index significantly improved by 8.3 percentage points in 2014

Large product forms reached 93.0%, medium 93.4% and small 76.7%

Forms validated in both years, 2013 and 2014, improved by 7.1 percentage points to 91.2% in 2014

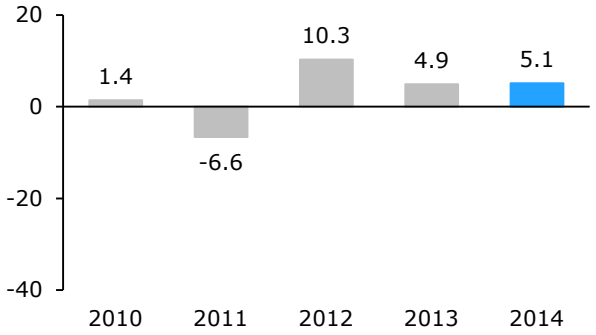


Over/Underestimation (%)

Overall overestimation slightly increased by 0.2 percentage points in 2014

Large product forms were overestimated by 4.1%, medium by 7.0% and small by 6.1%

Overestimation of forms validated in both years, 2013 and 2014, increased by 2.3 percentage points to 6.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	17	17	13	11	**25**
Validated market share in unit terms	24%	21%	15%	19%	**36%**
Validated product forms	478	483	303	335	**737**

Actions

Investigate projection methodology upgrade

Lebanon

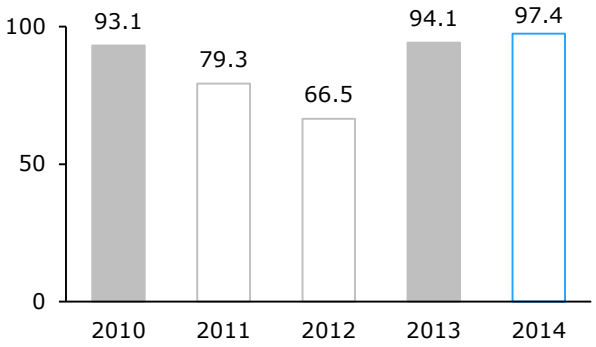
Retail Validation Study

Precision (%)

Overall precision index improved by 3.3 percentage points in 2014

Medium product forms reached a perfect 100% and small forms reached 92.9%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, improved by 13.3 percentage points to 99.2% in 2014

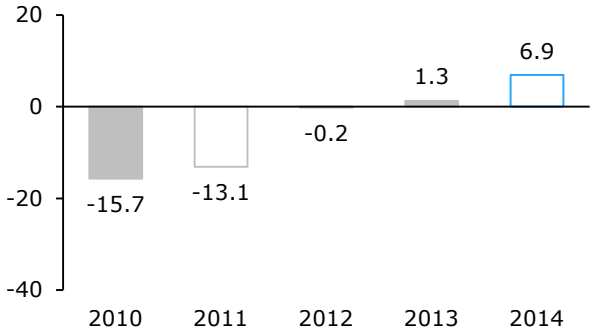


Over/Underestimation (%)

Overall overestimation increased by 5.6 percentage points in 2014

Medium product forms were overestimated by 7.3% and small by 2.6%. A minor number of large product forms was grouped into the medium class for analysis

Overestimation of forms validated in both years, 2013 and 2014, increased by 2.9 percentage points to 6.8% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	12	24	8	19	**8**
Validated market share in unit terms	12%	9%	6%	15%	**8%**
Validated product forms	138	192	131	290	**118**

Actions

Increase and stabilize validation participation

Analyze projection level

Lithuania

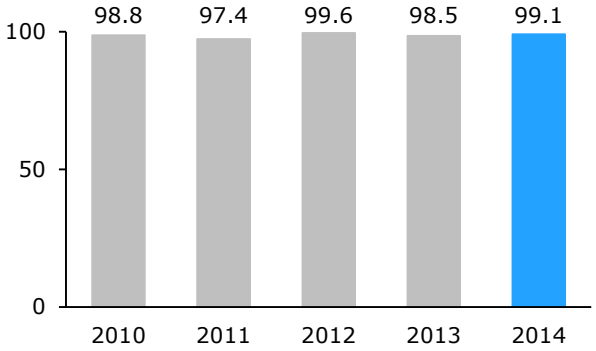
Retail Validation Study

Precision (%)

Overall precision index slightly improved by 0.6 percentage points in 2014

Large and medium product forms both reached a perfect 100%, small forms reached 94.4%

Forms validated in both years, 2013 and 2014, slightly improved by 0.3 percentage points to 99.6% in 2014

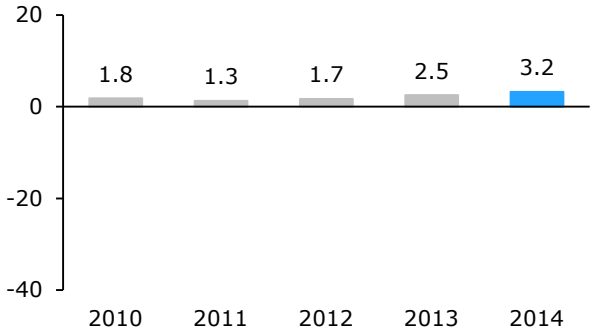


Over/Underestimation (%)

Overall overestimation slightly increased by 0.7 percentage points in 2014

Large product forms were overestimated by 4.7%, medium by 2.4%, and small forms were underestimated by 2.1%

Overestimation of forms validated in both years, 2013 and 2014, slightly increased by 0.6 percentage points to 3.3% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	16	21	12	11	**25**
Validated market share in unit terms	28%	19%	13%	17%	**30%**
Validated product forms	473	364	203	266	**619**

Actions

No action required from the statistical point of view

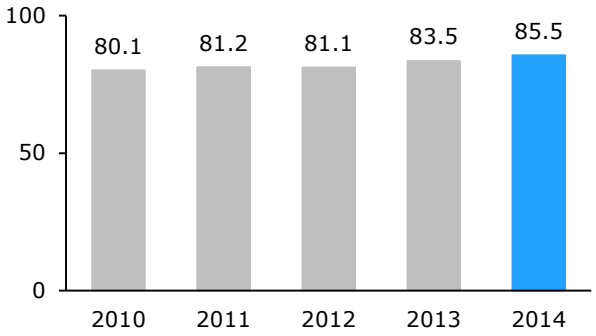
Malaysia

Retail Validation Study

Precision (%)

Overall precision index improved by 2.0 percentage points in 2014

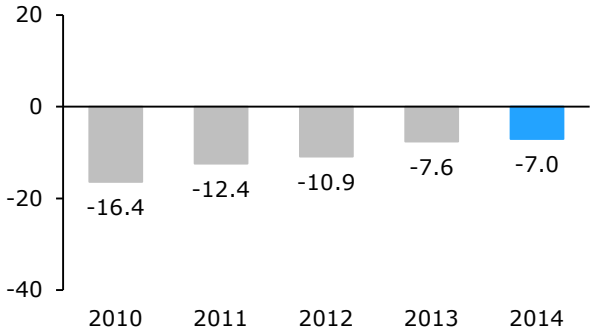
Large product forms reached 88.1%, medium 84.5% and small 78.9%



Over/Underestimation (%)

Overall underestimation improved by 0.6 percentage points in 2014

Large product forms were underestimated by 4.6%, medium by 9.7% and small by 10.0%



Participation	2010	2011	2012	2013	2014
Participating companies	61	63	64	74	**88**
Validated market share in unit terms	33%	35%	32%	32%	**29%**
Validated product forms	2,332	2,519	2,795	3,392	**4,430**

Actions

Increase pharmacy panel

Enhance projection methodology

Mexico

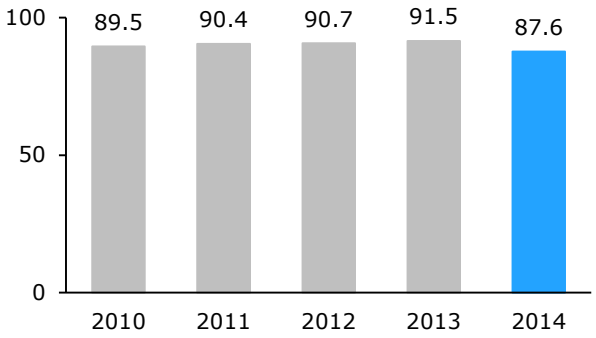
Retail Validation Study

Precision (%)

Overall precision index declined by 3.9 percentage points in 2014

Large product forms reached 90.4%, medium 86.9% and small 79.4%

Forms validated in both years, 2013 and 2014, declined by 6.6 percentage points to 85.6% in 2014

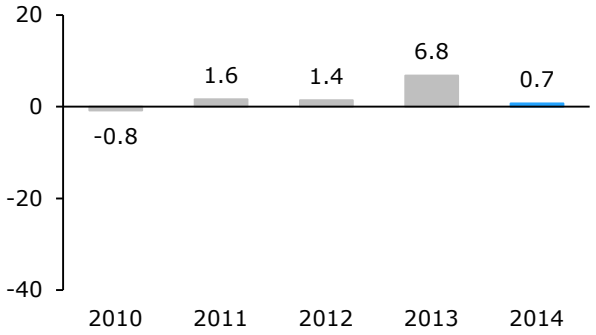


Over/Underestimation (%)

Overall overestimation improved by 6.1 percentage points in 2014

Large product forms were underestimated by 1.0%, medium forms were overestimated by 3.0% and small by 1.0%

Overestimation of forms validated in both years, 2013 and 2014, improved by 2.9 percentage points to 2.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	36	37	25	23	**16**
Validated market share in unit terms	39%	35%	35%	31%	**24%**
Validated product forms	1,762	1,722	1,619	1,548	**1,151**

Actions

Review internal quality assurance process

Morocco

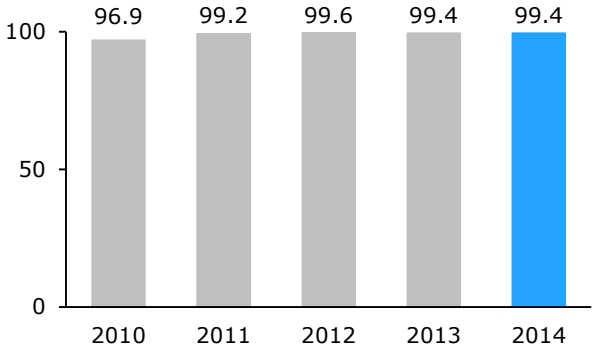
Retail Validation Study

Precision (%)

Overall precision index remained unchanged in 2014

Large product forms reached 99.0%, medium forms reached a perfect 100% and small forms reached 99.4%

Forms validated in both years, 2013 and 2014, slightly declined by 0.4 percentage points to 99.2% in 2014

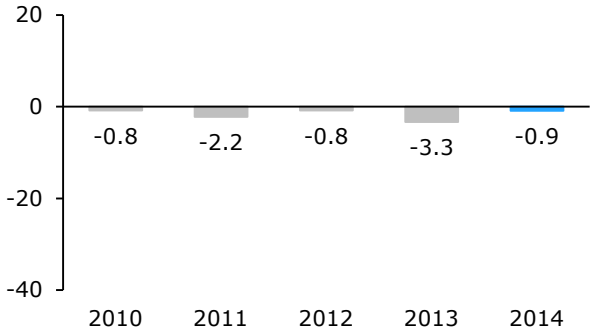


Over/Underestimation (%)

Overall underestimation improved by 2.4 percentage points in 2014

Large product forms were underestimated by 1.0%, medium by 0.6% and small by 1.2%

Underestimation of forms validated in both years, 2013 and 2014, improved by 2.4 percentage points to 0.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	111	155	95	63	**66**
Validated market share in unit terms	59%	80%	59%	36%	**47%**
Validated product forms	963	1,347	958	650	**703**

Actions

No action required from the statistical point of view

New Zealand

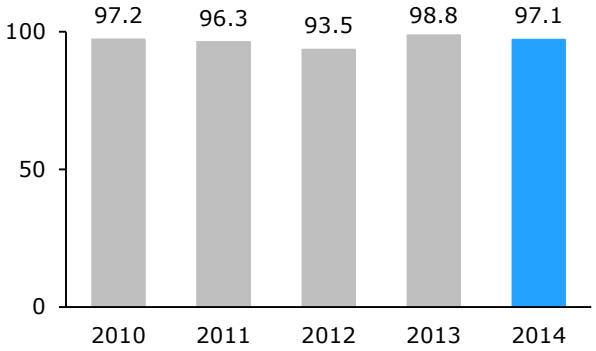
Retail Validation Study

Precision (%)

Overall precision index declined by 1.7 percentage points in 2014

Medium product forms reached 97.5% and small 96.3%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, declined by 2.0 percentage points to 95.8% in 2014

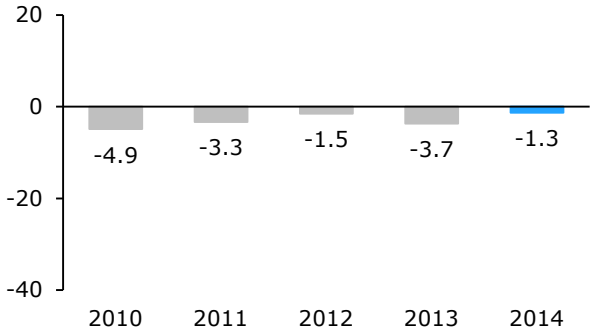


Over/Underestimation (%)

Overall underestimation improved by 2.4 percentage points in 2014

Medium product forms were underestimated by 1.1% and small forms by 2.2%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, improved by 0.8 percentage points to 1.9% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	33	35	43	34	**32**
Validated market share in unit terms	40%	58%	69%	50%	**36%**
Validated product forms	325	416	506	410	**336**

Actions

No action required from the statistical point of view

Pakistan

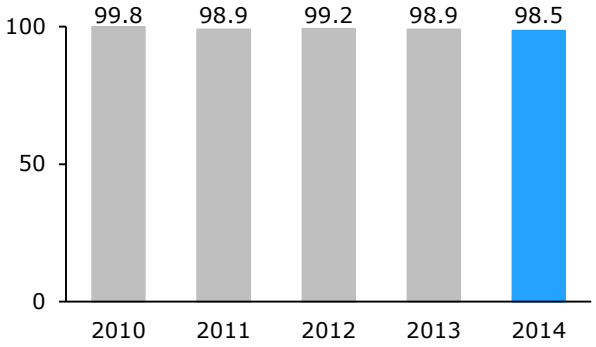
Retail Validation Study

Precision (%)

Overall precision index slightly declined by 0.4 percentage points in 2014

Large product forms reached 99.6%, medium 97.9% and small 96.2%

Forms validated in both years, 2013 and 2014, remained unchanged at 99.0% in 2014

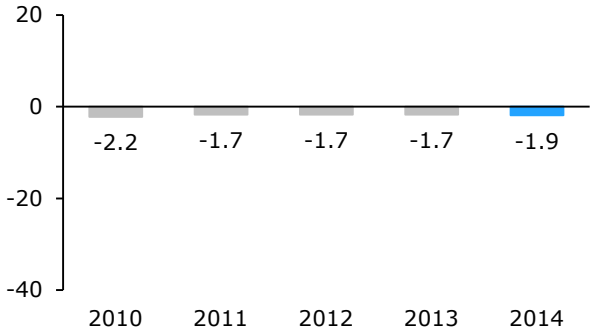


Over/Underestimation (%)

Overall underestimation increased slightly by 0.2 percentage points in 2014

Large product forms were underestimated by 1.5%, medium by 2.4% and small by 2.5%

Underestimation of forms validated in both years, 2013 and 2014, remained unchanged at 1.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	103	108	104	101	**94**
Validated market share in unit terms	79%	78%	78%	70%	**73%**
Validated product forms	2,633	2,881	2,843	2,474	**2,524**

Actions

No action required from the statistical point of view

Paraguay

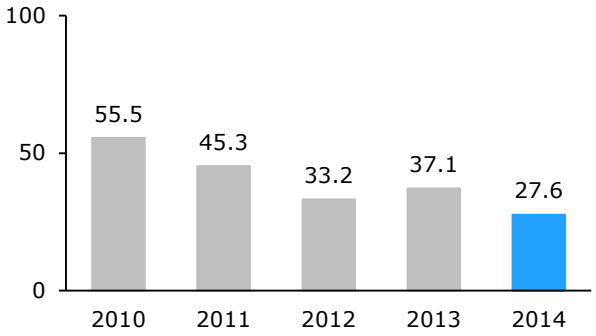
Retail Validation Study

Precision (%)

Overall precision index declined by 9.5 percentage points in 2014

Large product forms reached 28.2%, medium 27.7% and small 25.2%

Forms validated in both years, 2013 and 2014, declined by 3.9 percentage points to 31.6% in 2014

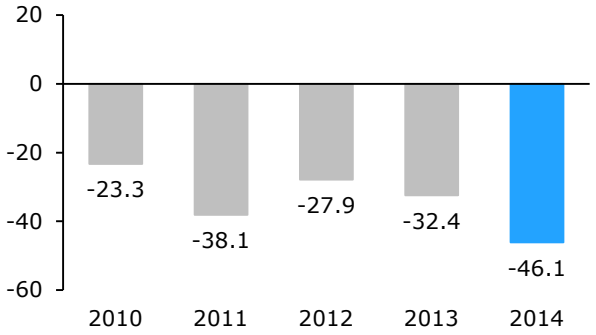


Over/Underestimation (%)

Overall underestimation increased by 13.7 percentage points in 2014

Large product forms were underestimated by 51.0%, medium by 37.1% and small by 33.8%

Underestimation of forms validated in both years, 2013 and 2014, increased by 5.6 percentage points to 41.3% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	78	81	106	68	**82**
Validated market share in unit terms	50%	57%	48%	47%	**51%**
Validated product forms	1,495	1,622	1,459	1,386	**1,553**

Actions

Improve panel fulfillment

Review internal processes

Peru

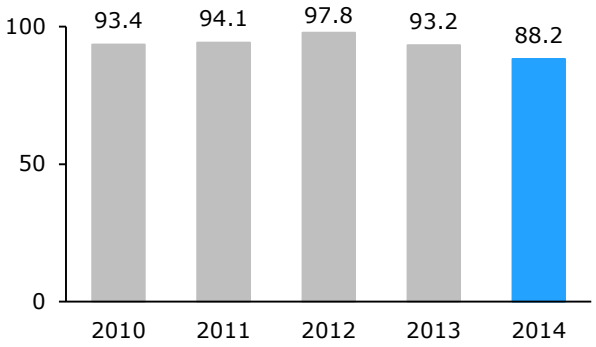
Retail Validation Study

Precision (%)

Overall precision index declined by 5.0 percentage points in 2014

Large product forms reached 89.3%, medium 89.8% and small 81.4%

Forms validated in both years, 2013 and 2014, improved by 2.5 percentage points to 93.2% in 2014

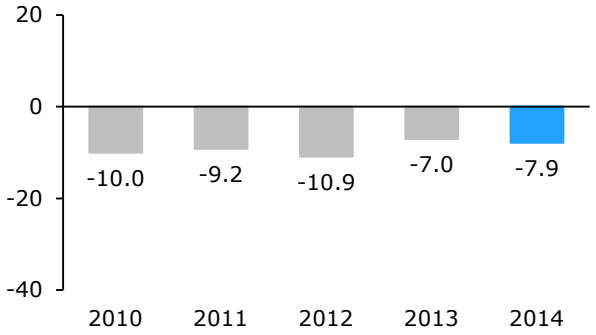


Over/Underestimation (%)

Overall underestimation increased by 0.9 percentage points in 2014

Large product forms were underestimated by 9.8%, medium by 5.4% and low by 6.5%

Underestimation of forms validated in both years, 2013 and 2014, improved by 5.0 percentage points to 3.8% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	22	28	14	14	**14**
Validated market share in unit terms	39%	44%	23%	24%	**21%**
Validated product forms	1,236	1,281	710	749	**627**

Actions

Review internal quality assurance process

Enhance input quality control

Motivate more companies to participate in the validation study

Philippines

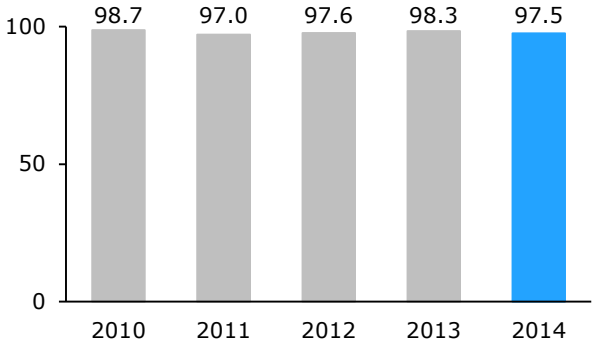
Retail Validation Study

Precision (%)

Overall precision index declined slightly by 0.8 percentage points in 2014

Large product forms reached 99.2%, medium 95.9% and small 94.9%

Forms validated in both years, 2013 and 2014, slightly improved by 0.2 percentage points to 98.5% in 2014

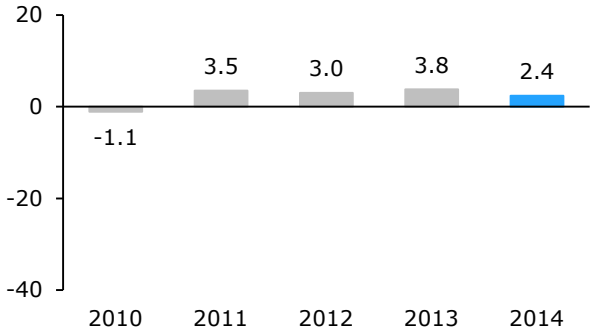


Over/Underestimation (%)

Overall overestimation improved by 1.4 percentage points in 2014

Large product forms were overestimated by 2.0%, medium by 3.5% and small by 3.5%

Overestimation of forms validated in both years, 2013 and 2014, improved by 1.1 percentage points to 2.7% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	24	23	19	17	**23**
Validated market share in unit terms	41%	42%	35%	34%	**40%**
Validated product forms	852	805	616	613	**792**

