SAS® In-Market Revenue Simulation

Quantify the global impact of government-mandated and payer price reductions, competitor products and currency shocks to make strategic, in-market pricing decisions

Ssas
THE POWER TO KNOW®

		MSP		Net
#747 : Optimization:		€1,250,340,194		€1,250,340,194
#746 : Simulation:		€1,192,412,448		€1,192,412,448
Difference:		€57,927,746		€57,927,746
Average End Prices:		185.59 vs. 173.79	(6.79%)	185.59 vs. 173.79
Average End Prices (Weighted):		195.47 vs. 179.04	(9.18%)	195.47 vs. 179.04

Sort: (Default) ▾   Filter SKUs ▾   [Excel] [PDF]

SKU		Country	Difference
SKU1		Czech Republic (CZ)	€ (4,474,479.96)
SKU1		Bulgaria (BG)	€ (1,023,117.00)
SKU1		Estonia (EE)	€ (758,022.89)
SKU1		Latvia (LV)	€ (429,377.67)
SKU1		Malta (MT)	€ (326,569.40)
SKU1		Cyprus (CY)	€ (127,888.11)
SKU1		Luxembourg (LU)	€ 0.00
SKU1		Denmark (DK)	€ 0.00
SKU1		Belarus (BY)	€ 0.00
SKU1		Sweden (SE)	€ 0.00
SKU1		Slovenia (SI)	€ 0.00
SKU1		Lithuania (LT)	€ 32,168.38
SKU1		Slovak Republic (SK)	€ 115,435.32
SKU1		Portugal (PT)	€ 116,902.50
SKU1		Ireland (IE)	€ 237,751.95
SKU1		Norway (NO)	€ 965,049.66
SKU1		Spain (ES)	€ 1,077,819.30
SKU1		Netherlands (NL)	€ 1,214,251.40
SKU1		Finland (FI)	€ 1,317,175.00
SKU1		Italy (IT)	€ 1,538,546.12

What does SAS® In-Market Revenue Simulation do?

SAS In-Market Revenue Simulation helps pharmaceutical companies maximize product life cycle revenues from global markets by understanding post-launch price erosion and managing the impact of the international reference price process.

Why is SAS® In-Market Revenue Simulation important?

The complexities of international reference pricing require a centralized framework that allows for simulations to better understand the impacts of changes and inform strategic decision making around pricing.

For whom is SAS® In-Market Revenue Simulation designed?

It's designed for pharmaceutical companies with products in or approaching the in-market phase.

In the face of product pipeline pressures and revenue losses due to expiring patents, pharmaceutical companies are launching more new products. But government mandated and payer price reductions, competitor product entries and currency exchange shocks can wreak havoc with launch plans – and ultimately profits and revenues – throughout the product life cycle. For example, due to effects of international reference pricing (IRP), a single country's in-market price reduction can have a significant ripple effect on other markets globally.

The complexities of IRP and other pricing variables can have significant impacts throughout the product life cycle. What's needed is an analytics solution that seamlessly delivers insights throughout the life cycle so executives can effectively mitigate those impacts.

Most companies have tried to simulate the financial impacts of these variables using Excel spreadsheets and one-off models developed by disparate departments internally – often using publicly available data that's out of date or incomplete. But this approach leads to inconsistent methods, lack of governance and inaccurate models that lead to poor decisions and outcomes.

SAS In-Market Revenue Simulation uses advanced analytics that empower pricing experts to model any number of annual global price changes and forecast amendments related to international reference pricing. It delivers both global and granular insights into the evolution of price over time, helping users visualize and identify the best strategy to maximize revenue across the life cycle of a product.

Key Benefits

- **Gain insights from in-market simulations needed to maximize revenue and reduce global price erosion from post-launch through the remaining product life cycle**. SAS In-Market Revenue Simulation uses next-generation simulation analytics to quantify the impact of pricing changes in the complex IRP landscape, maximizing revenue from post-launch through the remaining product life cycle. Users gain a granular understanding of price evolution over time and the impact of pricing related changes at a global level.