Actions

Enhance sample design and projection methodology

Poland

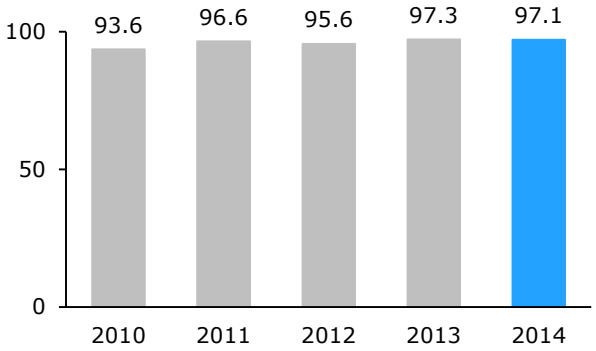
Retail+Hospital Validation Study

Precision (%)

Overall precision index declined slightly by 0.2 percentage points in 2014

Large product forms reached 98.9%, medium 95.4% and small 94.5%

Forms validated in both years, 2013 and 2014, declined marginally by 0.1 percentage points to 97.3% in 2014

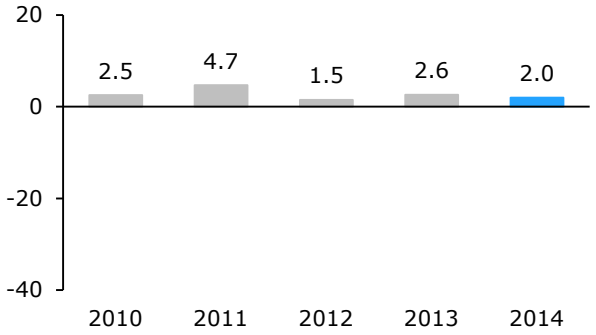


Over/Underestimation (%)

Overall overestimation improved by 0.6 percentage points in 2014

Large and medium product forms were overestimated by 2.8% and 1.6%, respectively, small forms were underestimated by 0.5%

Overestimation of forms validated in both years, 2013 and 2014, remained stable at 2.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	65	82	90	74	**75**
Validated market share in unit terms	31%	55%	39%	30%	**34%**
Validated product forms	1,104	1,667	1,383	1,139	**1,301**

Actions

No action required from the statistical point of view

Russia

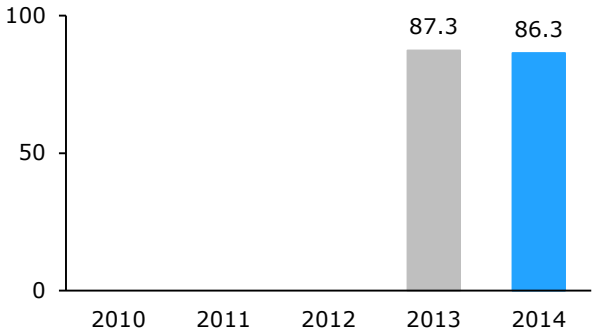
Retail+Hospital Validation Study

Precision (%)

Overall precision index slightly declined by 1.0 percentage point in 2014

Large product forms reached 87.6%, medium 88.5% and small 77.8%

Forms validated in both years, 2013 and 2014, slightly improved by 0.1 percentage points to 89.8% in 2014

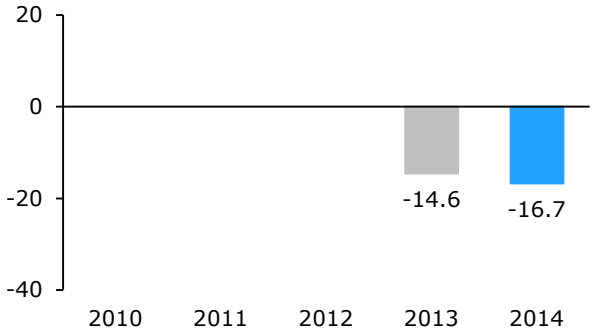


Over/Underestimation (%)

Overall underestimation increased by 2.1 percentage points in 2014

Large product forms were underestimated by 16.6%, medium by 16.4% and small forms by 18.2%

Underestimation of forms validated in both years, 2013 and 2014, slightly increased by 0.9 percentage points to 15.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies				65	**70**
Validated market share in unit terms				27%	**22%**
Validated product forms				1,555	**1,254**

Actions

Adjust projection level

Saudi Arabia

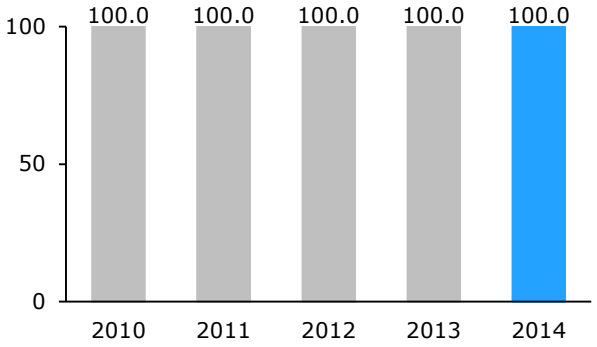
Retail Validation Study

Precision (%)

Overall precision index reached again a perfect 100% in 2014

Large and medium product forms both reached 100%, small forms reached 99.7%

Forms validated in both years, 2013 and 2014, declined marginally by 0.1 percentage points to 99.9% in 2014

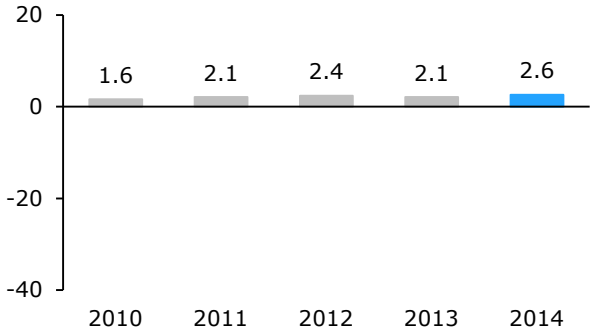


Over/Underestimation (%)

Overall overestimation increased slightly by 0.5 percentage points in 2014

Large product forms were overestimated by 2.5%, medium by 2.7% and small by 3.4%

Overestimation of forms validated in both years, 2013 and 2014, increased slightly by 0.4 percentage points to 2.6% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	50	50	48	60	**38**
Validated market share in unit terms	52%	59%	53%	65%	**49%**
Validated product forms	758	763	726	917	**661**

Actions

No action required from the statistical point of view

Serbia

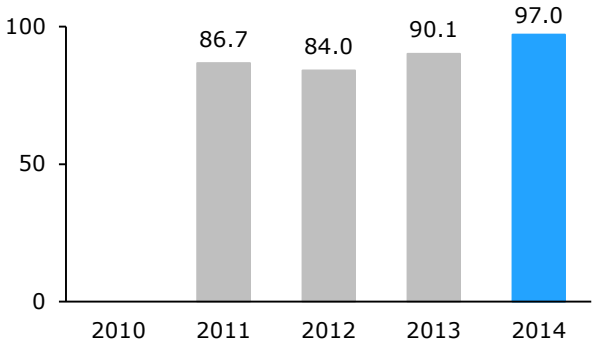
Retail+Hospital Validation Study

Precision (%)

Overall precision index improved by 6.9 percentage points in 2014

Large product forms reached 97.3%, medium 97.8% and small 94.1%

Forms validated in both years, 2013 and 2014, improved by 6.1 percentage points to 97.3% in 2014

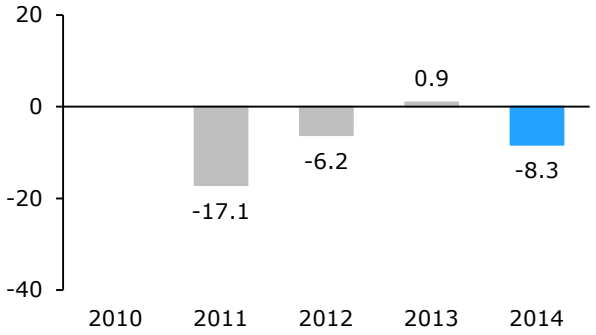


Over/Underestimation (%)

Overall bias increased from 0.9% overestimation in 2013 to 8.3% underestimation in 2014

Large product forms were underestimated by 8.9%, medium by 8.2% and small by 5.9%

Bias of forms validated in both years, 2013 and 2014, increased from 1.0% overestimation in 2013 to 8.6% underestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies		15	21	16	**30**
Validated market share in unit terms		47%	57%	56%	**67%**
Validated product forms		349	478	456	**609**

Actions

No action required from the statistical point of view

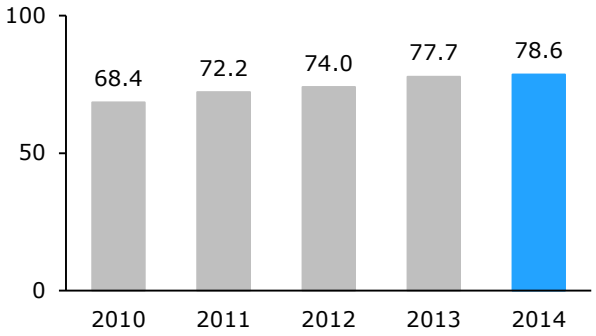
Singapore

Retail Validation Study

Precision (%)

Overall precision index improved by 0.9 percentage points in 2014

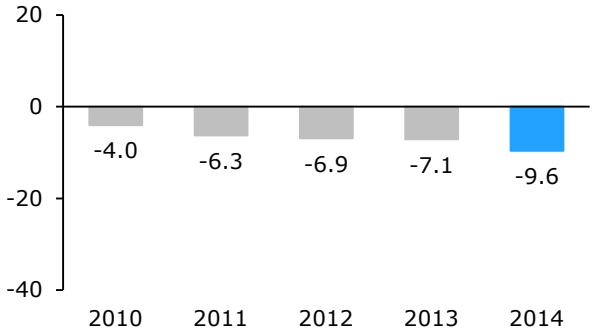
Large product forms reached 80.9%, medium 77.3% and small 73.3%



Over/Underestimation (%)

Overall underestimation increased by 2.5 percentage points in 2014

Large product forms were underestimated by 7.6%, medium by 10.9% and small by 13.0%



Participation

	2010	2011	2012	2013	2014
Participating companies	46	50	49	51	**54**
Validated market share in unit terms	45%	39%	38%	40%	**34%**
Validated product forms	1,855	1,936	2,035	2,392	**2,382**

Actions

Increase pharmacy panel

Slovak Republic

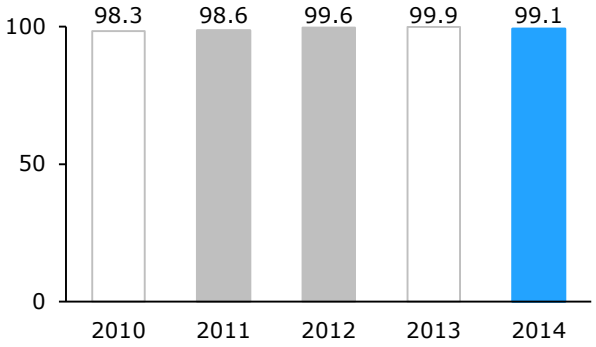
Retail+Hospital Validation Study

Precision (%)

Overall precision index declined slightly by 0.8 percentage points in 2014

Large product forms reached 99.1%, medium 99.3% and small 98.9%

Forms validated in both years, 2013 and 2014, declined by 2.1 percentage points to 96.8% in 2014

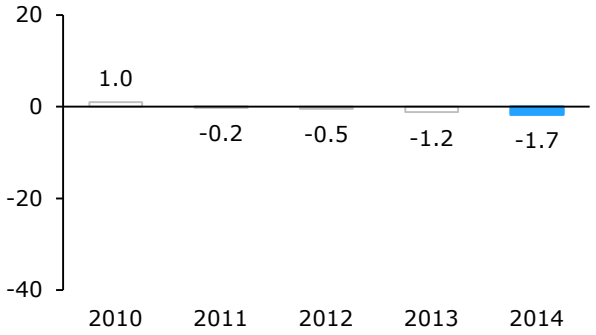


Over/Underestimation (%)

Overall underestimation increased slightly by 0.5 percentage points in 2014

Large product forms were underestimated by 1.7%, medium by 1.8% and small by 1.4%

Underestimation of forms validated in both years, 2013 and 2014, increased slightly by 0.6 percentage points to 2.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	7	35	13	16	**17**
Validated market share in unit terms	6%	49%	12%	8%	**27%**
Validated product forms	219	1,049	397	252	**443**

Actions

No action required from the statistical point of view

Slovenia

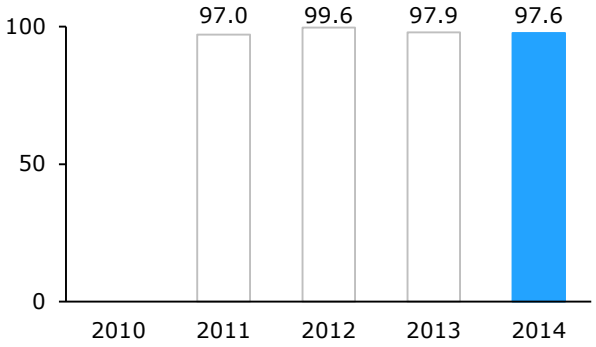
Retail+Hospital Validation Study

Precision (%)

Overall precision index slightly declined by 0.3 percentage points in 2014

Large product forms reached a perfect 100%, medium 97.0% and small 90.6%

Forms validated in both years, 2013 and 2014, declined by 4.5 percentage points to 95.5% in 2014

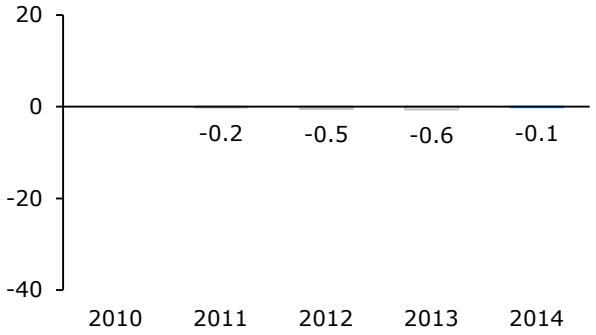


Over/Underestimation (%)

Overall underestimation improved by 0.5 percentage points in 2014

Large product forms were overestimated by 0.2%, medium were underestimated by 0.6% and small forms were overestimated by 0.2%

Underestimation of forms validated in both years, 2013 and 2014, increased by 2.0 percentage points to 2.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies		9	5	7	**11**
Validated market share in unit terms		8%	6%	5%	**30%**
Validated product forms		255	141	95	**356**

Actions

No action required from the statistical point of view

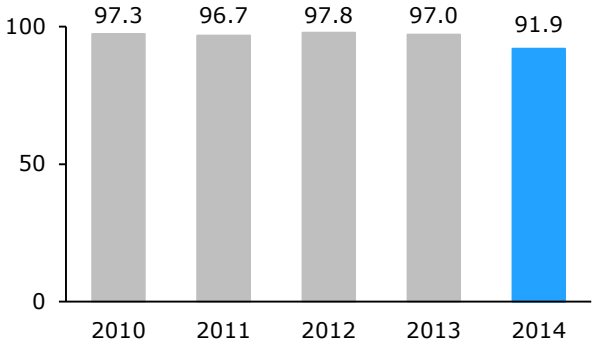
Spain

Precision (%)

Overall precision index declined by 5.1 percentage points in 2014

Large product forms reached 91.1%, medium 93.9% and small 90.8%

Forms validated in both years, 2013 and 2014, improved by 1.3 percentage points to 97.8% in 2014

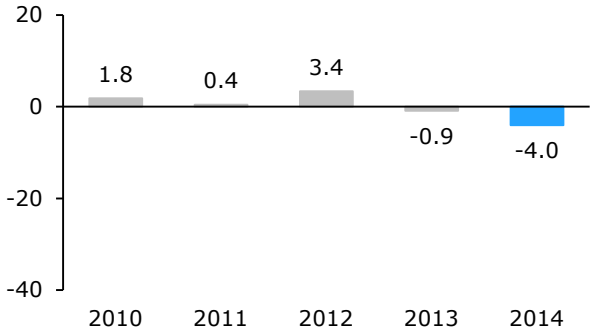


Over/Underestimation (%)

Overall underestimation increased by 3.1 percentage points in 2014

Large product forms were underestimated by 3.1%, medium by 5.0% and small by 6.3%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.9 percentage points to 3.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	24	28	24	15	**17**
Validated market share in unit terms	18%	23%	18%	14%	**17%**
Validated product forms	534	745	682	548	**635**

Actions

Increase direct sales sample

Switzerland

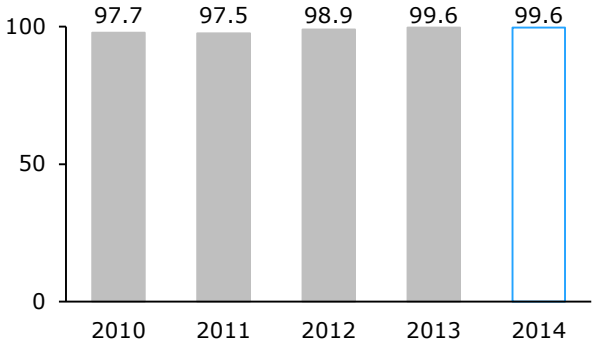
Retail+Hospital Validation Study

Precision (%)

Overall precision index remained unchanged in 2014

Large and medium product forms both reached a perfect 100%, small forms reached 97.6%

Forms validated in both years, 2013 and 2014, declined negligibly by 0.1 percentage points to 99.7% in 2014

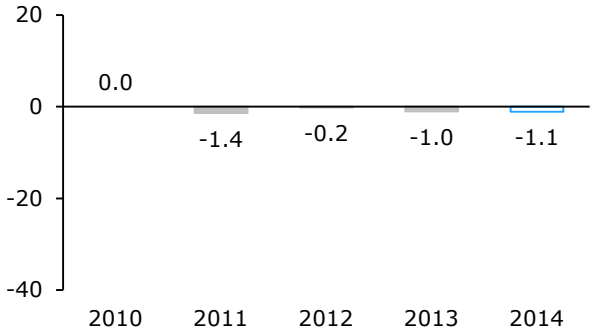


Over/Underestimation (%)

Overall underestimation increased marginally by 0.1 percentage points in 2014

Large product forms were underestimated by 0.8%, medium by 1.1% and small by 1.6%

Underestimation of forms validated in both years, 2013 and 2014, slightly improved by 0.1 percentage points to 0.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	56	55	31	26	**17**
Validated market share in unit terms	50%	48%	39%	27%	**9%**
Validated product forms	2,443	2,459	1,899	1,280	**591**

Actions

Motivate more companies to participate in the validation study

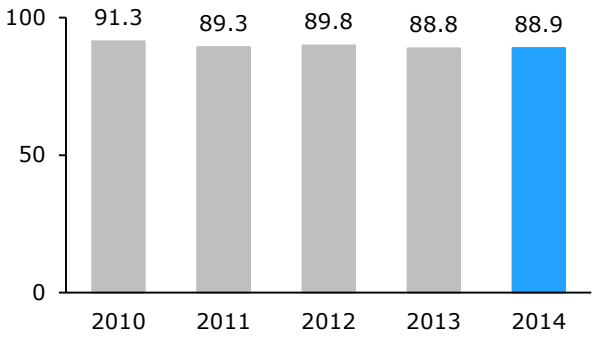
Thailand

Retail Validation Study

Precision (%)

Overall precision index slightly improved by 0.1 percentage points in 2014

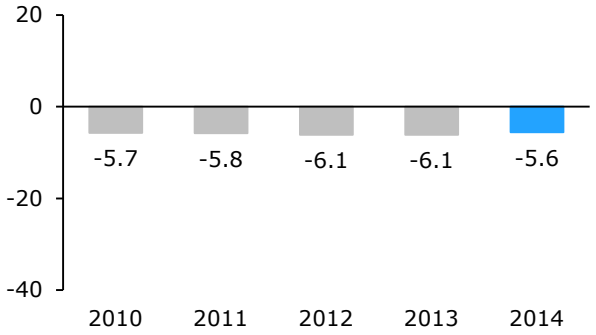
Large product forms reached 91.1%, medium 86.7% and small 85.7%



Over/Underestimation (%)

Overall underestimation improved by 0.5 percentage points in 2014

Large product forms were underestimated by 4.7%, medium by 7.2% and small by 5.9%



Participation	2010	2011	2012	2013	2014
Participating companies	43	44	47	46	**43**
Validated market share in unit terms	30%	32%	35%	37%	**34%**
Validated product forms	942	1,011	999	1,063	**983**

Actions

Review panel composition

Tunisia

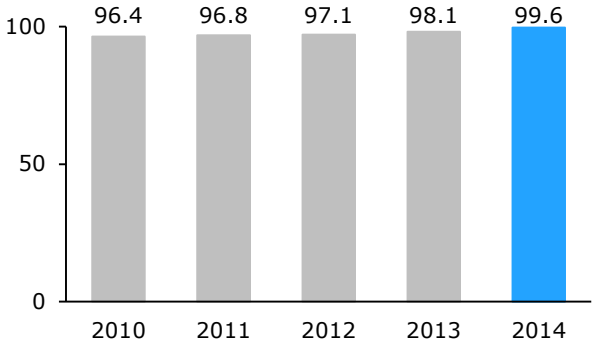
Retail Validation Study

Precision (%)

Overall precision index improved by 1.5 percentage points in 2014

Large product forms reached a perfect 100%, medium forms reached 98.8% and small forms 99.6%

Forms validated in both years, 2013 and 2014, improved by 0.5 percentage points to 99.4% in 2014

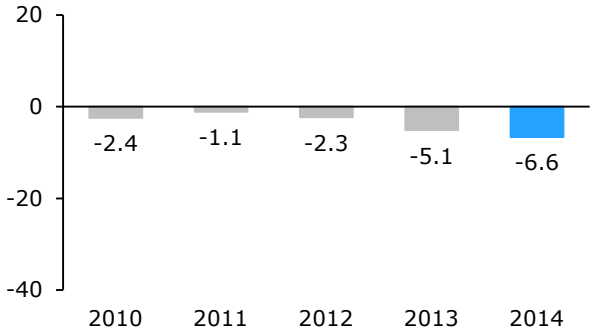


Over/Underestimation (%)

Overall underestimation increased by 1.5 percentage points in 2014

Large product forms were underestimated by 7.7%, medium by 4.7% and small forms by 6.1%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.1 percentage points to 6.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	29	27	22	19	**19**
Validated market share in unit terms	42%	45%	45%	37%	**39%**
Validated product forms	524	591	571	431	**506**

Actions

Validate wholesaler coverage

Turkey

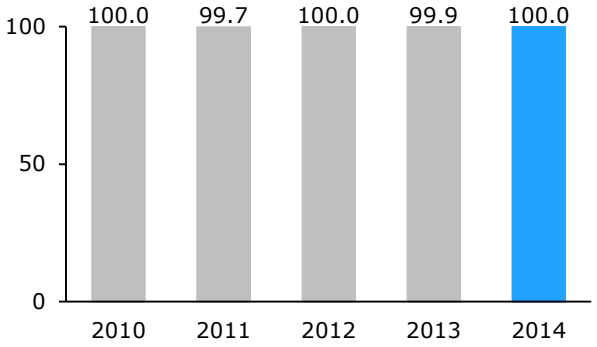
Retail Validation Study

Precision (%)

Overall precision index slightly improved by 0.1 percentage points to a perfect 100% in 2014

Large and medium product forms both reached 100% and small forms 99.8%

Forms validated in both years, 2013 and 2014, slightly improved by 0.1 percentage points to 99.9% in 2014

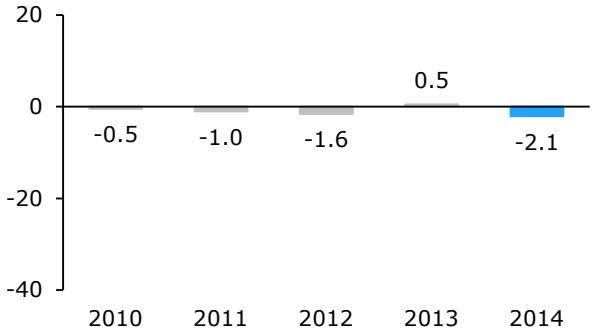


Over/Underestimation (%)

Overall bias turned from small overestimation to slight underestimation in 2014

Large product forms were underestimated by 2.0%, medium by 2.1% and small forms by 2.6%

Bias of forms validated in both years, 2013 and 2014, turned from 0.5% overestimation to 2.2% underestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	59	34	54	42	**60**
Validated market share in unit terms	59%	37%	55%	35%	**47%**
Validated product forms	1,341	763	1,241	847	**1,005**

Actions

No action required from the statistical point of view

United Arab Emirates

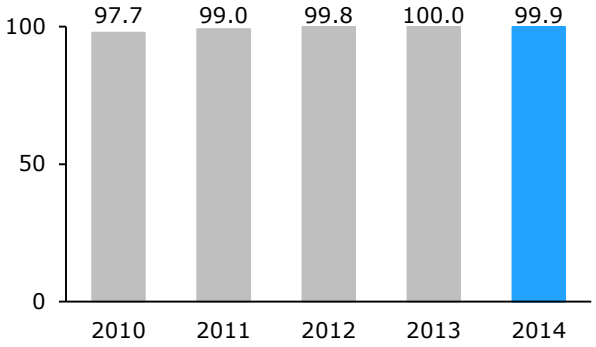
Retail Validation Study

Precision (%)

Overall precision index declined marginally by 0.1 percentage points in 2014

Large and medium product forms both reached a perfect 100%, small forms reached 99.4%

Forms validated in both years, 2013 and 2014, declined negligibly by 0.1 percentage points to 99.9% in 2014

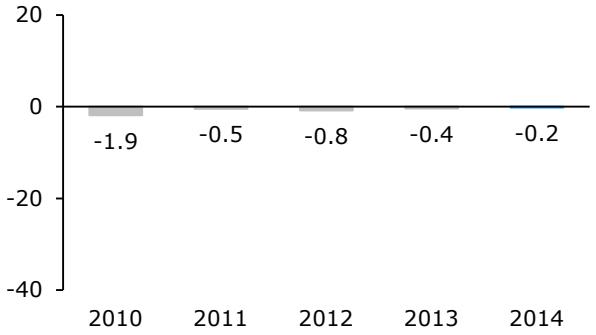


Over/Underestimation (%)

Overall underestimation slightly improved by 0.2 percentage points in 2014

Large product forms showed no bias at all, medium and small forms were both underestimated by 0.4%

Underestimation of forms validated in both years, 2013 and 2014, slightly improved by 0.2 percentage points to 0.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	23	30	37	43	**26**
Validated market share in unit terms	41%	40%	62%	70%	**35%**
Validated product forms	510	675	936	1,019	**651**

Actions

No action required from the statistical point of view

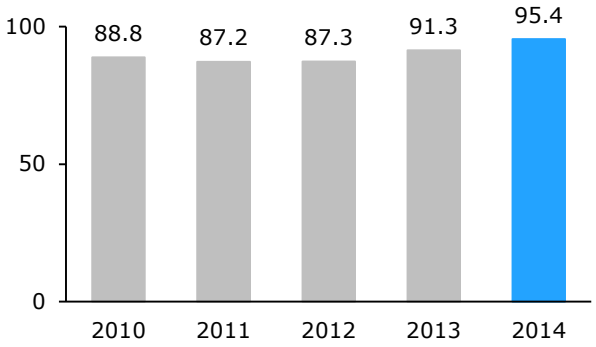
United Kingdom

Retail Validation Study

Precision (%)

Overall precision index improved by 4.1 percentage points in 2014

Large product forms reached a perfect 100%, medium 96.3% and small 78.1%



Over/Underestimation (%)

Overall overestimation increased slightly by 0.9 percentage points in 2014

Large product forms were overestimated by 0.7%, medium by 1.9% and small by 1.3%

Participation

	2010	2011	2012	2013	2014
Participating companies	94	88	82	85	**42**
Validated market share in value terms	48%	31%	29%	29%	**13%**
Validated product forms	726	613	665	638	**318**

Actions

No action required from the statistical point of view

Uruguay

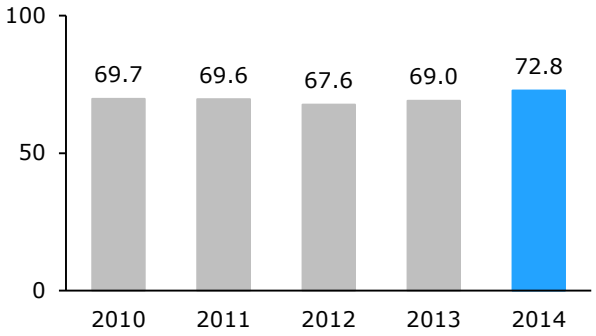
Retail+Mutuales Validation Study

Precision (%)

Overall precision index improved by 3.8 percentage points in 2014

Large product forms reached 75.7%, medium 71.8% and small 65.4%

Forms validated in both years, 2013 and 2014, improved by 2.4 percentage points to 72.1% in 2014

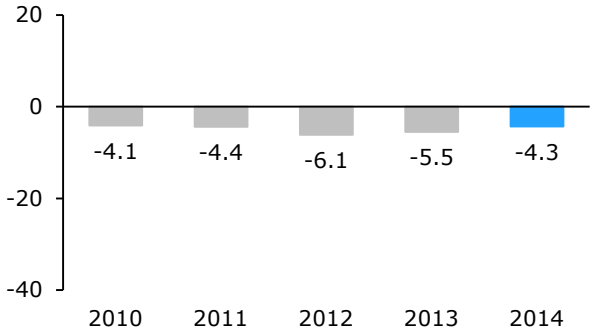


Over/Underestimation (%)

Overall underestimation improved by 1.2 percentage points in 2014

Large product forms were underestimated by 3.6%, medium by 3.9% and small by 8.4%

Underestimation of forms validated in both years, 2013 and 2014, improved by 2.5 percentage points to 3.1% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	15	19	15	19	**18**
Validated market share in unit terms	45%	46%	50%	53%	**57%**
Validated product forms	990	995	1,156	1,257	**1,271**

Actions

Review internal processes

USA

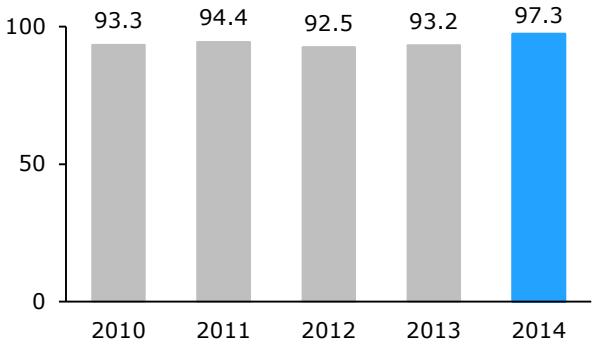
Retail+Hospital Validation Study

Precision (%)

Overall precision index improved by 4.1 percentage points in 2014

Large product forms reached a perfect 100%, medium reached 96.4% and small 89.8%

Forms validated in both years, 2013 and 2014, improved by 3.3 percentage points to 97.1% in 2014

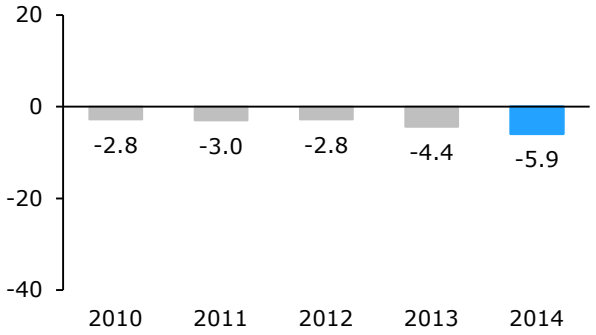


Over/Underestimation (%)

Overall underestimation increased by 1.5 percentage points in 2014

Large product forms were underestimated by 4.3%, medium by 7.2% and small by 7.9%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.4 percentage points to 5.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	67	61	58	60	**66**
Validated market share in value terms *					**88%**
Validated product forms	1,213	1,188	1,114	1,099	**1,062**

Actions

NSP is implementing an enhanced product level retail projection methodology in January 2016, restating 6 years of history. This retail estimation enhancement is expected to improve accuracy and reduce the overall bias slightly as of 2015

* The validated market refers to branded prescription products
The share is calculated in value terms

Venezuela

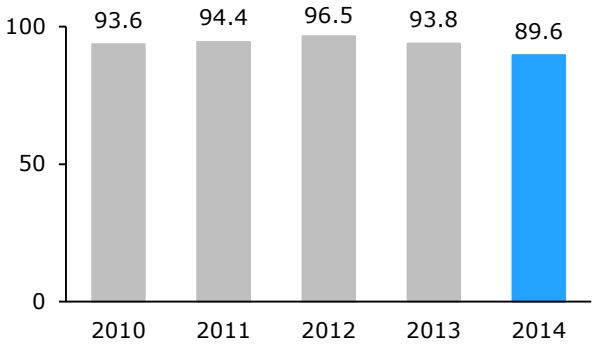
Retail Validation Study

Precision (%)

Overall precision index declined by 4.2 percentage points in 2014

Large product forms reached 89.0%, medium 91.7% and small 87.2%

Forms validated in both years, 2013 and 2014, declined by 2.0 percentage points to 91.1% in 2014

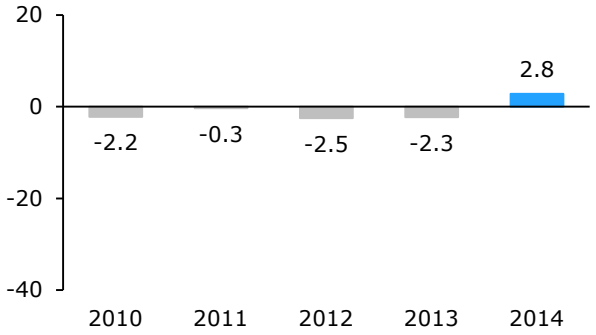


Over/Underestimation (%)

Overall bias turned from 2.3% underestimation in 2013 to 2.8% overestimation in 2014

Large product forms were overestimated by 4.2%, medium by 1.6% and small by 0.5%

Bias of forms validated in both years, 2013 and 2014, turned from 2.9% underestimation in 2013 to 3.6% overestimation in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	80	78	45	48	**37**
Validated market share in unit terms	63%	62%	37%	57%	**39%**
Validated product forms	1,909	1,866	1,246	1,504	**1,160**

Actions

Review internal quality assurance process

Vietnam

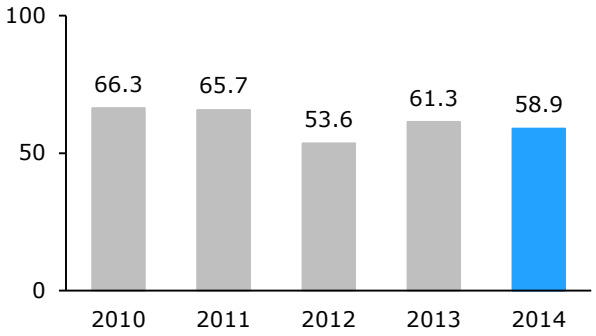
Retail+Hospital Validation Study

Precision (%)

Overall precision index declined by 2.4 percentage points in 2014

Large product forms reached 64.1%, medium 53.5% and small 52.6%

Forms validated in both years, 2013 and 2014, declined by 2.0 percentage points to 61.4% in 2014

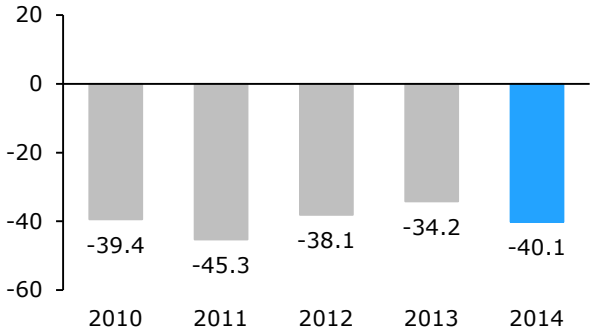


Over/Underestimation (%)

Overall underestimation increased by 5.9 percentage points in 2014

Large product forms were underestimated by 42.5%, medium by 34.5% and small by 35.4%

Underestimation of forms validated in both years, 2013 and 2014, increased by 3.1 percentage points to 36.4% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	57	62	59	53	**60**
Validated market share in unit terms	19%	20%	14%	11%	**13%**
Validated product forms	704	757	632	661	**736**

Actions

Enhance sample design and projection methodology

Review data collection and quality control process

OTC Validation Studies

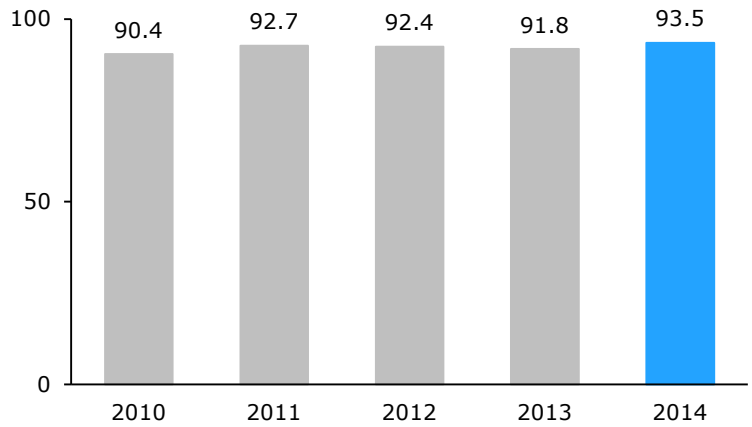
Given the increasing importance of Over-The-Counter (OTC) markets, IMS regularly evaluates our accuracy measures for OTC products that are sub-groupings of the standard national retail or PharmaTrend services. These "sub-validations" are made possible simply by restricting the national standard validation analysis for a clearly defined subset of products. Due to their small prescription share, these products typically follow distinct distribution routes, and their consumption is more customer-driven than that of prescription-bound products. As a general rule, we find that a higher proportion of these products are sold directly from manufacturer to retail outlet so that IMS retail pharmacy samples have a higher impact on our ultimate audit estimates.

Global OTC Validation Results

While in previous years we focused exclusively on IMS sell-in services as sub-offerings from our retail services portfolio, since the 2013 ACTS report we are now including also sell-out services in countries where they have become our standard OTC deliverable. For that purpose, five years of data got re-evaluated and summary statistics in this ACTS report are now a mix of metrics originating from either sell-in or sell-out services.

For the 2014 OTC validation studies, 19 countries provided analyzable results. No validation study was necessary in *Norway* because we collect full census data in this country. There, precision results are assumed to be 100 percent. This makes a total of 20 sets of validation results, of which 17 had uninterrupted five-year results. The overall degree of precision in IMS OTC reports is best described by an aggregated precision index for these 17 countries:

OTC Precision Index (%)



The world-wide OTC precision index improved by 1.7 percentage points, from 91.8% in 2013 to 93.5% in 2014. This outcome represents the best result ever achieved for OTC reports and demonstrates high-level accuracy well above 93%.

Improvement & Deterioration

Country	Improvement	
	Precision 2014 %	Change vs. 2013 %p
Brazil	98.5	+5.0
Bulgaria	100.0	+3.7
Italy	96.9	+5.6
Poland	82.9	+6.4

Country	Deterioration	
	Precision 2014 %	Change vs. 2013 %p
Czech Republic	92.4	-2.7
Greece	88.6	-2.1
Korea	65.4	-3.7

Four countries demonstrated significant improvement of more than two percentage points over 2013. Remarkable growth of 6.4 percentage points is reported for *Poland*. *Italy* improved by 5.6 percentage points, *Brazil* by 5.0 and *Bulgaria* by 3.7 percentage points. Three countries declined by more than two percentage points in 2014, most significantly *Korea* by 3.7 percentage points.

OTC Validation Results by Country

The validation studies mentioned on the subsequent country pages refer to the IMS OTC reports.

Argentina

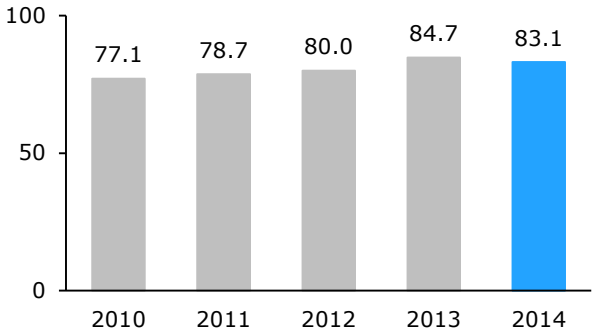
OTC Validation Study

Precision (%)

Overall precision index declined by 1.6 percentage points in 2014

Large product forms reached 84.4%, medium 84.3% and small 76.3%

Forms validated in both years, 2013 and 2014, improved by 1.4 percentage points to 88.0% in 2014

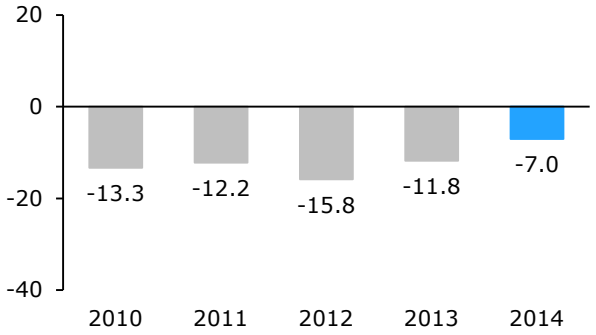


Over/Underestimation (%)

Overall underestimation improved by 4.8 percentage points in 2014

Large product forms were underestimated by 6.4%, medium by 7.5% and small by 9.4%

Underestimation of forms validated in both years, 2013 and 2014, improved by 4.7 percentage points to 7.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	42	40	38	37	**40**
Validated market share in unit terms	66%	51%	48%	46%	**47%**
Validated product forms	460	424	405	360	**431**

Actions

No action required from the statistical point of view

Austria

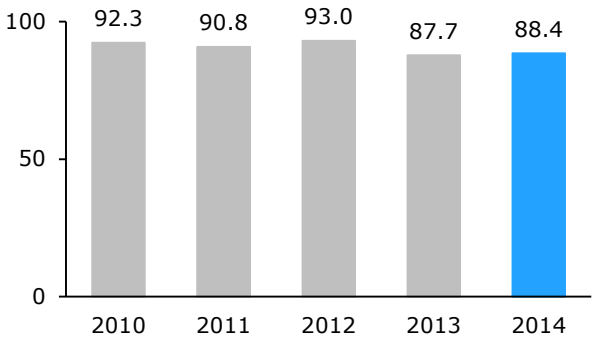
OTC Validation Study

Precision (%)

Overall precision index improved slightly by 0.7 percentage points in 2014

Large product forms reached 88.7%, medium 86.5% and small 91.4%

Forms validated in both years, 2013 and 2014, improved slightly by 0.3 percentage points to 88.5% in 2014

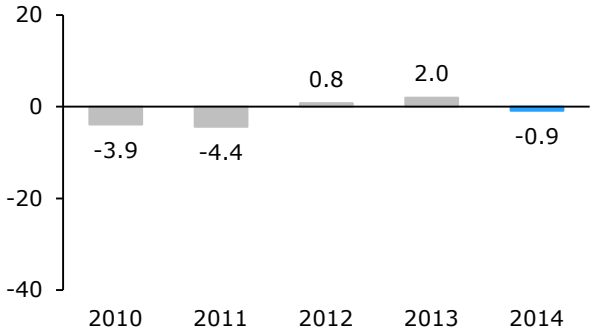


Over/Underestimation (%)

Overall bias turned from 2.0% overestimation in 2013 to 0.9% underestimation in 2014

Large product forms were overestimated by 0.8%, medium and small forms were underestimated by 2.8% and 7.0%, respectively

Bias of forms validated in both years, 2013 and 2014, turned from 1.8% overestimation in 2013 to 1.0% underestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	89	85	84	86	**86**
Validated market share in unit terms	86%	86%	89%	92%	**90%**
Validated product forms	503	481	467	507	**509**

Actions

New projection approach has been implemented

Belgium

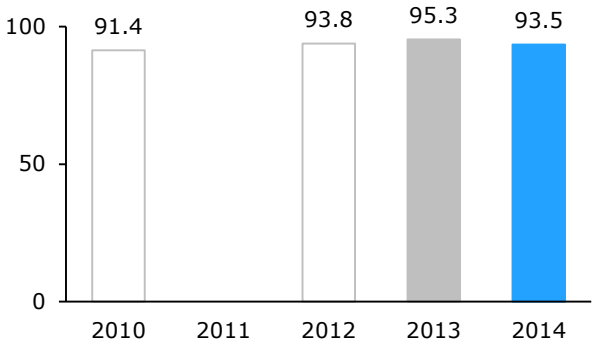
OTC Validation Study

Precision (%)