- **Access to the most accurate and up-to-date IRP data**. SAS has an exclusive partnership with IHS Markit, which gives SAS customers the option to use best-in-class IRP data to run their simulation scenarios.

- **Realize rapid time to value**. Unlike home-grown Excel tools, SAS In-Market Revenue Simulation provides a robust and intuitive framework that supports quick deployment and execution – and faster time to simulation-enabled decision making regarding pricing.

Product Overview

SAS In-Market Revenue Simulation is a SAS Cloud Analytics offering (or software as a service) designed for pharmaceutical companies. Executives can use it to quantify the global impact of mandated government or payer price reductions, the entry of competitor products, and currency exchange shocks – enabling them to make strategic, data-driven decisions throughout the rest of the product life cycle.

The solution's built-in, high-performance analytics engine executes complex, global IRP simulations in seconds. Advanced business intelligence tools give users the

highest degree of confidence and trust in the solution and its findings, as well as the ability to customize and nuance simulations to meet requirements. For example, they can execute any number of "what if" scenarios; create visualizations to share with business stakeholders; and dig deeper to understand why certain sequences, pricing and timing are optimal. Comparison reporting features make it easy to compare any two scenarios – including an optimization and a simulation – to identify the pivotal country or countries responsible for the majority of a product's price erosion.

Alternatively, two simulation scenarios may be compared to investigate different price assumptions and understand the ripple effects on revenue.

When deployed in conjunction with SAS Launch Revenue Optimization, companies can seamlessly transition from the launch phase into the in-market phase – continuously managing pricing across the entire product life cycle. This can significantly boost revenues and profits, as they can systematically understand and mitigate the effects of pricing variables. For example,

customers can realize tens to hundreds of millions in additional revenue by making optimal pricing decisions across the entire product life cycle.

Access to complete, accurate IRP data

Accurate and up-to-date IRP data is critical to determining the optimal launch sequence and timing – but publicly available data is usually incomplete and out of date. To address this, SAS has partnered with IHS Markit, giving customers the option to use their trusted IRP data for analysis.

Built-in BI tools and greater transparency to build trust and confidence

The business intelligence tools included in SAS In-Market Revenue Simulation allow users to easily create visualizations to share with business stakeholders.

Transparency and deeper insights

Competitive solutions are black boxes that deliver simulations with no ability to investigate or debate further. In contrast, SAS In-Market Revenue Simulation is transparent and offers greater granularity, allowing customers to dig deeper to understand simulations and to interrogate findings. For example, users can compare an optimization against a simulation.

Controlled user access and tracking

SAS In-Market Revenue Simulation supports thorough oversight of who is using built-in tools by providing role-based permissions, workflow governance and historical audit features. For example, each login is tracked by time/user; each edit of a setting or upload of data is tracked by time/user; and users are granted roles to access different features of the solution. Multiple roles can be configured, upon initial setup of the customer area, and users may be assigned to one of these roles, which access different features. For example, a role of "super user" may be the only role that has access to create a new product in the solution. Also, scenarios may be assigned to different users for approval through the workflow.

Global Price Intelligence - TEST

Products | Countries | Plans | Scenarios | Exchange Rates

Navigation Options...

Plans > View Plan #65: Fictalenium Base Plan

Fictalenium Base Plan (Fictalenium)   Differences: Countries (0) | General / Run Settings:

Edit | Copy/Add | View/Compare | Excel

All Info | Price / Date Info | IRP Info | Filter SKUs

Plan Settings: (29)   (Settings Help)

Country	SKU	Currency	Launch Price (MSP)	Fix Launch Price	Lower Bound Price	Upper Bound Price	PPP Markup (%)	Earliest Launch Date	Fix Earliest Launch Date	Maximum Launch Date	Num Periods to Suppress Events	Volume Forecast	Informal Values	Discount Values	Reference / Pricing Events	Minimum Time First Revision	Revision Interval	In Market Lag	Launch Lag	Launch Rule	Reference Rule
Austria (AT)	SKU1	USD	178.00	No	125.00	214.00	(not set)	01-AUG-2018	No				i		(not set)	(0)	1	3	1	1	AVG2	AVG2
Belarus (BY)	SKU1	USD	164.00	No	109.00	187.00	(not set)	01-MAY-2018	No				i		(not set)	(0)	0	4	2	1	MIN5	MIN5
Belgium (BE)	SKU1	USD	182.00	No	127.00	218.00	(not set)	01-MAR-2018	No				i		(not set)	(0)	9	6	4	1	AVG1	AVG1
Bulgaria (BG)	SKU1	USD	164.00	No	109.00	187.00	(not set)	01-JAN-2018	No				i		(not set)	(0)	2	6	2	1	MIN5	MIN5
Cyprus (CY)	SKU1	USD	162.00	No	108.00	185.00	(not set)	01-NOV-2018	No				i		(not set)	(0)	0	6	1	1	AVG2	AVG2
Czech Republic (CZ)	SKU1	USD	174.00	No	116.00	174.00	(not set)	01-AUG-2018	No				i		(not set)	(0)	0	6	1	1	MIN1	MIN1
Denmark (DK)	SKU1	USD	173.00	No	121.00	208.00	(not set)	01-OCT-2018	No				i		(not set)	(0)	0	0	1	1	WORK	WORK
Estonia (EE)	SKU1	USD	162.00	No	108.00	185.00	(not set)	01-DEC-2018	No				i		(not set)	(0)	0	3	1	1	AVG2	AVG2
Finland (FI)	SKU1	USD	169.00	No	118.00	203.00	(not set)	01-JUL-2018	No				i		(not set)	(0)	1	6	1	2	MIN5	MIN5
France (FR)	SKU1	USD	250.00	No	175.00	300.00	(not set)	01-SEP-2018	No				i		(not set)	(0)	0	6	4	1	AVG2	AVG2
Germany (DE)	SKU1	USD	269.00	No	188.00	323.00	(not set)	01-JAN-2018	No				i		(not set)	(0)	2	12	1	1	AVG3	AVG3
Greece (GR)	SKU1	USD	174.00	No	116.00	199.00	(not set)	01-DEC-2018	No				i		(not set)	(0)	0	12	1	1	MIN5	MIN5