Overall precision index declined by 1.8 percentage points in 2014

Large product forms reached 94.3%, medium 93.0% and small 92.0%

A reasonable analysis of product forms validated in both years, 2013 and 2014, was not possible due to low availability of forms in this basket

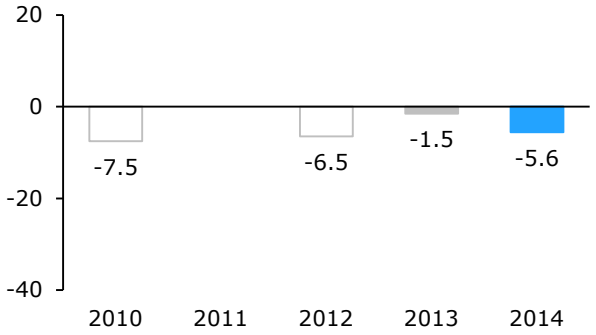


Over/Underestimation (%)

Overall underestimation increased by 4.1 percentage points in 2014

Large product forms were underestimated by 6.4%, medium by 3.2% and small by 4.5%

A reasonable analysis of product forms validated in both years, 2013 and 2014, was not possible due to low availability of forms in this basket



Participation

	2010	2011	2012	2013	2014
Participating companies	9		4	12	**14**
Validated market share in unit terms	9%		4%	12%	**28%**
Validated product forms	70		48	93	**131**

Actions

Review projection level

Brazil

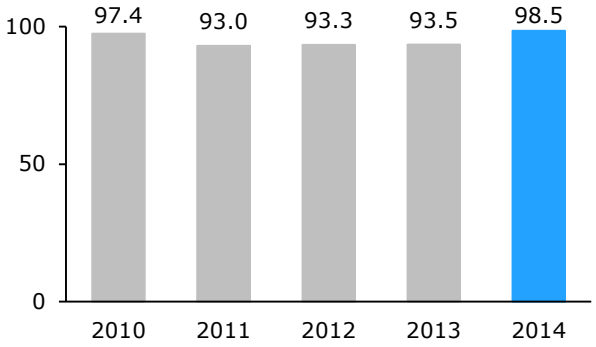
OTC Validation Study

Precision (%)

Overall precision index improved by 5.0 percentage points in 2014

Large product forms reached a perfect 100%, medium 95.7% and small 99.2%

Forms validated in both years, 2013 and 2014, improved by 1.9 percentage points to 98.2% in 2014

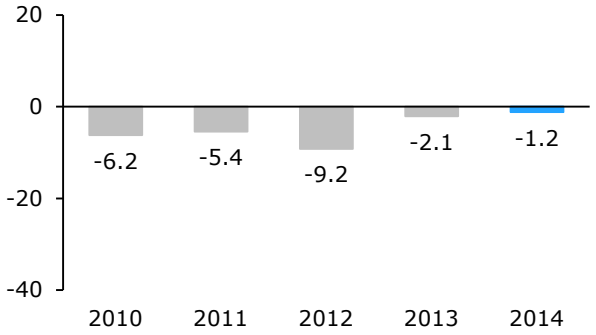


Over/Underestimation (%)

Overall underestimation improved by 0.9 percentage points in 2014

Large product forms were underestimated by 0.4%, medium by 3.3% and small by 0.7%

Underestimation of forms validated in both years, 2013 and 2014, improved by 0.5 percentage points to 1.1% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	13	21	19	26	**16**
Validated market share in unit terms	11%	13%	17%	20%	**16%**
Validated product forms	190	243	319	432	**263**

Actions

No action required from the statistical point of view

Bulgaria

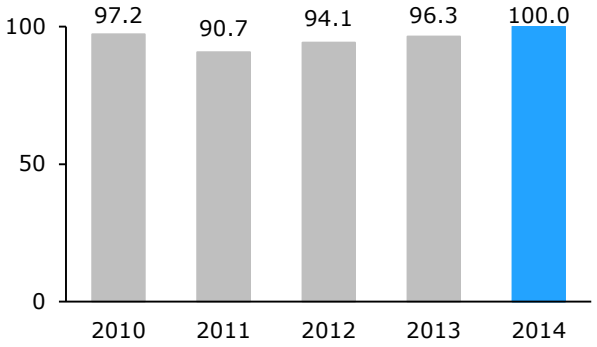
OTC Validation Study

Precision (%)

Overall precision index improved by 3.7 percentage points to a perfect 100% in 2014

All product size classes reached 100%

Forms validated in both years, 2013 and 2014, improved by 3.1 percentage points to 100% in 2014

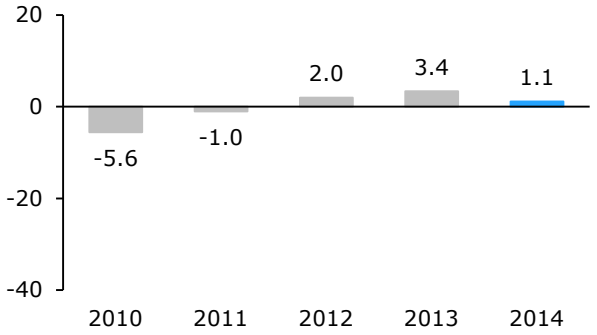


Over/Underestimation (%)

Overall overestimation improved by 2.3 percentage points in 2014

Large product forms were overestimated by 1.2%, medium forms had no bias at all, and small forms were overestimated by 3.4%

Overestimation of forms validated in both years, 2013 and 2014, improved by 1.2 percentage points to 1.3% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	32	25	29	31	**24**
Validated market share in unit terms	57%	43%	54%	56%	**44%**
Validated product forms	160	120	156	155	**151**

Actions

No action required from the statistical point of view

Canada

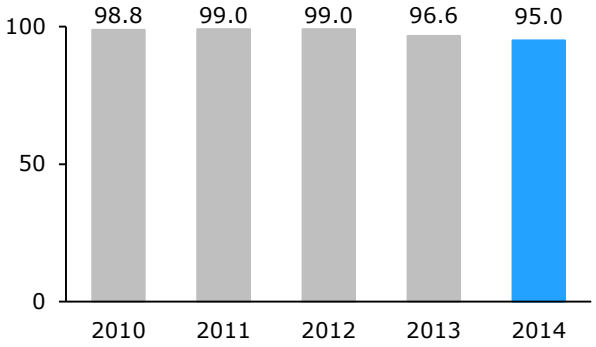
OTC Validation Study

Precision (%)

Overall precision index declined by 1.6 percentage points in 2014

Large product forms reached 93.0%, medium 97.8% and small 95.8%

Forms validated in both years, 2013 and 2014, declined by 1.9 percentage points to 94.9% in 2014



Over/Underestimation (%)

Overall overestimation slightly increased by 0.2 percentage points in 2014

Large product forms were overestimated by 0.7%, medium by 1.7% and small by 1.9%

Overestimation of forms validated in both years, 2013 and 2014, slightly increased by 0.3 percentage points to 1.1% in 2014

Participation

	2010	2011	2012	2013	2014
Participating companies	47	50	51	53	**56**
Validated market share in unit terms	95%	95%	95%	95%	**95%**
Validated product forms	994	987	911	909	**874**

Actions

No action required from the statistical point of view

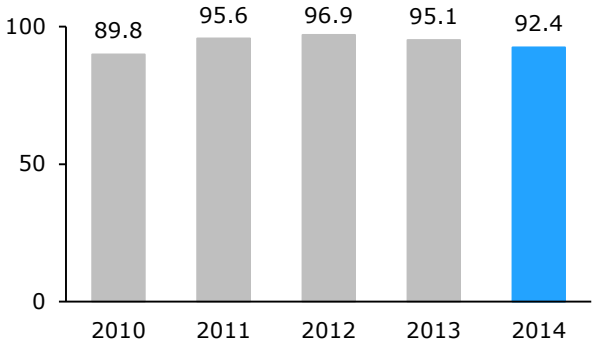
Czech Republic

Precision (%)

Overall precision index declined by 2.7 percentage points in 2014

Large product forms reached 95.1%, medium 89.6% and small 88.9%

Forms validated in both years, 2013 and 2014, improved by 0.5 percentage points to 96.0% in 2014

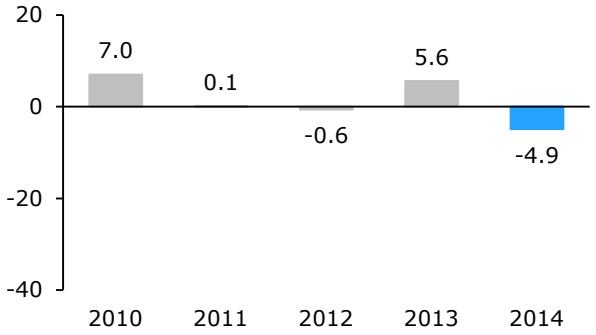


Over/Underestimation (%)

Overall bias turned from 5.6% overestimation in 2013 to 4.9% underestimation in 2014

Large product forms were underestimated by 5.8%, medium by 1.8% and small by 5.9%

Bias of forms validated in both years, 2013 and 2014, turned from 5.7% overestimation in 2013 to 5.7% underestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	20	19	21	15	**20**
Validated market share in unit terms	58%	48%	52%	51%	**43%**
Validated product forms	212	186	217	213	**211**

Actions

Enhance input quality

Enhance projection methodology

Finland

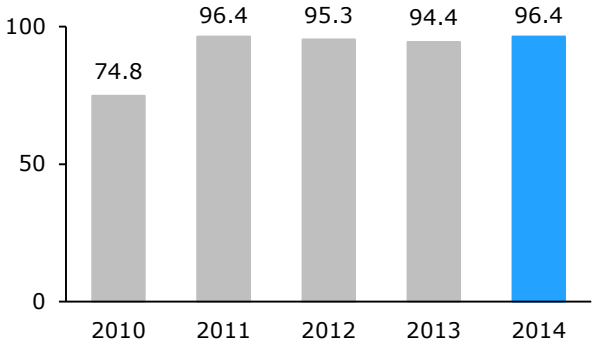
OTC Validation Study

Precision (%)

Overall precision index improved by 2.0 percentage points in 2014

Large product forms reached 98.2%, medium 97.2% and small 88.7%

Forms validated in both years, 2013 and 2014, improved by 1.7 percentage points to 96.5% in 2014

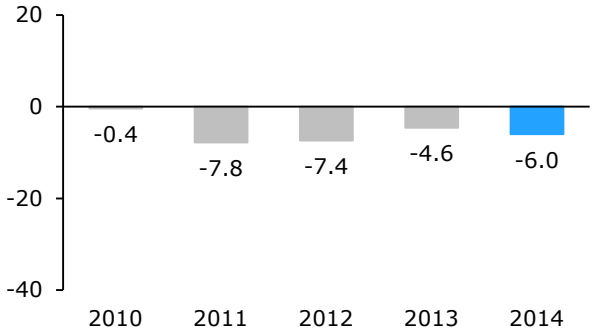


Over/Underestimation (%)

Overall underestimation increased by 1.4 percentage points in 2014

Large product forms were underestimated by 5.0%, medium by 7.1% and small by 10.4%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.6 percentage points to 6.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	93	53	52	52	**52**
Validated market share in unit terms	89%	85%	89%	92%	**94%**
Validated product forms	916	440	455	458	**456**

Actions

Revise projection methodology

Germany

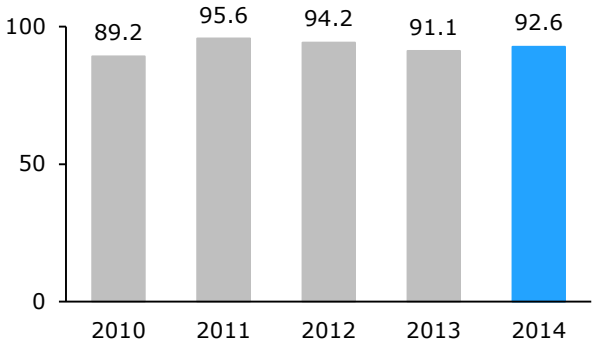
OTC Validation Study

Precision (%)

Overall precision index improved by 1.5 percentage points in 2014

Large product forms reached 95.1%, medium 91.3% and small 86.6%

Forms validated in both years, 2013 and 2014, slightly declined by 0.4 percentage points to 93.3% in 2014

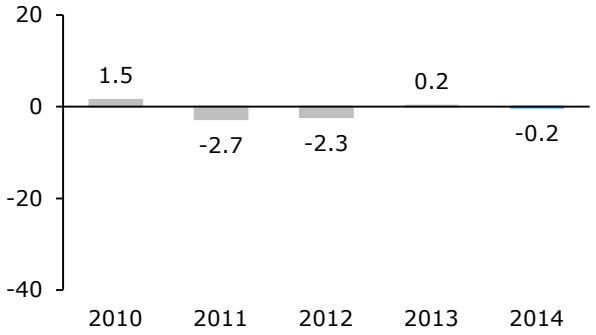


Over/Underestimation (%)

Overall bias turned from 0.2% overestimation in 2013 to 0.2% underestimation in 2014

Large product forms were underestimated by 0.3%, medium forms were overestimated by 0.7% and small forms were underestimated by 3.9%

Bias of forms validated in both years, 2013 and 2014, turned from 0.2% underestimation in 2013 to 0.1% overestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	28	25	30	23	**23**
Validated market share in unit terms	32%	26%	32%	33%	**33%**
Validated product forms	644	595	710	684	**690**

Actions

No action required from the statistical point of view

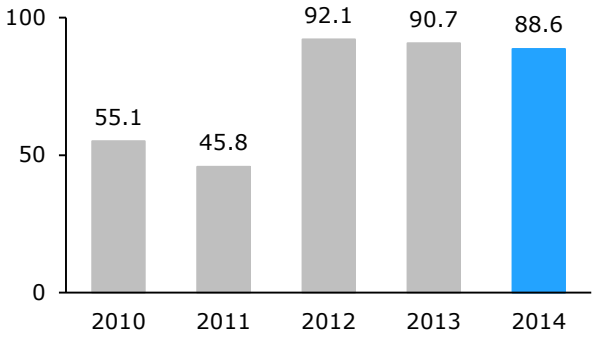
Greece

Precision (%)

Overall precision index declined by 2.1 percentage points in 2014

Medium product forms reached 90.6% and small 85.2%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, declined by 2.6 percentage points to 88.0% in 2014

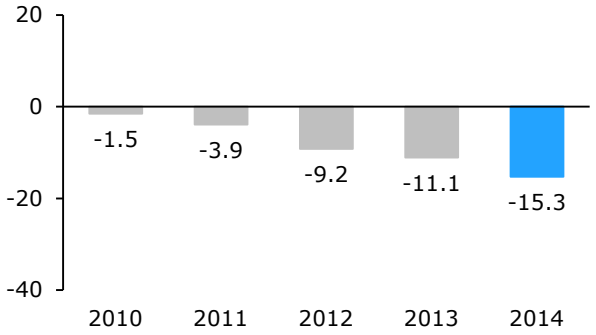


Over/Underestimation (%)

Overall underestimation increased by 4.2 percentage points in 2014

Medium product forms were underestimated by 15.8% and small by 8.1%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, increased by 5.0 percentage points to 12.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	45	34	31	27	**30**
Validated market share in unit terms	66%	56%	52%	47%	**41%**
Validated product forms	171	123	101	75	**80**

Actions

Implement enhanced data collection technology

Hungary

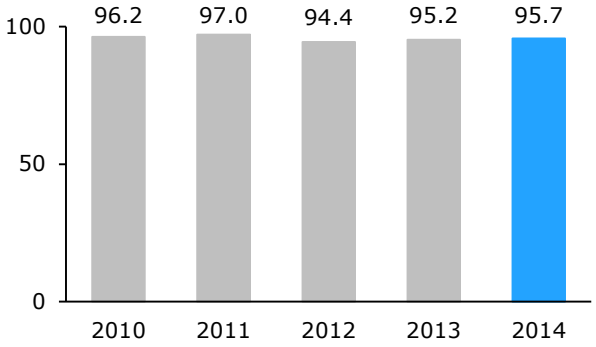
OTC Validation Study

Precision (%)

Overall precision index slightly improved by 0.5 percentage points in 2014

Large product forms reached 96.9%, medium 94.7% and small 94.0%

Forms validated in both years, 2013 and 2014, improved by 1.0 percentage point to 97.3% in 2014

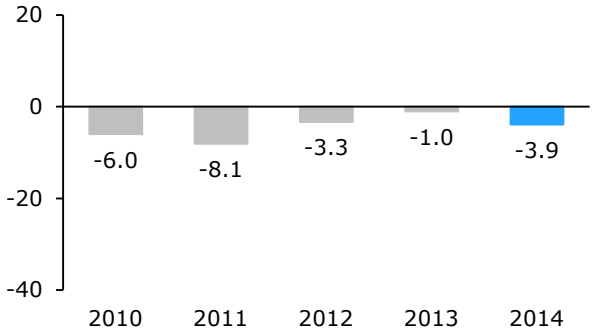


Over/Underestimation (%)

Overall underestimation increased by 2.9 percentage points in 2014

Large product forms were underestimated by 4.5%, medium by 2.5% and small by 4.2%

Underestimation of forms validated in both years, 2013 and 2014, increased by 3.7 percentage points to 4.0% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	41	41	41	42	**40**
Validated market share in unit terms	75%	71%	67%	69%	**67%**
Validated product forms	269	270	262	308	**315**

Actions

Enhance projection methodology

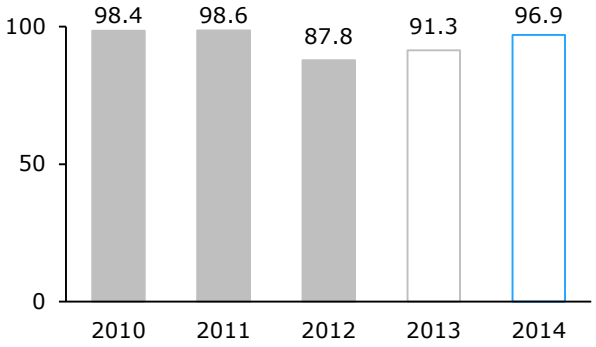
Italy

Precision (%)

Overall precision index improved by 5.6 percentage points in 2014

Due to small availability of product forms, a reasonable breakdown into sales volume groups was not possible

Forms validated in both years, 2013 and 2014, remained unchanged at a perfect 100% in 2014

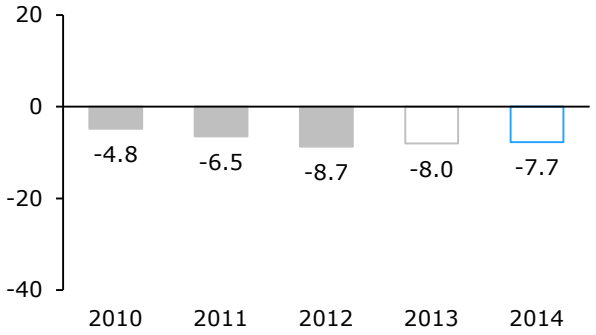


Over/Underestimation (%)

Overall underestimation slightly improved by 0.3 percentage points in 2014

Due to small availability of product forms, a reasonable breakdown into sales volume groups was not possible

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.0 percentage point to 7.8% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	13	13	16	14	**12**
Validated market share in unit terms	10%	10%	22%	9%	**8%**
Validated product forms	61	67	131	76	**64**

Actions

Increase sample and upgrade projection for 2016

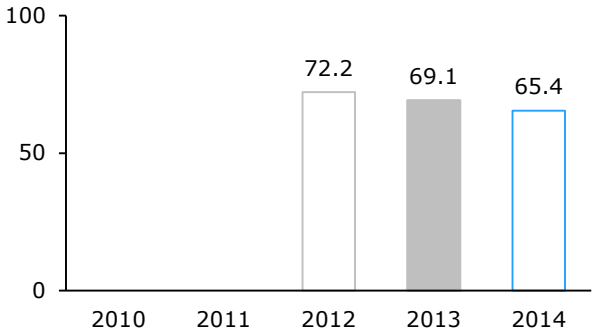
Korea

Precision (%)

Overall precision index declined by 3.7 percentage points in 2014

Medium product forms reached 68.5% and small 60.2%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, improved by 4.5 percentage points to 77.4% in 2014

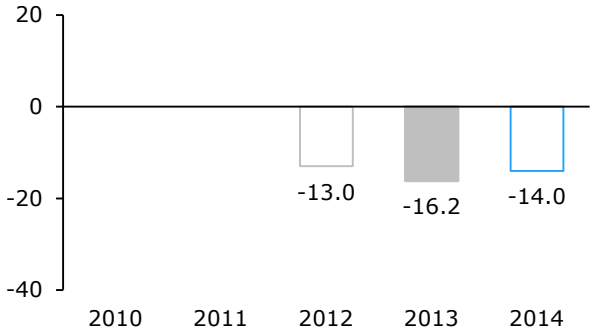


Over/Underestimation (%)

Overall underestimation improved by 2.2 percentage points in 2014

Medium product forms were underestimated by 12.6% and small by 21.2%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, improved by 6.5 percentage points to 7.4% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies			11	8	**11**
Validated market share in unit terms			6%	17%	**5%**
Validated product forms			144	204	**195**

Actions

Improve data collection and coding quality

Advance quality control mechanisms and input validity checks

Mexico

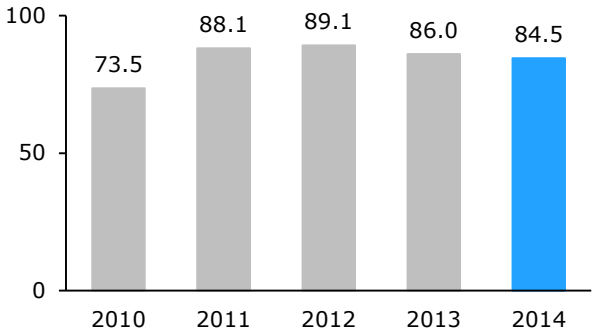
OTC Validation Study

Precision (%)

Overall precision index declined by 1.5 percentage points in 2014

Large product forms reached 83.7%, medium 89.2% and small 77.6%

Forms validated in both years, 2013 and 2014, declined by 7.0 percentage points to 83.1% in 2014