Hungary (HU)	SKU1	USD	169.00	No	113.00	193.00	(not set)	01-JAN-2019	No				i		(not set)	(1) i	0	2	1	1	MIN2	MIN2
Ireland (IE)	SKU1	USD	170.00	No	119.00	204.00	(not set)	01-MAR-2019	No				i		(not set)	(0)	2	6	2	1	AVG2	AVG2
Italy (IT)	SKU1	USD	234.00	No	164.00	281.00	(not set)	01-OCT-2019	No				i		(not set)	(0)	2	4	1	1	AVG3	AVG3
Latvia (LV)	SKU1	USD	163.00	No	109.00	186.00	(not set)	01-SEP-2018	No				i		(not set)	(0)	2	3	2	1	MIN4	MIN4
Lithuania (LT)	SKU1	USD	164.00	No	109.00	187.00	(not set)	01-NOV-2019	No				i		(not set)	(0)	0	4	2	1	AVG1	AVG1
Luxembourg (LU)	SKU1	USD	165.00	No	110.00	188.00	(not set)	01-JUN-2019	No				i		(not set)	(0)	0	0	1	1	WORK	WORK
Malta (MT)	SKU1	USD	161.00	No	107.00	184.00	(not set)	01-APR-2019	No				i		(not set)	(0)	3	12	1	1	AVG3	AVG3
Netherlands (NL)	SKU1	USD	197.00	No	138.00	236.00	(not set)	01-OCT-2019	No				i		(not set)	(0)	0	6	6	1	AVG2	AVG2
Norway (NO)	SKU1	USD	177.00	No	124.00	212.00	(not set)	01-NOV-2018	No				i		(not set)	(0)	3	6	2	1	MIN5	MIN5
Poland (PL)	SKU1	USD	183.00	No	128.00	220.00	(not set)	01-MAY-2018	No				i		(not set)	(0)	0	4	1	1	MIN2	MIN2
Portugal (PT)	SKU1	USD	175.00	No	117.00	200.00	(not set)	01-AUG-2019	No				i		(not set)	(0)	0	6	4	1	AVG2	AVG2
Romania (RO)	SKU1	USD	174.00	No	116.00	199.00	(not set)	01-JAN-2019	No				i		(not set)	(0)	3	12	1	1	MIN2	MIN2
Slovak Republic (SK)	SKU1	USD	167.00	No	111.00	191.00	(not set)	01-JUN-2019	No				i		(not set)	(2) i	0	6	1	1	MIN3	MIN3
Slovenia (SI)	SKU1	USD	164.00	No	109.00	187.00	(not set)	01-MAY-2019	No				i		(not set)	(0)	0	8	1	1	AVG1	AVG1
Spain (ES)	SKU1	USD	216.00	No	151.00	259.00	(not set)	01-JAN-2018	No				i		(not set)	(0)	0	12	1	1	AVG3	AVG3
Sweden (SE)	SKU1	USD	185.00	No	130.00	222.00	(not set)	01-OCT-2019	No				i		(not set)	(0)	0	3	1	1	WORK	WORK
United Kingdom (UK)	SKU1	USD	256.00	No	179.00	307.00	(not set)	01-JAN-2018	No				i		(not set)	(0)	0	4	1	1	MAX1	MAX1