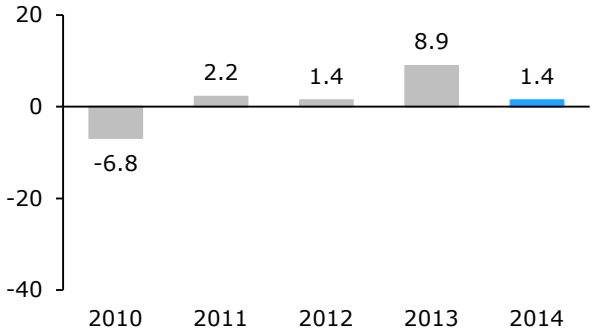


Over/Underestimation (%)

Overall overestimation improved by 7.5 percentage points in 2014

Large product forms were underestimated by 0.1%, medium forms were overestimated by 4.9% and small forms were underestimated by 0.9%

Overestimation of forms validated in both years, 2013 and 2014, improved by 3.3 percentage points to 1.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	22	19	13	12	**10**
Validated market share in unit terms	30%	28%	36%	27%	**16%**
Validated product forms	304	286	352	254	**175**

Actions

Review internal quality assurance process

Poland

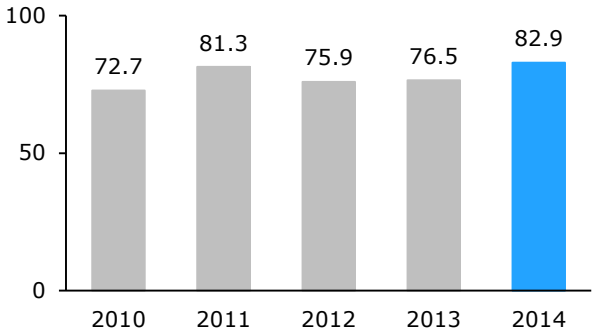
OTC Validation Study

Precision (%)

Overall precision index improved by 6.4 percentage points in 2014

Large product forms reached 89.0%, medium 76.2% and small 76.1%

Forms validated in both years, 2013 and 2014, improved by 1.8 percentage points to 78.0% in 2014

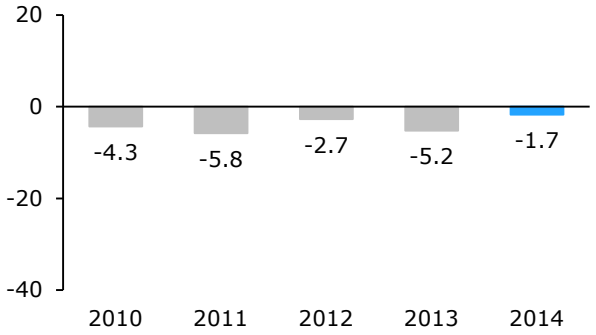


Over/Underestimation (%)

Overall underestimation improved by 3.5 percentage points in 2014

Large product forms were overestimated by 0.4%, medium and small forms were underestimated by 5.1% and 6.0%, respectively

Underestimation of forms validated in both years, 2013 and 2014, improved by 5.0 percentage points to 0.0% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	35	47	53	40	**45**
Validated market share in unit terms	14%	42%	27%	21%	**31%**
Validated product forms	150	331	289	231	**325**

Actions

Enhance projection methodology

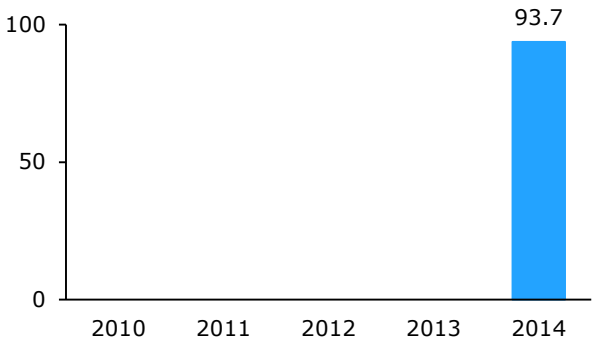
Slovak Republic

OTC Validation Study

Precision (%)

Overall precision index achieved 93.7% in the first validation study in 2014

Large product forms reached 97.3%, medium 91.8% and small 85.7%



Over/Underestimation (%)

Overall bias showed 4.0% underestimation in 2014

Large product forms were underestimated by 4.1%, medium by 4.1% and small by 1.0%

Participation

	2010	2011	2012	2013	2014
Participating companies					**9**
Validated market share in unit terms					**31%**
Validated product forms					**107**

Actions

No action required from the statistical point of view

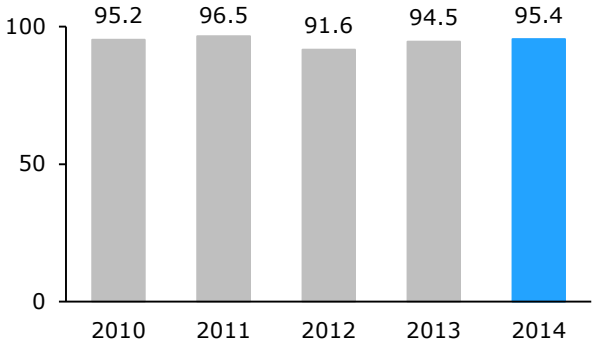
Spain

Precision (%)

Overall precision index improved by 0.9 percentage points in 2014

Medium product forms reached a perfect 100% and small forms 92.7%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, improved by 4.1 percentage points to 100% in 2014

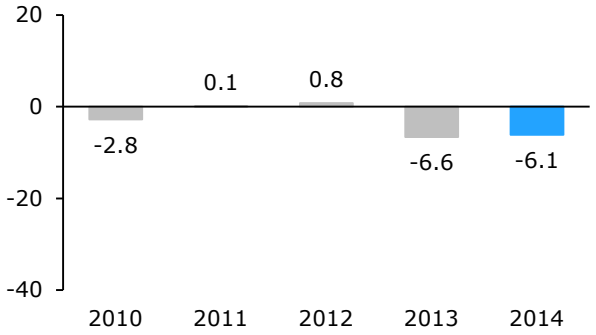


Over/Underestimation (%)

Overall underestimation slightly improved by 0.5 percentage points in 2014

Medium product forms were underestimated by 5.9% and small by 8.3%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, increased by 2.3 percentage points to 7.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	11	16	10	8	**11**
Validated market share in unit terms	10%	27%	23%	15%	**26%**
Validated product forms	42	77	69	55	**82**

Actions

Increase sample and upgrade projection for 2016

Switzerland

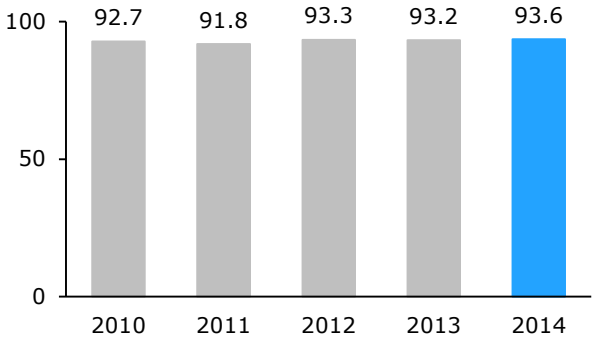
OTC Validation Study

Precision (%)

Overall precision index slightly improved by 0.4 percentage points in 2014

Large product forms reached 95.4%, medium 91.0% and small 92.9%

Forms validated in both years, 2013 and 2014, slightly improved by 0.2 percentage points to 94.0% in 2014

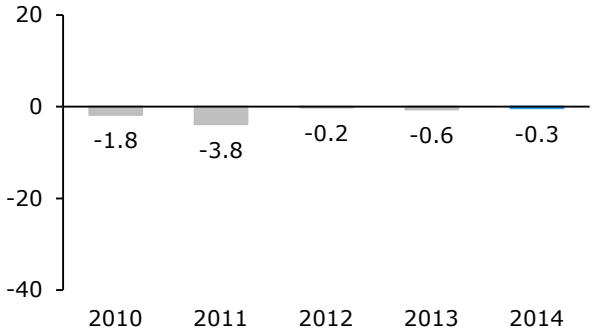


Over/Underestimation (%)

Overall underestimation slightly improved by 0.3 percentage points in 2014

Large product forms were underestimated by 0.7%, medium forms were overestimated by 0.6% and small by 0.4%

Underestimation of forms validated in both years, 2013 and 2014, improved by 0.6 percentage points to 0.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	138	134	128	124	**127**
Validated market share in unit terms	82%	82%	83%	83%	**83%**
Validated product forms	1,257	1,253	1,208	1,236	**1,234**

Actions

No action required from the statistical point of view

Venezuela

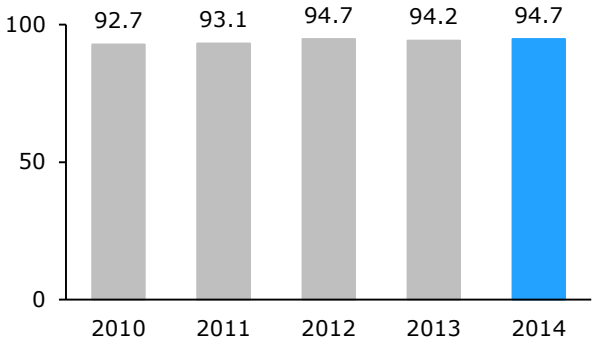
OTC Validation Study

Precision (%)

Overall precision index slightly improved by 0.5 percentage points in 2014

Large product forms reached 93.8%, medium 96.9% and small 93.3%

Forms validated in both years, 2013 and 2014, improved by 2.8 percentage points to 93.3% in 2014



Over/Underestimation (%)

Overall bias turned from 1.3% underestimation in 2013 to 2.2% overestimation in 2014

Large product forms were overestimated by 2.5%, medium forms were underestimated by 0.8% and small forms were overestimated by 2.5%

Bias of forms validated in both years, 2013 and 2014, turned from 1.5% underestimation in 2013 to 2.9% overestimation in 2014

Participation

	2010	2011	2012	2013	2014
Participating companies	54	55	34	37	**25**
Validated market share in unit terms	62%	58%	39%	55%	**34%**
Validated product forms	496	470	278	376	**220**

Actions

Review internal quality assurance process

PharmaTrend Validation Studies

Unlike OTC audits for which only direct sales information is taken from pharmacy panels, *PharmaTrend* studies (PTR) are derived from a panel of computerized pharmacies that report not only on sales, but also on purchases and stock inventory. These panels are used in multiple ways:

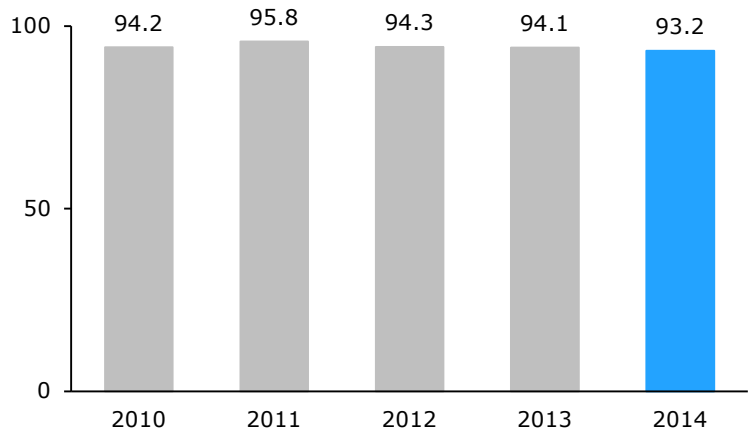
- Providing direct sales information to national and regional pharmaceutical reports
- Monitoring of new product launches weekly
- Tracking patient care and personal care products
- Estimating OTC *vs*. prescription shares
- Conducting stock and pipeline studies
- Performing sell-out studies

In most countries, we are in a position to validate PTR estimates against real data provided by IMS customers in the standard annual validation process. Thus we are consistently using the same underlying methodology, and the results are comparable. All ethical and OTC pharmaceutical items, excluding patient care and personal care products, are subject to this validation. As a logical future enhancement to the service, we are looking into validating the excluded product groups through a separate initiative.

Overall PharmaTrend Validation Results

For the 2014 PharmaTrend validation studies, 11 countries provided analyzable data, of which 9 had uninterrupted 5-year results. We must exclude the *Netherlands* and the *United Kingdom* because the data are incompatible with the national retail audit. The overall degree of precision in IMS PharmaTrend reports is best described by an aggregated precision index for these nine countries:

PharmaTrend Precision Index (%)



The 2014 index showed decline of 0.9 percentage points over 2013, ending at 93.2% precision for PharmaTrend reports on average.

Improvement & Deterioration

Ten out of the eleven reports achieved precision results exceeding 90% considerably in 2014. Two countries turned out with significant decline (more than two percentage points) over 2013. The biggest decline in precision was seen for *Spain* that lost 4.7 percentage points, followed by *Poland* that lost 2.3 percentage points. No country showed significant improvement of more than two percentage points.

Country	Deterioration	
	Precision 2014 %	Change vs. 2013 %p
Poland	88.9	-2.3
Spain	92.8	-4.7

PharmaTrend Validation Results by Country

The validation studies mentioned on the subsequent country pages refer to the IMS PharmaTrend reports.

Austria

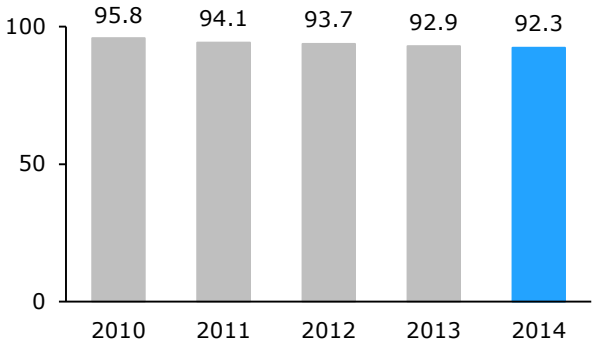
PharmaTrend Validation Study

Precision (%)

Overall precision index declined slightly by 0.6 percentage points in 2014

Large product forms reached 93.8%, medium 93.2% and small 85.7%

Forms validated in both years, 2013 and 2014, declined slightly by 0.7 percentage points to 92.4% in 2014

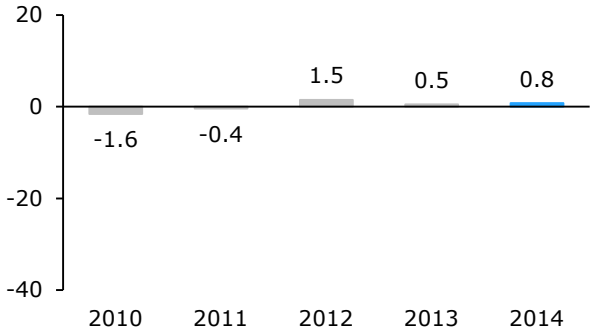


Over/Underestimation (%)

Overall overestimation increased slightly by 0.3 percentage points in 2014

Large and medium product forms were overestimated by 1.6% and 0.4%, respectively, small forms were underestimated by 1.4%

Overestimation of forms validated in both years, 2013 and 2014, increased slightly by 0.4 percentage points to 0.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	179	180	210	209	**210**
Validated market share in unit terms	76%	78%	71%	72%	**72%**
Validated product forms	1,933	1,939	2,528	2,754	**2,795**

Actions

Review quality control metrics

Belgium

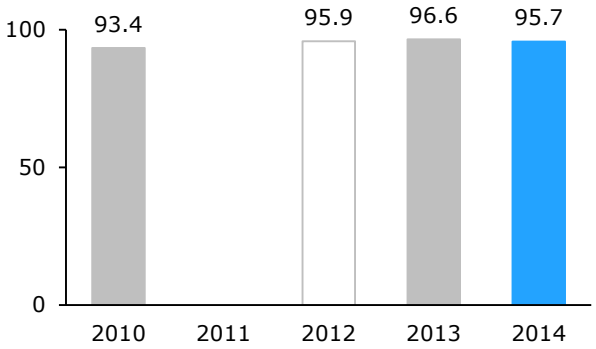
PharmaTrend Validation Study

Precision (%)

Overall precision index slightly declined by 0.9 percentage points in 2014

Large product forms reached 97.3%, medium 94.6% and small 92.4%

Forms validated in both years, 2013 and 2014, declined slightly by 0.5 percentage points to 94.2% in 2014

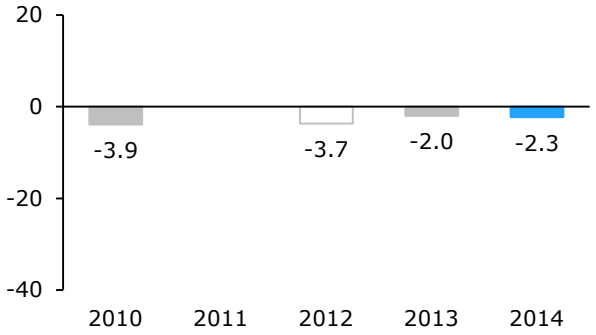


Over/Underestimation (%)

Overall underestimation increased slightly by 0.3 percentage points in 2014

Large product forms were underestimated by 2.7%, medium by 1.5% and small by 2.5%

Bias of forms validated in both years, 2013 and 2014, turned from 2.1% underestimation in 2013 to 1.0% overestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	13		8	17	**21**
Validated market share in unit terms	15%		8%	21%	**25%**
Validated product forms	414		203	590	**628**

Actions

No action required from the statistical point of view

Czech Republic

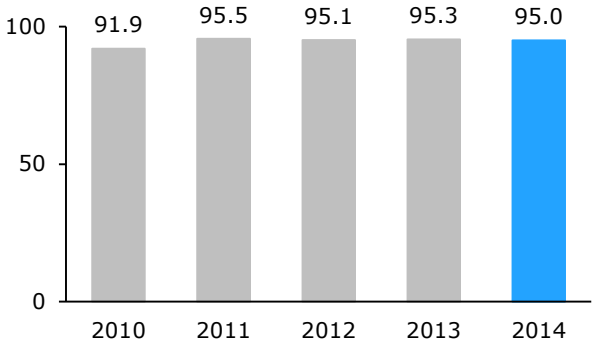
PharmaTrend Validation Study

Precision (%)

Overall precision index slightly declined by 0.3 percentage points in 2014

Large product forms reached 98.8%, medium 94.1% and small 84.3%

Forms validated in both years, 2013 and 2014, declined by 0.3 percentage points to 95.9% in 2014

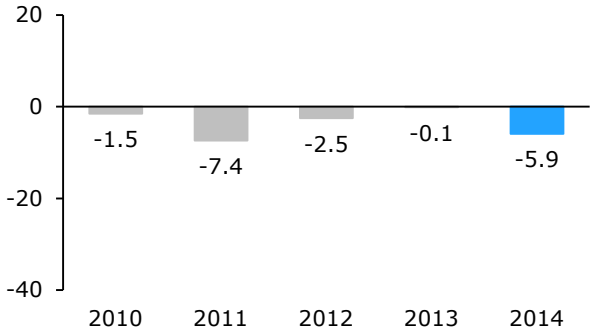


Over/Underestimation (%)

Overall underestimation increased by 5.8 percentage points in 2014

Large product forms were underestimated by 5.9%, medium by 4.9% and small forms by 9.1%

Bias of forms validated in both years, 2013 and 2014, turned from 0.5% overestimation in 2013 to 6.0% underestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	26	24	29	21	**26**
Validated market share in unit terms	44%	37%	33%	30%	**29%**
Validated product forms	794	718	828	857	**843**

Actions

Enhance input quality

Enhance projection methodology

Finland

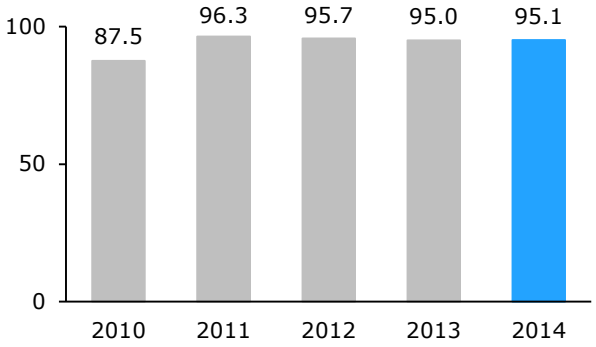
PharmaTrend Validation Study

Precision (%)

Overall precision index improved slightly by 0.1 percentage points in 2014

Large product forms reached 97.7%, medium 95.8% and small 84.9%

Forms validated in both years, 2013 and 2014, improved slightly by 0.4 percentage points to 95.5% in 2014

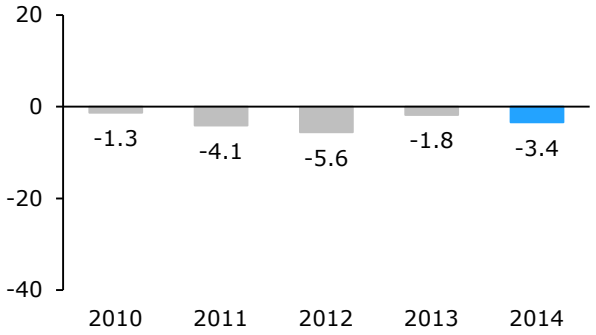


Over/Underestimation (%)

Overall underestimation increased by 1.6 percentage points in 2014

Large product forms were underestimated by 2.7%, medium by 4.0% and small by 5.3%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.8 percentage points to 3.6% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	152	120	120	126	**127**
Validated market share in unit terms	90%	84%	76%	76%	**75%**
Validated product forms	2,706	1,951	1,933	1,969	**1,962**

Actions

Monitor projection level

Germany

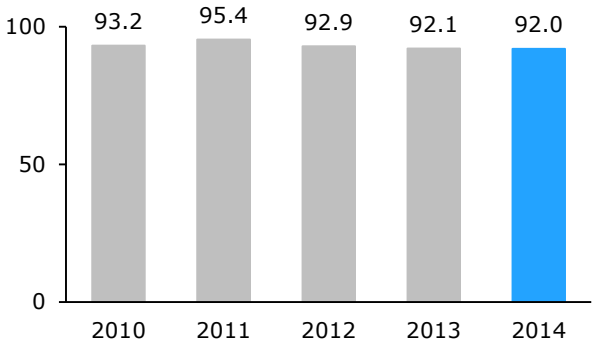
PharmaTrend Validation Study

Precision (%)

Overall precision index declined marginally by 0.1 percentage points in 2014

Large product forms reached 94.5%, medium 92.3% and small 83.2%

Forms validated in both years, 2013 and 2014, declined slightly by 0.7 percentage points to 92.7% in 2014

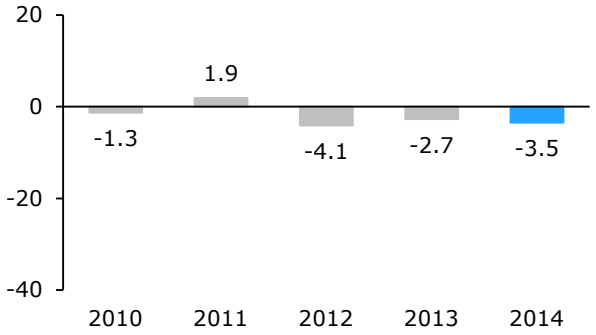


Over/Underestimation (%)

Overall underestimation increased by 0.8 percentage points in 2014

Large product forms were underestimated by 3.9%, medium by 2.7% and small by 3.2%

Underestimation of forms validated in both years, 2013 and 2014, increased by 0.5 percentage points to 3.8% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	42	39	48	39	**41**
Validated market share in unit terms	30%	29%	31%	31%	**31%**
Validated product forms	3,482	3,630	3,831	3,489	**3,554**

Actions

No action required from the statistical point of view

Hungary

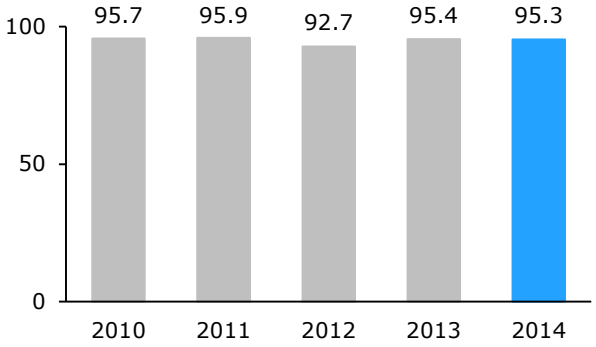
PharmaTrend Validation Study

Precision (%)

Overall precision index declined negligibly by 0.1 percentage points in 2014

Large product forms reached 97.4%, medium 96.6% and small 85.6%

Forms validated in both years, 2013 and 2014, improved by 0.5 percentage points to 96.7% in 2014

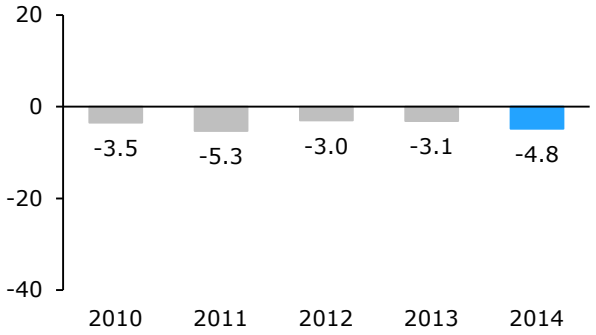


Over/Underestimation (%)

Overall underestimation increased by 1.7 percentage points in 2014

Large product forms were underestimated by 5.5%, medium by 3.4% and small by 5.2%

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.8 percentage points to 4.7% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	85	86	79	80	**82**
Validated market share in unit terms	72%	70%	44%	40%	**34%**
Validated product forms	1,284	1,381	1,390	1,376	**1,403**

Actions

Enhance projection methodology

Italy

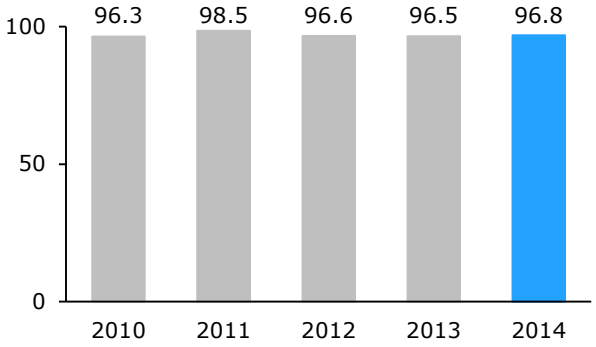
PharmaTrend Validation Study

Precision (%)

Overall precision index slightly improved by 0.3 percentage points in 2014

Large product forms reached 96.8%, medium 98.1% and small 94.4%

Forms validated in both years, 2013 and 2014, improved by 2.1 percentage points to 97.8% in 2014

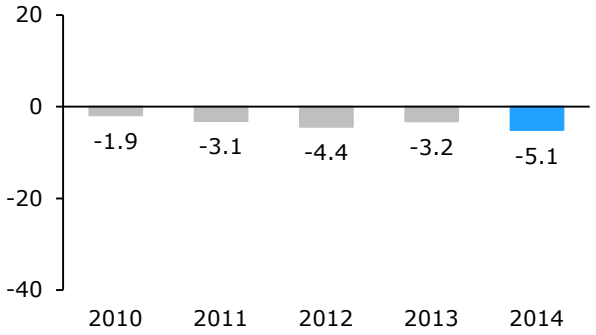


Over/Underestimation (%)

Overall underestimation increased by 1.9 percentage points in 2014

Large product forms were underestimated by 4.9%, medium by 5.1% and small by 6.1%

Underestimation of forms validated in both years, 2013 and 2014, increased by 2.7 percentage points to 5.1% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	32	27	29	31	**22**
Validated market share in unit terms	27%	33%	29%	25%	**18%**
Validated product forms	808	979	1,057	971	**673**

Actions

Increase sample and upgrade projection for 2016

Poland

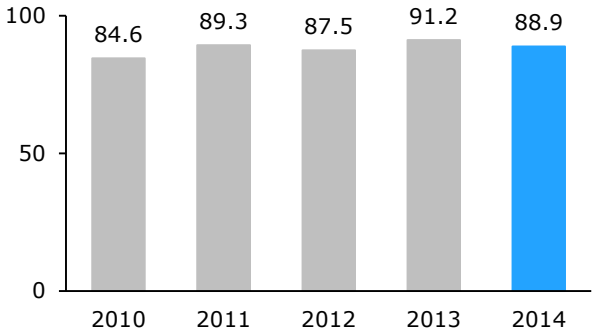
PharmaTrend Validation Study

Precision (%)

Overall precision index declined by 2.3 percentage points in 2014

Large product forms reached 91.1%, medium 86.7% and small 86.1%

Forms validated in both years, 2013 and 2014, declined by 3.0 percentage points to 88.0% in 2014

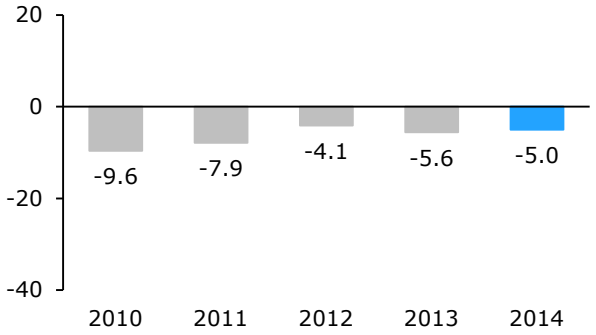


Over/Underestimation (%)

Overall underestimation improved slightly by 0.6 percentage points in 2014

Large product forms were underestimated by 3.7%, medium by 6.1% and small by 7.0%

Underestimation of forms validated in both years, 2013 and 2014, improved slightly by 0.5 percentage points to 4.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	60	78	82	69	**71**
Validated market share in unit terms	26%	45%	26%	20%	**22%**
Validated product forms	948	1,407	1,185	994	**1,135**

Actions

Enhance projection methodology

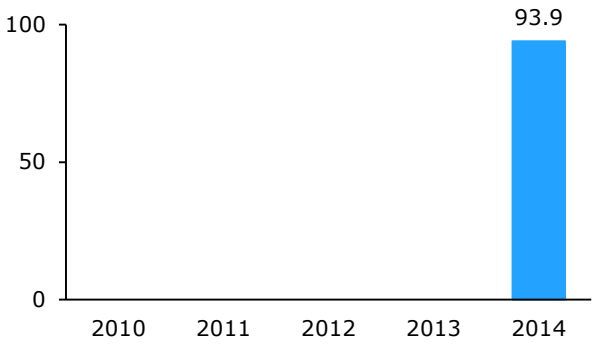
Slovak Republic

PharmaTrend Validation Study

Precision (%)

Overall precision index achieved 93.9% in the first validation study in 2014

Large product forms reached 98.1%, medium 91.8% and small 84.1%



Over/Underestimation (%)

Overall bias showed 2.8% underestimation in 2014

Large product forms were underestimated by 3.6%, medium by 0.1% and small by 2.5%

Participation

	2010	2011	2012	2013	2014
Participating companies					**17**
Validated market share in unit terms					**15%**
Validated product forms					**386**

Actions

No action required from the statistical point of view

Spain

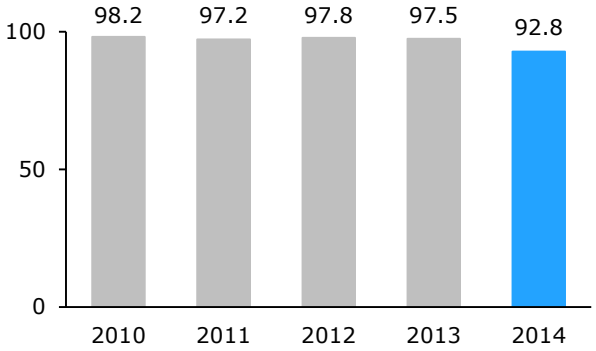
PharmaTrend Validation Study

Precision (%)

Overall precision index declined by 4.7 percentage points in 2014

Large product forms reached 92.6%, medium 94.4% and small 90.3%

Forms validated in both years, 2013 and 2014, declined by 2.6 percentage points to 94.6% in 2014

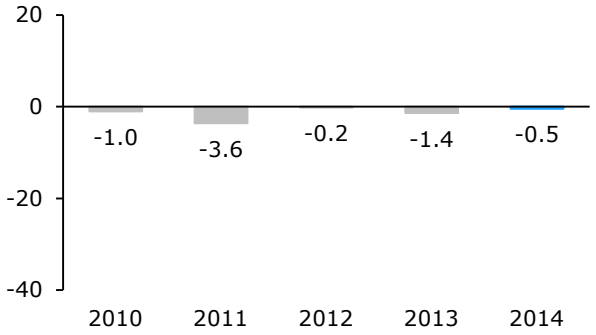


Over/Underestimation (%)

Overall underestimation improved by 0.9 percentage points in 2014

Large product forms were overestimated by 0.6%, medium forms were underestimated by 1.7% and small by 3.8%

Underestimation of forms validated in both years, 2013 and 2014, slightly improved by 0.3 percentage points to 1.4% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	24	28	24	15	**17**
Validated market share in unit terms	18%	22%	13%	11%	**13%**
Validated product forms	513	701	670	536	**616**

Actions

Increase sample and upgrade projection for 2016

Switzerland

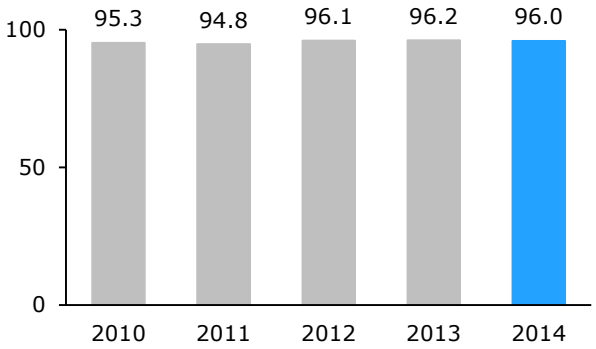
PharmaTrend Validation Study

Precision (%)

Overall precision index slightly declined by 0.2 percentage points in 2014

Large product forms reached 96.5%, medium and small forms reached 95.4% both

Forms validated in both years, 2013 and 2014, remained unchanged at 96.3% in 2014

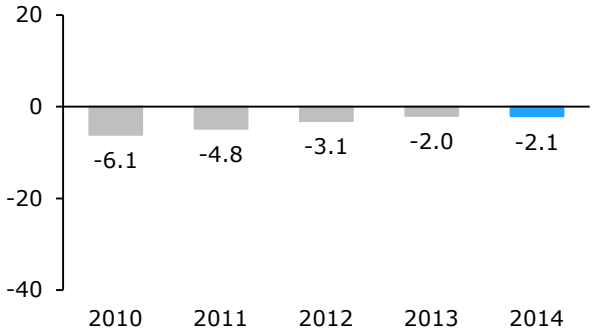


Over/Underestimation (%)

Overall underestimation increased marginally by 0.1 percentage points in 2014

Large product forms were underestimated by 2.3%, medium by 1.7% and small by 2.2%

Underestimation of forms validated in both years, 2013 and 2014, increased marginally by 0.1 percentage points to 2.1% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	210	206	191	188	**190**
Validated market share in unit terms	67%	66%	87%	88%	**89%**
Validated product forms	3,184	3,177	3,074	3,163	**3,226**

Actions

No action required from the statistical point of view

Hospital Validation Studies

IMS offers two types of hospital audits: purchase-based and consumption-based audits. Although both types target the national hospital market segment, the data collection methodology may produce values that are not directly comparable with the industry's internal sales figures. Several factors lead to this incompatibility, and thus to a failure of the traditional validation process. Examples are:

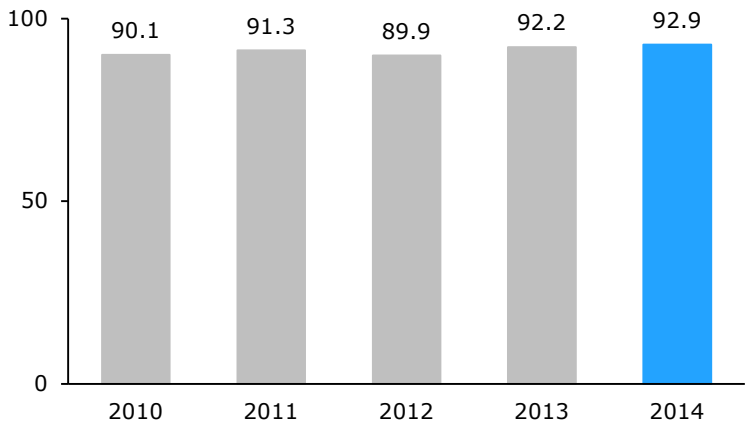
- Indirect sales through secondary distribution entities (wholesalers, subdistributors etc.) are not separable.
- Consumption often does not give an indication of the original pack dispensation.
- Generic products cannot be assigned to individual manufacturers.

Hospital consumption audits measure deliveries from hospital pharmacies to hospital departments. These measures are not fully compatible with manufacturer sales into pharmacies. Large gaps or inconsistencies in the points of measurement between the two tracking systems result in lower precision values. Therefore, when interpreting the validation results, we less focus on their absolute value, but more on changes from one year to another.

Global Hospital Validation Results

For the 2014 validation studies, 24 countries provided analyzable results. No validation study was necessary in *Denmark*, *Finland*, *New Zealand*, *Norway* and *Sweden* because we collect full census data in these countries and we suppose a 100 percent precision in these five markets. This makes a total of 29 sets of validation results, of which 22 had uninterrupted five-year results. The overall degree of precision in IMS hospital reports is best described by an aggregated precision index for these 22 countries:

Hospital Precision Index (%)



The world-wide precision index of hospital reports improved by 0.7 percentage points, from 92.2% in 2013 to 92.9% in 2014. This result represents the second-best achievement of the last five years and stabilizes hospital reports well above the 90% margin.

Improvement & Deterioration

Country	Improvement	
	Precision 2014 %	Change vs. 2013 %p
Bulgaria	97.1	+6.7
Germany	87.0	+6.0
Serbia	97.0	+6.9
USA	97.3	+4.1

Country	Deterioration	
	Precision 2014 %	Change vs. 2013 %p
Belgium	83.4	-3.9
Italy	85.6	-2.2
Korea	57.5	-4.2
Philippines	94.9	-5.1
Vietnam	58.9	-2.4

Four countries showed significant improvement of more than 2 percentage points over 2013. The biggest gain of 6.9 percentage points is reported for *Serbia*, closely followed by *Bulgaria* with 6.7 percentage points. *Germany* improved its previous year's precision value by 6.0 and the *United States* by 4.1 percentage points. Five countries declined by more than 2 percentage points, most significantly *the Philippines* with a 5.1 percentage point loss. The remaining four countries were facing precision declines between 2.2 and 4.2 percentage points.

Hospital Validation Results by Country

From the 24 countries with analyzable results, 12 were validated jointly with their equivalent retail audits (*Croatia, Czech Republic, Hungary, Japan, Poland, Russia, Serbia, Slovak Republic, Slovenia, Switzerland, USA and Vietnam*). The detailed results for these countries can be found in the retail section of this Accuracy part. The remaining 12 countries with pure hospital validation results are presented on the subsequent pages.

Austria

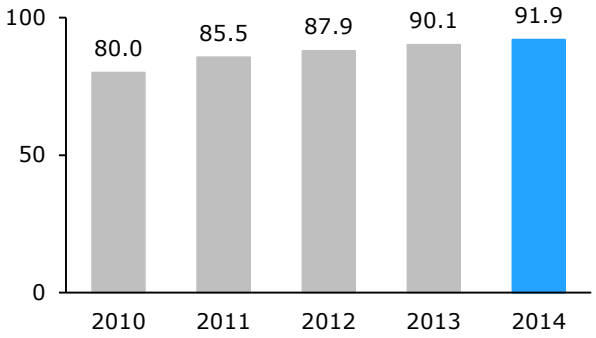
Hospital Validation Study

Precision (%)

Overall precision index improved by 1.8 percentage points in 2014

Large product forms reached 98.4%, medium 87.1% and small 79.8%

Forms validated in both years, 2013 and 2014, declined slightly by 1.3 percentage points to 91.3% in 2014

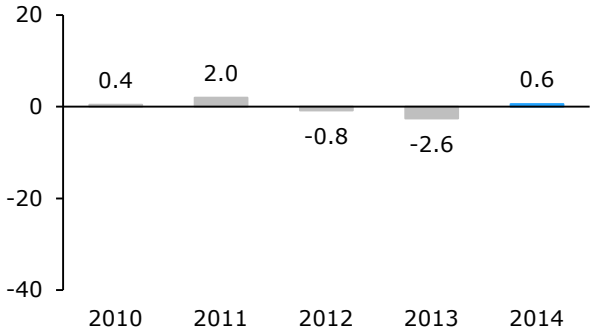


Over/Underestimation (%)

Overall bias turned from 2.6% underestimation in 2013 to 0.6% overestimation in 2014

Large product forms were overestimated by 2.7%, medium and small forms were underestimated by 1.4% and 4.5%, respectively

Bias of forms validated in both years, 2013 and 2014, turned from 1.1% underestimation in 2013 to 0.1% overestimation in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	8	9	11	10	**12**
Validated market share in unit terms	16%	21%	24%	23%	**27%**
Validated product forms	259	347	380	417	**472**

Actions

No action required from the statistical point of view

Belgium

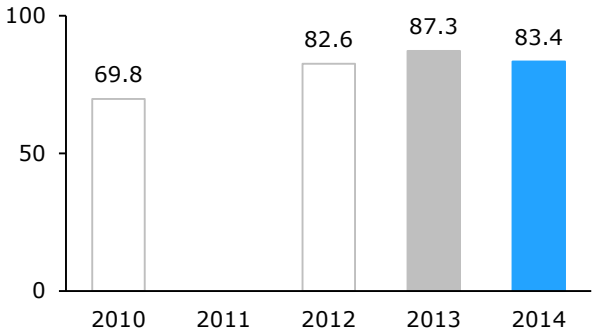
Hospital Validation Study

Precision (%)

Overall precision index declined by 3.9 percentage points in 2014

Medium product forms reached 89.6% and small 72.7%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, improved slightly by 0.9 percentage points to 82.9% in 2014

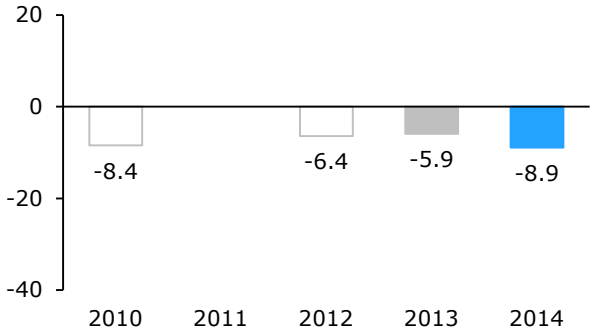


Over/Underestimation (%)

Overall underestimation increased by 3.0 percentage points in 2014

Medium product forms were underestimated by 9.5% and small by 0.9%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, increased by 1.4 percentage points to 9.0% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	7		4	14	**13**
Validated market share in unit terms	6%		9%	19%	**15%**
Validated product forms	109		91	301	**227**

Actions

Review quality control process

Bulgaria

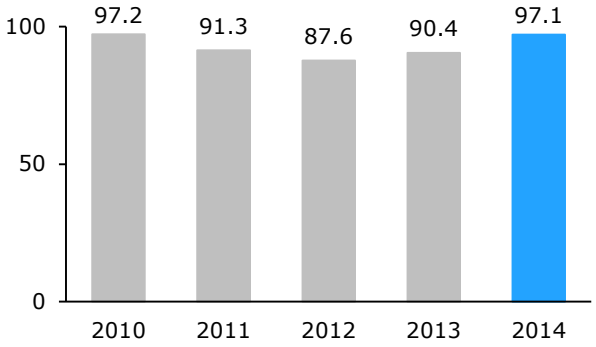
Hospital Validation Study

Precision (%)

Overall precision index improved by 6.7 percentage points in 2014

Due to low availability of product forms, a reasonable breakdown into sales volume groups was not possible

Forms validated in both years, 2013 and 2014, improved by 2.4 percentage points to 97.6% in 2014

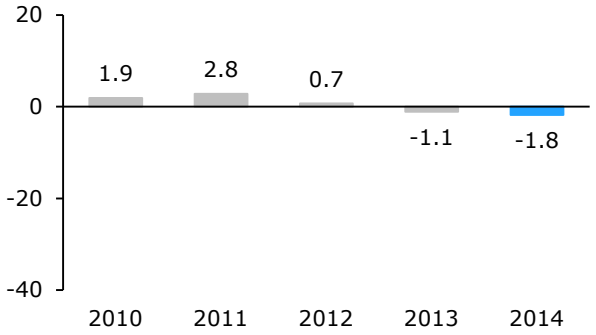


Over/Underestimation (%)

Overall underestimation increased slightly by 0.7 percentage points in 2014

Due to low availability of product forms, a reasonable breakdown into sales volume groups was not possible

Underestimation of forms validated in both years, 2013 and 2014, improved by 1.2 percentage points to 1.1% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	35	24	29	34	**19**
Validated market share in unit terms	52%	62%	53%	55%	**28%**
Validated product forms	168	153	153	149	**69**

Actions

No action required from the statistical point of view

Canada

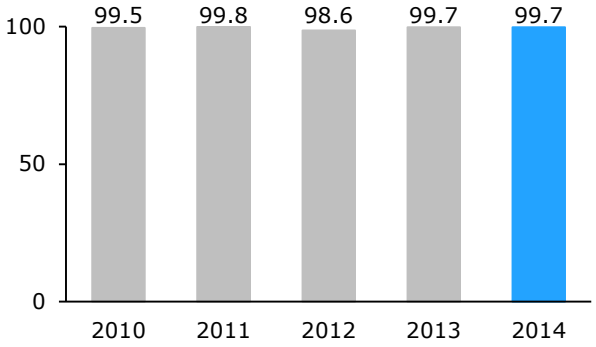
Hospital Validation Study

Precision (%)

Overall precision index remained stable in 2014

Large product forms reached a perfect 100%, medium 99.5% and small forms 99.0%

Forms validated in both years, 2013 and 2014, slightly improved by 0.1 percentage points to 99.8% in 2014



Over/Underestimation (%)

Overall overestimation improved slightly by 0.2 percentage points in 2014

Large product forms were overestimated by 1.1%, medium by 0.8% and small by 0.9%

Overestimation of forms validated in both years, 2013 and 2014, remained stable at 1.0% in 2014

Participation

	2010	2011	2012	2013	2014
Participating companies	61	56	60	59	**63**
Validated market share in unit terms	95%	95%	95%	95%	**95%**
Validated product forms	902	870	873	865	**851**

Actions

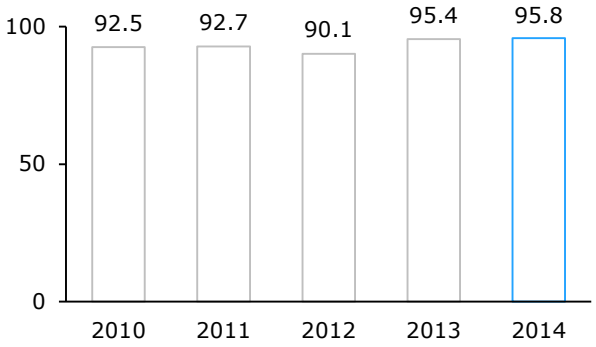
No action required from the statistical point of view

China

Precision (%)

Overall precision index slightly improved by 0.4 percentage points in 2014

Forms validated in both years, 2013 and 2014, improved by 0.1 percentage point to 95.7% in 2014

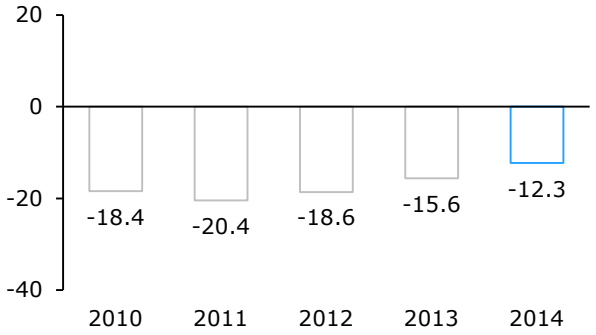


Over/Underestimation (%)

Overall underestimation improved by 3.3 percentage points in 2014

Large product forms were underestimated by 13.9%, medium by 9.1% and small by 4.6%

Underestimation of forms validated in both years, 2013 and 2014, improved by 1.2 percentage points to 12.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	33	35	39	44	**39**
Validated market share in unit terms	3%	4%	4%	5%	**4%**
Validated product forms	227	248	273	330	**286**

Actions

Update hospital universe

Germany

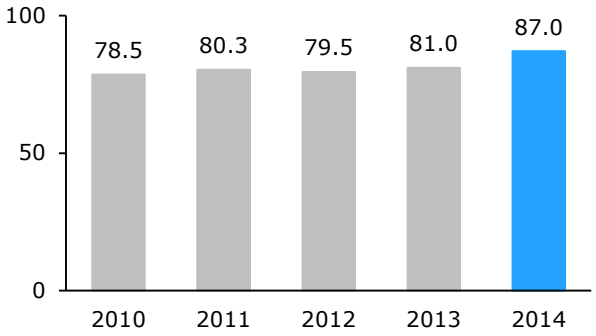
Hospital Validation Study

Precision (%)

Overall precision index improved by 6.0 percentage points in 2014

Large product forms reached a perfect 100%, medium forms reached 84.5% and small 48.4%

Forms validated in both years, 2013 and 2014, improved by 5.1 percentage points to 88.2% in 2014

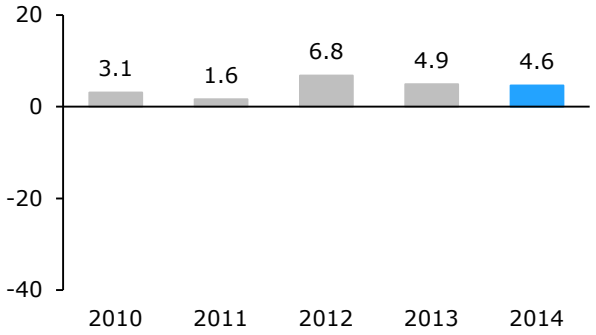


Over/Underestimation (%)

Overall overestimation improved slightly by 0.3 percentage points in 2014

Large product forms were overestimated by 2.4%, medium by 4.8% and small by 7.4%

Overestimation of forms validated in both years, 2013 and 2014, improved by 1.0 percentage point to 5.0% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	26	21	19	21	**22**
Validated market share in value terms	57%	54%	40%	42%	**50%**
Validated product forms	1,064	952	805	820	**1,244**

Actions

No action required from the statistical point of view

Italy

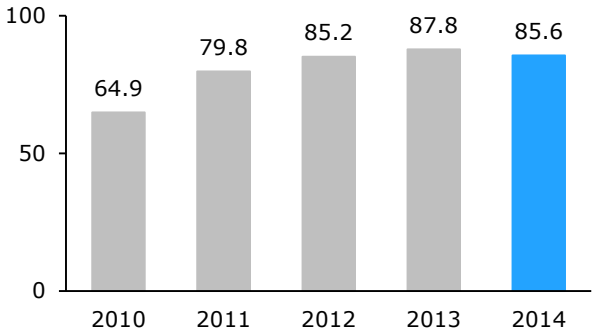
Hospital Validation Study

Precision (%)

Overall precision index declined by 2.2 percentage points in 2014

Medium product forms reached 90.0% and small 78.1%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, declined by 3.4 percentage points to 85.2% in 2014

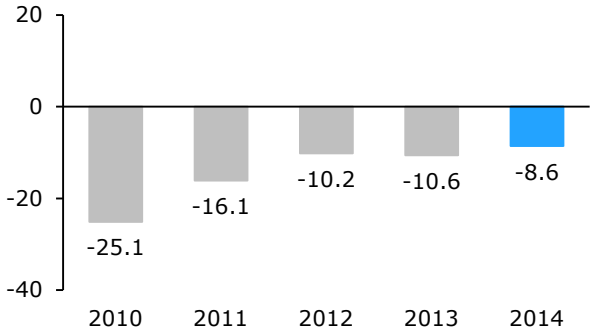


Over/Underestimation (%)

Overall underestimation improved by 2.0 percentage points in 2014

Medium product forms were underestimated by 8.4% and small by 11.2%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, improved by 3.8 percentage points to 6.9% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	10	11	13	13	**10**
Validated market share in unit terms	14%	18%	16%	15%	**12%**
Validated product forms	219	187	207	184	**143**

Actions

New quality control processes implemented

Korea

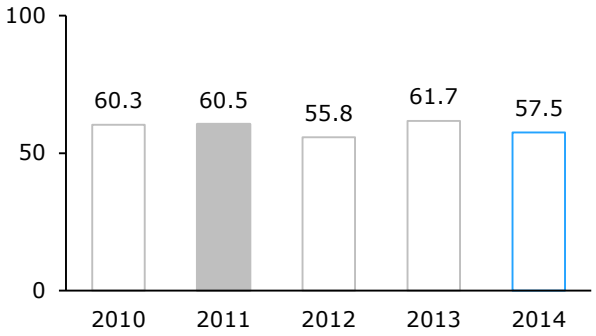
Hospital Validation Study

Precision (%)

Overall precision index declined by 4.2 percentage points in 2014

Due to low participation, a reasonable breakdown into sales volume groups was not possible

Forms validated in both years, 2013 and 2014, improved by 4.8 percentage points to 67.9% in 2014

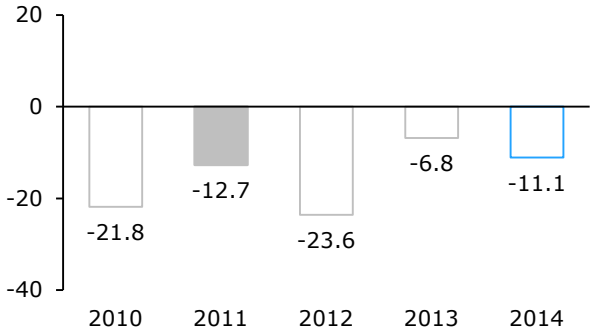


Over/Underestimation (%)

Overall underestimation increased by 4.3 percentage points in 2014

Due to low participation, a reasonable breakdown into sales volume groups was not possible

Underestimation of forms validated in both years, 2013 and 2014, improved by 8.2 percentage points to 8.2% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	22	18	15	12	**17**
Validated market share in unit terms	8%	34%	9%	7%	**5%**
Validated product forms	235	348	264	175	**181**

Actions

Review projection level and panel composition

Review feasibility of recruiting appropriate panels

Acquire more precise universe information

Philippines

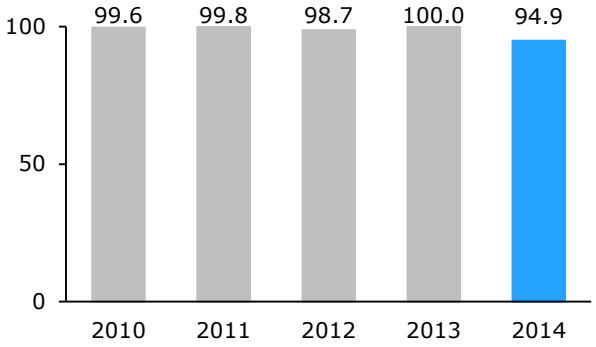
Hospital Validation Study

Precision (%)

Overall precision index declined by 5.1 percentage points in 2014

Medium product forms reached 96.4% and low forms 92.3%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, declined by 1.5 percentage points to 98.5% in 2014

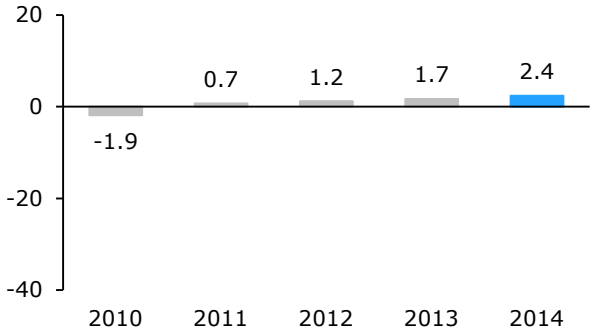


Over/Underestimation (%)

Overall overestimation increased by 0.7 percentage points in 2014

Medium product forms were overestimated by 2.2% and small by 4.0%. A minor number of large product forms was grouped into the medium class for analysis

Overestimation of forms validated in both years, 2013 and 2014, increased by 0.7 percentage points to 2.5% in 2014



Participation

	2010	2011	2012	2013	2014
Participating companies	22	21	16	15	**19**
Validated market share in unit terms	30%	23%	21%	21%	**24%**
Validated product forms	446	330	272	254	**332**

Actions

Enhance sample design and projection methodology

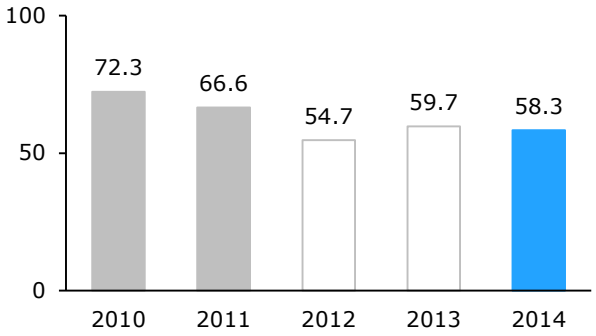
Spain

Precision (%)

Overall precision index declined by 1.4 percentage points in 2014

Due to low participation, a reasonable breakdown into sales volume groups was not possible

Forms validated in both years, 2013 and 2014, declined by 8.7 percentage points to 71.7% in 2014

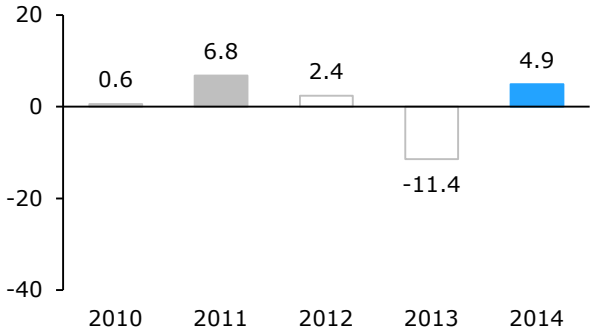


Over/Underestimation (%)

Overall bias turned from 11.4% underestimation in 2013 to 4.9% overestimation in 2014

Due to low participation, a reasonable breakdown into sales volume groups was not possible

Underestimation of forms validated in both years, 2013 and 2014, improved by 6.2 percentage points to 1.2% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	13	13	7	8	**9**
Validated market share in unit terms	13%	11%	9%	2%	**10%**
Validated product forms	518	470	106	72	**132**

Actions

Motivate more companies to participate in the validation study

Taiwan

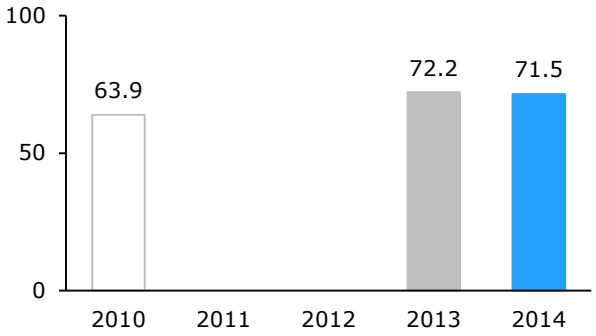
Hospital Validation Study

Precision (%)

Overall precision index declined slightly by 0.7 percentage points in 2014

Medium product forms reached 78.2% and small 60.0%. A minor number of large product forms was grouped into the medium class for analysis

Forms validated in both years, 2013 and 2014, improved by 2.3 percentage points to 70.8% in 2014

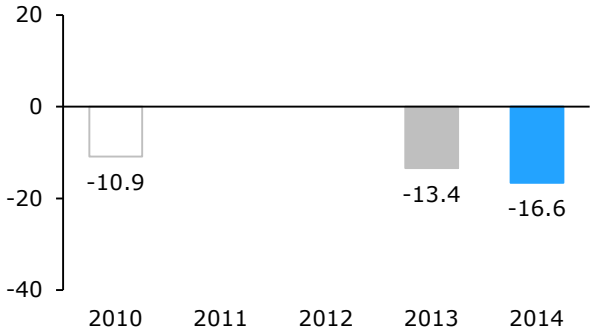


Over/Underestimation (%)

Overall underestimation increased by 3.2 percentage points in 2014

Medium product forms were underestimated by 16.0% and small by 24.6%. A minor number of large product forms was grouped into the medium class for analysis

Underestimation of forms validated in both years, 2013 and 2014, increased by 5.6 percentage points to 15.9% in 2014



Participation	2010	2011	2012	2013	2014
Participating companies	6			8	**6**
Validated market share in unit terms	5%			15%	**12%**
Validated product forms	127			242	**172**

Actions

Optimize public hospital data resource and private hospital panel

Enhance sample design

Improve projection methodology

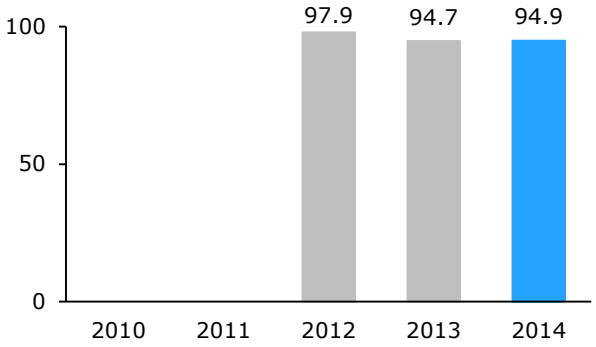
United Kingdom

Hospital Validation Study

Precision (%)

Overall precision index improved slightly by 0.2 percentage points in 2014

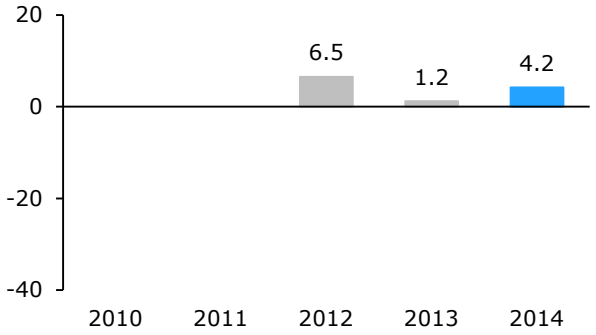
Medium product forms reached 96.3% and small 92.6%. A minor number of large product forms was grouped into the medium class for analysis



Over/Underestimation (%)

Overall overestimation increased by 3.0 percentage points in 2014

Medium product forms were overestimated by 4.4% and small forms were underestimated by 0.2%. A minor number of large product forms was grouped into the medium class for analysis



Participation

	2010	2011	2012	2013	2014
Participating companies			8	9	**9**
Validated market share in value terms			21%	16%	**13%**
Validated product forms			402	410	**419**

Actions

Review quality control process

Specialty Markets Validation Results

Given the increasing importance of specialty pharmaceutical markets, IMS has calculated separate accuracy measures for sub-groups of specialty products captured within our standard national retail and hospital services. These "sub-validations" are derived by filtering out the following four product groups from the standard services:

- Anti-TNF, specific anti-rheumatic agents and immunosuppressants
- Hepatitis B & HIV
- Oncology
- Others

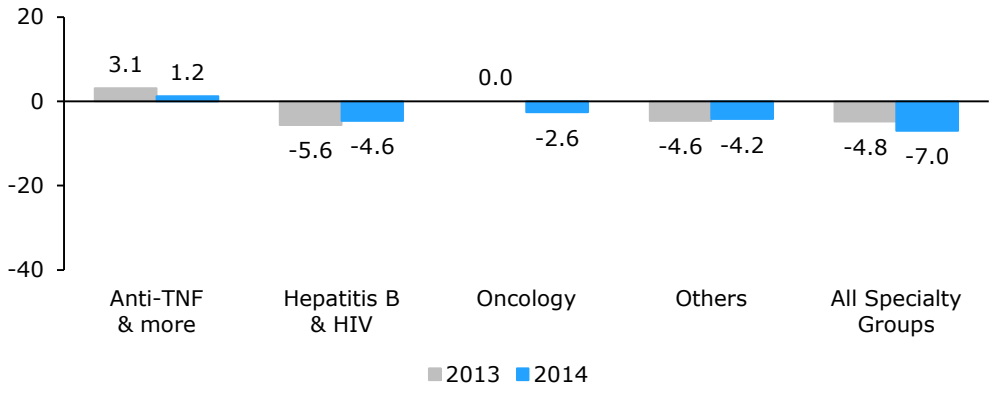
Others includes e.g., interferons, immunoglobulins, and drugs for the treatment of acromegaly, Alzheimer's disease, anemia, hemophilia, osteoporosis and metabolic diseases.

From a statistical perspective, specialty products typically occur in small quantities across multiple distribution channels and thus produce highly variable results in any statistical survey. However, due to their importance to the pharmaceutical industry in value terms, we conducted more detailed analyses on their overall validity.

Global Specialty Markets Validation Results

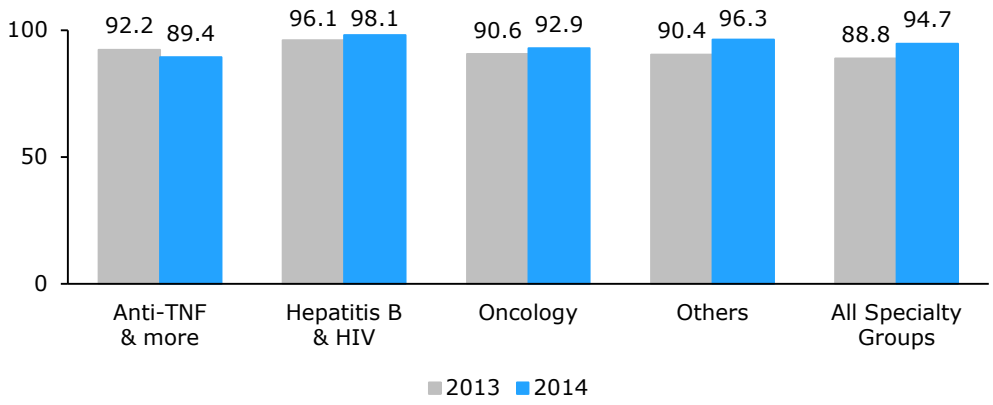
In order to ensure that our analysis was based on fairly solid samples, we've calculated results only for groups that contain a minimum of 20 product forms in the corresponding validation study. The aggregated bias and precision indices below are provided only for groups that met this criterion in both 2013 *and* 2014. The group *Anti-TNF, specific anti-rheumatic agents and immunosuppressants* represents 4 reports, *Hepatitis B & HIV* contains 3 reports, *Oncology* has 17 reports, *Others* represents 17 reports and *All Specialty Groups* contains 37 reports.

Specialty Markets Bias (%)



As illustrated in the graph above, the total underestimation increased by 2.2 percentage points, from 4.8% in 2013 to 7.0% in 2014. The *Oncology* group bias increased by 2.6 percentage points, while the other individual groups showed improvement of 0.4 to 1.9 percentage points.

Specialty Markets Precision Index (%)



The precision index showed overall improvement, with the *All Specialty Groups* category jumping from 88.8% in 2013 to 94.7% in 2014. The *Others* group had the strongest precision gain of 5.9 percentage points. *Oncology* improved by 2.3 and *Hepatitis B & HIV* by 2.0 percentage points, while *Anti-TNF & more* lost 2.8 percentage points.

Validating IMS Forecasting Services

IMS Global Forecasting & Opportunity Assessment produces market forecasts at country levels to help our clients in their strategic planning. Clearly, the forecast is only one element of the planning process, but it does offer guidance on strategic decisions and business development.

For this purpose, *IMS Market Prognosis* – this year providing five-year forecasts on 31 countries and one-year forecasts on 42 countries and covering about 90 percent of the total world market – uses a combination of quantitative and qualitative techniques.

Market Prognosis uses an econometric model to derive baseline forecasts. These are then integrated along with qualitative input by means of an event-driven forecasting technique, which allows the forecasting team to finalize the forecasts.

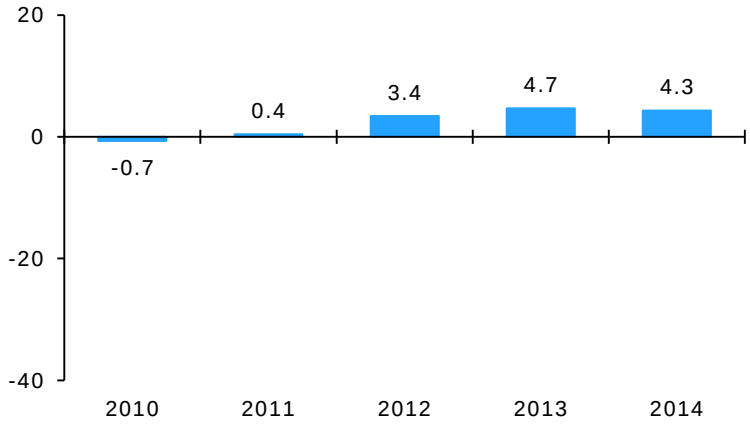
The validation process was designed as a twofold measurement of forecast validity, one step for the five-year forecast and another for the latest one-year forecast:

1) Compare the five-year forecasts published in the base year with the actual results ultimately attained. In this report we have compared forecasts for 2010–2014 with actual data for the same years.

2) Compare the published forecast for the most recent year (generated in the preceding year) with the real market sales for the same year. In this case we have compared forecasts for 2014, produced in 2013, with real 2014 results.

Validity of Annual Forecasts – All Countries

Forecasting Bias (%) based on 31 Countries



The overall market prognosis for the 31 countries validated this year showed a forecasting bias ranging between -0.7% and +4.7%.

Lower deviations were achieved for the first two years of the five-year span, which points at good quality of the baseline forecasting model.

The slight overestimation in the third to fifth year to a great extent originates from economic and unpredictable challenges in the Euro zone. The one-year forecast for 2014 turned out at an average -1.6 percent bias for 42 validated countries.

For the entire five-year period, the results by region were as follows:

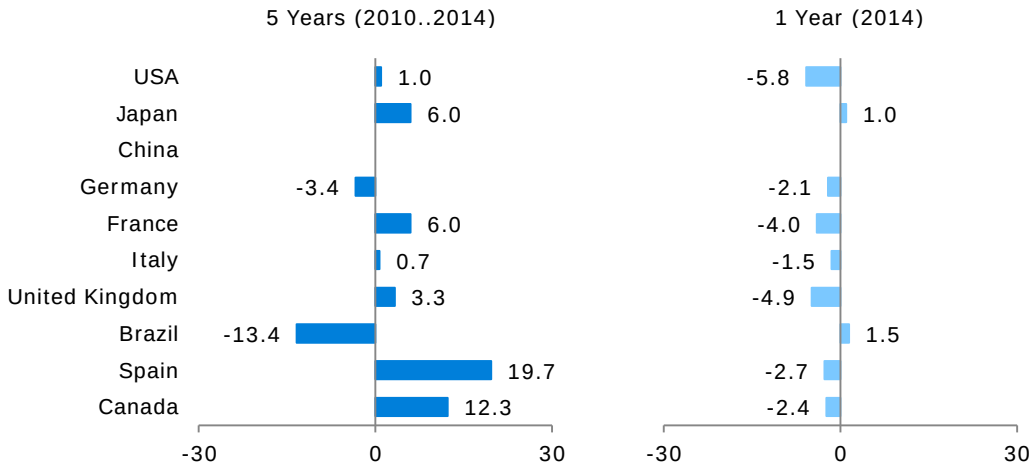
Region	Average Bias (%)	
	2009..2013	2010..2014
AsiaPacific	+2.2	+3.4
Europe	+6.2	+4.8
Latin America	-7.8	-8.5
North America	-2.3	+6.7
All Regions	**+2.5**	**+2.4**

The total bias improved slightly to +2.4%. *Europe* improved by 1.4 percentage points, while the remaining regions were facing bias increase. The regional one-year forecast for 2014 provided bias results ranging between -4.1% for *North America* and +1.3% for *AsiaPacific*.

Validity of Annual Forecasts – The Ten Leading Markets

The forecast results of the ten leading markets (USA, Japan, China, Germany, France, Italy, United Kingdom, Brazil, Spain and Canada) are presented in descending economic order in the subsequent graph:

Forecasting Bias by Country (%)



The 5-year forecast showed accentuated bias for three countries: the results for *Spain* and *Canada* were impacted by cost containment measures in the healthcare sector, for *Brazil* the relevance of the generics segment was undervalued. The remaining markets had clearly more accurate prognoses. No results were available for China. The one-year forecasts – again without results for China – achieved excellent outcomes in nearly all countries.

Measures to Maintain and Increase Accuracy

As discussed earlier in this report, it is relatively difficult to register major improvements in accuracy without the full-scale renovation of technologies and processes. New access to large volumes of wholesale data would, for example, be the equivalent of a large-scale sample increase and usually would induce just such a leap forward.

But in the absence of such advances, maintaining – much less improving upon – high quality results is like swimming upstream. A framework of processes, quality controls, and alert mechanisms is in place to avoid deterioration or to detect it early enough to trigger action for amelioration. Continuous measurement is crucial to ensuring that IMS services remain a useful and accepted reference for pharmaceutical market research and performance measurement.

As we obtain data from samples of wholesalers, pharmacies, and doctors or hospitals, it is of utmost importance that we carefully monitor these market players and react quickly to any changes that could affect the underlying sampling process. To ensure the accuracy of the market estimates we derive, it is essential that we conduct sales channel analyses regularly as well as update the universe and sample distribution routinely.

Universe Updates

IMS' commitment to quality dictates that we update universe information in regular cycles – either annually or, in geographic areas with a less effective statistical infrastructure, in biennial cycles.

The IMS Statistical Services department supervises the Company's compliance with these targets for updating universe information:

Region	Update Target
Europe, North America, parts of Pacific	Annual
All other regions	Biennial

In 2015, we monitored a total of 168 universe updates world-wide. Fourteen databases did not comply with the respective target cycles. The overall update index, therefore, is 91.7%, a 1.4 percentage point decline over last year's 93.1%.

By universe type, the 2015 update indices are shown on the next page.

Universe Update Monitor 2015 (%)

The update index for pharmacy universes improved from 90.9% in 2014 to 91.8% in 2015. Medical universes decreased by 5.5 percentage points to 89.5%, and Hospital universes reduced by 1.9 percentage points, from 95.2% in 2014 to 93.3% in 2015.

Wholesaler & Distributor Data

Statistical theory holds that a massive improvement in data accuracy can only be achieved by increasing the underlying sample, and even that works only up to a point. Beyond that point, any additional gains in accuracy from a larger sample are marginal. Still, larger sampling volumes are required to properly track smaller products and to assure acceptable levels of confidence even in geographical sub-areas.

Naturally, there are limitations with pharmacy panels, and samples cannot be increased at will. Even when pharmacies do become part of the panel, a huge technical effort is required for them to report data in a reasonable timeframe.

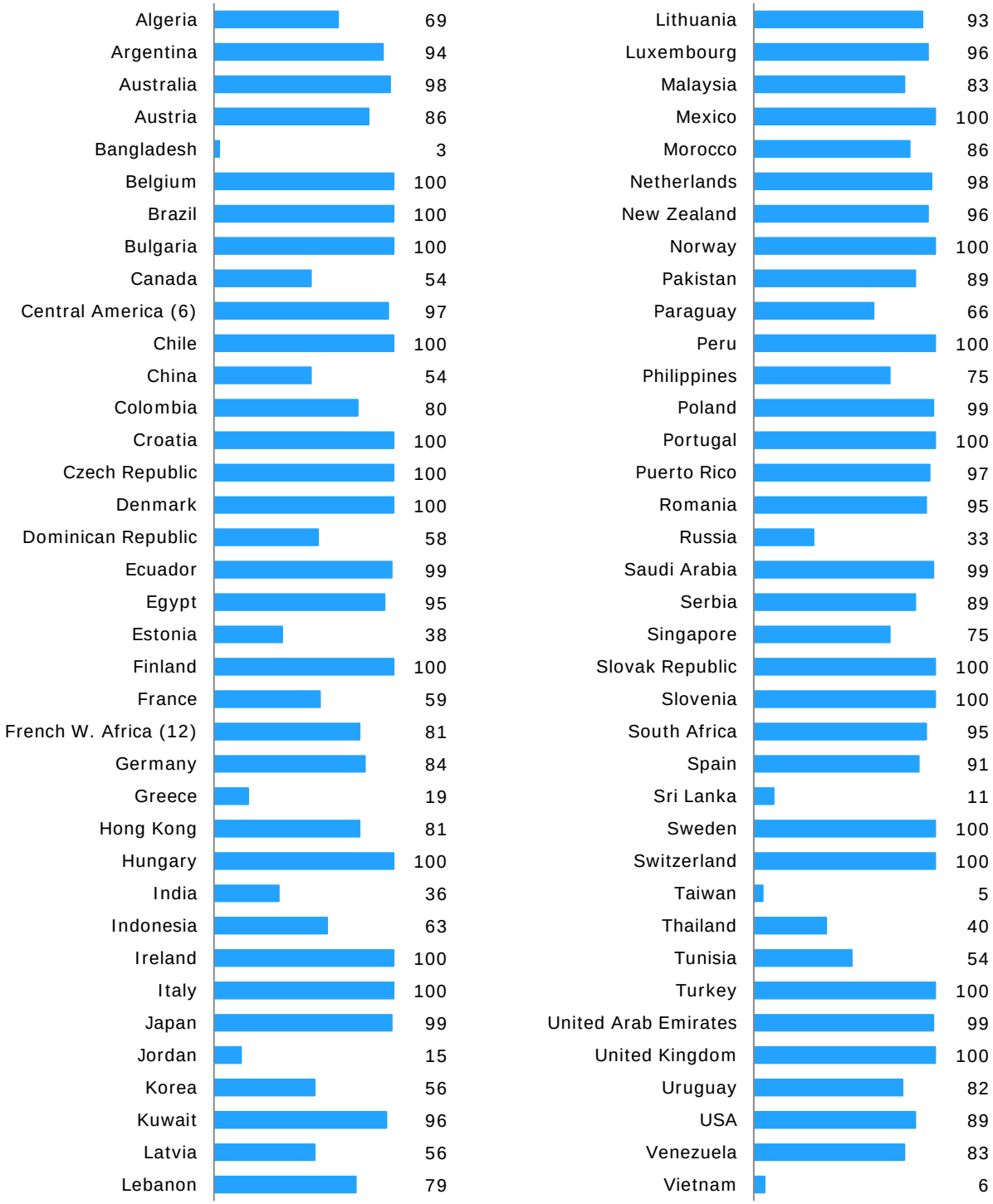
For that reason, IMS decided to supplement pharmacy panel results by recruiting wholesalers, distributors, and in some cases, pharmaceutical manufacturers to supply data. Meanwhile, in some countries, these alternative sources have become the sole source of data and have brought about significant jumps in precision. In most countries today, we pursue multi-sampling approaches in which pharmacies are used to capture direct sales and wholesalers are used to capture indirect sales to pharmacies and hospitals. Pharmacy samples in turn have grown considerably in many places in order sustain the high quality standards set by the inclusion of near-census information.

By the end of the third quarter 2015, most of the IMS countries were using wholesaler or distributor data as their major data source, either exclusively or in addition to other sample components.

78% of the countries have a sampling ratio of at least 70 percent, representing strong retail market coverage.

In three countries (*Dominican Republic*, *Thailand* and *Tunisia*) we made significant progress of 3 to 6 percentage points by including new wholesalers into our panels. Please, see the subsequent page for more details.

IMS Data Capture in % of Pharmaceutical Market



Timeliness

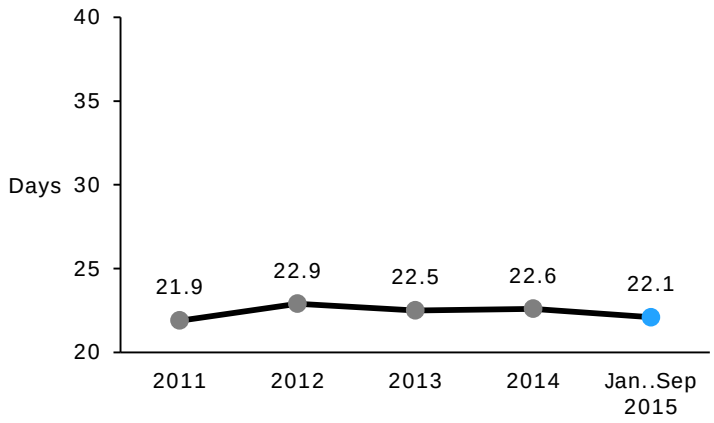
Besides a critical need for highest accuracy, we acknowledge our clients' desire for quick access to the data and analyses. This calls for a continuous drive for efficiency and upgrading of the product generation process. Streamlining these processes including process analytics, problem solving, and re-engineering is not an overnight task that yields immediate returns; it is a multi-year process that may shave off small increments of time each year.

Although continuous reductions are a great achievement, we are fully aware that there is a limit to the amount of time we can trim from our production cycle, given that we also strive for the highest levels of accuracy. We are approaching this limit now in many countries, and further acceleration of delivery is hardly feasible.

We expanded our tracking base to include the complete range of weekly offerings, a move that had a one-time impact of reducing our overall average delivery time by two days. So as not to cause a trend break with this change, we added the weekly services into our historical analysis dating back to 2011.

Based on the new expanded basket, we have achieved a slight improvement of 0.5 days in 2015, with an overall average delivery time of 22.1 days. Although this number is still tentative for the entire year 2015 with three months missing, it represents the best result of the last four years.

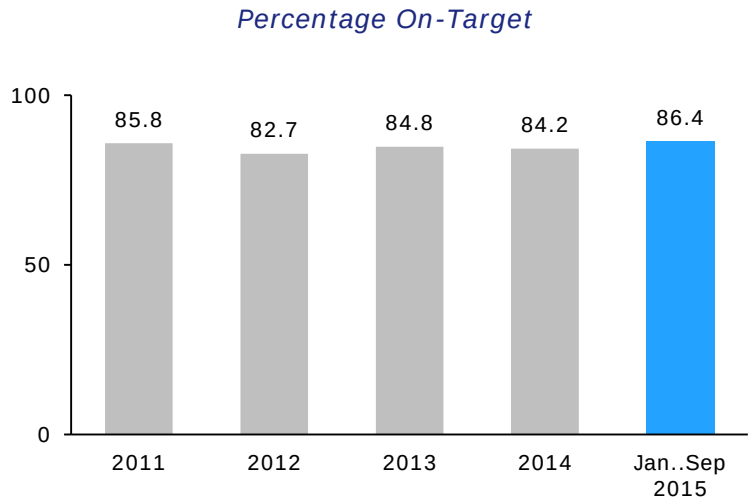
Elapsed Days after Reporting Period (Average)



We have reduced our internal targets for data delivery over time. These targets are set independent from local contractual due dates and reflect an IMS internal standard to stimulate further improvements in delivery time. Since 2005, our official delivery targets are:

Period	Weekly Services	Monthly Services	Quarterly Services
1986..1999		50 days	60 days
2000..2004		35 days	50 days
Since 2005	15 days	30 days	45 days

Applying the 2005 targets of 15/30/45 days to the more than 33,000 deliveries we made world-wide between January 2011 and September 2015, yields "On-Target Fulfillment" percentages of:



The average on-target percentage of all reports improved by 2.2 percentage points, from 84.2% in 2014 to 86.4% up to the third quarter 2015.

Delivery Performance in Detail

(1) Data Delivery Mode

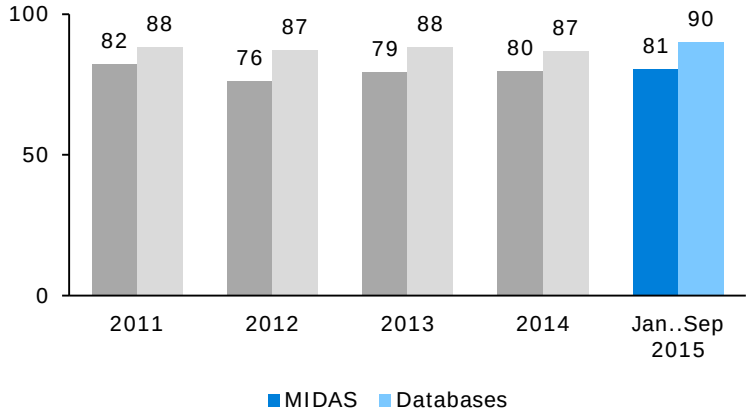
The following electronic data delivery systems are offered by IMS:

MIDAS	Multi-national database – quarterly data, off-site
Monthly MIDAS	Multi-national database – monthly data, off-site
NDB	National database system, off-site
DataView, IMS+, Sales Analyzer	National/sub-national databases, on-site

As of the ACTS 2013 report, we do not separately analyze the delivery of printed editions due to the general decline of clients using print media. Furthermore we are now collapsing the results for National Database updates as well as Monthly and Quarterly MIDAS deliveries to one single number 'MIDAS'.

For MIDAS deliveries, the on-target performance has improved by one percentage point to 81%. The databases were compliant with our internal completion targets at 90% in the first three quarters of 2015, a 3 percentage point improvement over 2014. The graph on the subsequent page illustrates this development.

Percentage On-Target



(2) Report Types

Delivery by Report Type

Report	Elapsed Days of Delivery			Percentage On-Target *	
	2014 Jan..Dec	2015 Jan..Sep	Earlier (-) Later (+)	2014 Jan..Dec	2015 Jan..Sep
Hospital	27.1	25.6	-1.5	77%	83%
Medical & Patient	35.7	33.8	-1.9	78%	79%
OTC	20.7	20.6	-0.1	91%	94%
Pharmaceutical	23.0	22.9	-0.1	87%	87%
PharmaTrend	9.7	9.8	+0.1	95%	95%
Promotion	32.3	32.5	+0.2	67%	69%
Prescription	20.0	19.5	-0.5	88%	90%
Sales Territory	15.9	16.0	+0.1	89%	90%
Xponent	14.5	14.4	-0.1	85%	87%

* measured against delivery targets of 15/30/45 days for weekly/monthly/quarterly services

Analysis of the delivery times revealed two significant improvements from 2014 up to the first three quarters of 2015: *Hospital* services improved by 1.5 days and *Medical & Patient* services by 1.9 days. Overall, six out of the nine core IMS services have improved by 0.1 to 1.9 days on average. The remaining three services have become marginally slower by 0.1 to 0.2 days.

Looking at the on-target performance, all nine services have maintained or improved their previous year's results, most significantly *Hospital* and *OTC* reports with a six and three percentage point improvement, respectively. Clear improvement is required for *Promotion* reports as less than 70% were delivered on time.

(3) IMS Regions

Delivery by Region

IMS Area	Elapsed Days of Delivery			Percentage On-Target *	
	2014 Jan..Dec	2015 Jan..Sep	Earlier (-) Later (+)	2014 Jan..Dec	2015 Jan..Sep
Asia	30.4	28.4	-2.0	71%	81%
Central Europe	15.2	15.3	+0.1	93%	93%
East Europe	17.2	18.0	+0.8	93%	90%
Latin America	28.9	28.1	-0.8	73%	76%
Mid East & Africa	24.8	25.6	+0.8	89%	89%
North America	23.2	23.1	-0.1	86%	88%
North Europe	18.2	17.5	-0.7	92%	93%
Pacific	25.7	24.8	-0.9	90%	93%
South Europe	23.5	23.1	-0.4	74%	75%

* measured against delivery targets of 15/30/45 days for weekly/monthly/quarterly services

In terms of delivery days, six IMS regions have been successful in reducing their delivery time, most significantly *Asia* by 2.0 days. The remaining three regions have all faced slightly increased delivery times of 0.1 to 0.8 days on average.

Measuring on-target delivery, eight regions have managed to maintain or improve their 2014 delivery performance in the first three quarters of 2015, again most significantly *Asia* from 71% to 81%. *East Europe* declined by 3 percentage points to 90%.

Contact

Statistical Services
c/o IMS Health GmbH & Co. OHG
Darmstaedter Landstrasse 108
60598 Frankfurt/Main
Germany

Tel.: +49-69-66044248
E-Mail: IMSFrankfurtSTOGSS@us.imshealth.com

www.imshealth.com

ABOUT IMS HEALTH

IMS Health is the leading provider of information services for the healthcare industry around the world. The company draws on its global technology infrastructure and unique combination of in-depth, sophisticated analytics, on-shore and off-shore commercial services, and consulting platforms to help clients better understand the performance and value of medicines. With a presence in 100+ countries and more than 55 years of industry experience, IMS Health serves leading decision makers in healthcare, including pharmaceutical manufacturers and distributors, providers, payers, government agencies, policymakers, researchers and the financial community. Additional information is available at www.imshealth.com.