Capture launch plans.

	MSP	Net
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Average End Prices (Weighted):	195.47 vs. 179.04 (9.18%)	195.47 vs. 179.04 (9.18%)

Table | Network Diagram | Country By Country | Pivotal | Price/Revenue O...

Sort: (Default) | Filter SKUs

#747 : Optimization

SKU	Country	Difference	Revenue (MSP)	Date	Price (MSP) Launch	Price (MSP) Start
SKU1	Czech Republic (CZ)	€ (4,474,479.96)	€ 11,865,867.00	01-JAN-2019	174.00	174.00
SKU1	Bulgaria (BG)	€ (1,023,117.00)	€ 5,899,979.00	01-JUN-2018	164.00	187.00
SKU1	Estonia (EE)	€ (758,022.89)	€ 24,688,869.00	01-JAN-2019	162.00	185.00
SKU1	Latvia (LV)	€ (429,377.67)	€ 2,134,145.00	01-DEC-2018	163.00	186.00
SKU1	Malta (MT)	€ (326,569.40)	€ 149,668.33	01-OCT-2019	161.00	168.17
SKU1	Cyprus (CY)	€ (127,888.11)	€ 1,508,305.00	01-DEC-2018	162.00	185.00
SKU1	Luxembourg (LU)	€ 0.00	€ 2,073,225.00	01-JUN-2019	165.00	165.00
SKU1	Denmark (DK)	€ 0.00	€ 25,353,669.00	01-OCT-2018	173.00	173.00
SKU1	Belarus (BY)	€ 0.00	€ 5,140,252.00	01-MAY-2018	164.00	164.00
SKU1	Sweden (SE)	€ 0.00	€ 8,151,840.00	01-OCT-2019	185.00	185.00
SKU1	Slovenia (SI)	€ 0.00	€ 1,973,224.00	01-MAY-2019	164.00	187.00
SKU1	Lithuania (LT)	€ 32,168.38	€ 401,428.91	01-NOV-2019	164.00	164.59
SKU1	Slovak Republic (SK)	€ 115,435.33	€ 7,158,489.00	01-JUN-2019	167.00	191.00
SKU1	Portugal (PT)	€ 116,902.50	€ 5,995,000.00	01-AUG-2019	175.00	200.00
SKU1	Ireland (IE)	€ 237,751.95	€ 15,970,752.00	01-MAR-2019	170.00	204.00
SKU1	Norway (NO)	€ 965,049.66	€ 34,704,412.95	01-NOV-2018	177.00	212.00
SKU1	Spain (ES)	€ 1,077,819.30	€ 12,407,929.03	01-NOV-2019	216.00	176.08
SKU1	Netherlands (NL)	€ 1,214,251.40	€ 14,091,014.12	01-OCT-2019	197.00	215.04
SKU1	Finland (FI)	€ 1,317,175.00	€ 28,416,515.00	01-JUL-2018	169.00	203.00
SKU1	Italy (IT)	€ 1,538,546.12	€ 27,593,554.12	01-OCT-2019	234.00	173.68
SKU1	Austria (AT)	€ 1,749,782.86	€ 43,712,202.75	01-AUG-2018	178.00	214.00
SKU1	Hungary (HU)	€ 1,953,304.40	€ 20,217,893.00	01-JAN-2019	169.00	193.00
SKU1	Belgium (BE)	€ 2,300,236.12	€ 74,922,666.43	01-MAR-2018	182.00	218.00
SKU1	Romania (RO)	€ 3,152,886.00	€ 25,634,334.00	01-JAN-2019	174.00	187.00
SKU1	Greece (GR)	€ 3,852,503.30	€ 31,450,452.00	01-DEC-2018	174.00	199.00
SKU1	United Kingdom (UK)	€ 8,057,422.80	€ 235,769,434.00	01-JAN-2018	256.00	256.00
SKU1	France (FR)	€ 11,600,625.96	€ 142,634,634.98	01-SEP-2018	250.00	240.25
SKU1	Poland (PL)	€ 12,510,181.50	€ 135,957,004.00	01-MAY-2018	183.00	218.00
SKU1	Germany (DE)	€ 13,275,359.00	€ 304,363,435.00	01-JAN-2018	269.00	269.00

Detailed pricing strategy report.

Key Features

High-performance analytics
- Execute complex, global IRP simulations in seconds.
- Built on trusted SAS advanced analytics.

Advanced tools
Powerful tools allow for greater customization and nuance when running optimizations. They include:
- **SKU decomposition** – enables users to use multiple SKUs for a single product when executing simulation scenarios, as well as different match rules when referencing SKUs across countries.
- **List and net price levels** – can be used to determine both list and net revenue by including the discount from list to net price by period for each country and including the reporting of both list and net prices.
- **Currency exchange rate sets** – to view prices in the country currency and assign static rates or create new rate sets.
- **Formal/informal referencing** – enables a country to reference with informal rules by assigning either a percent discount or an absolute value to each period of the plan.
- **Root cause analysis** – using enhanced visualizations and analysis to explore the reason for price differences in a country, uncover root causes at a granular level, and easily determine if a pivotal country is causing the differences for multiple countries.
- **List price or PPP referencing** – enables users to reference a list price or pharmacy purchase price (PPP), where PPP is a markup of the list price; countries can reference on either list or PPP, but not both, within the same scenario. PPP is converted back to list price (and possibly net price) for reporting purposes.
- **Suppress reference events** – enable users to suppress any reference events within a specified period after launch.
- **Net present value** – for determining the net present value (NPV) of either list or net prices for each country over time by including the NPV discount rate; revenue associated with the NPV prices is also reported.

Built-in business intelligence capabilities
- For a scenario, the results may be examined/viewed as:
  - Waterfall chart – grid of country versus date showing price evolution.
    - ✧ User may display either revenue, price or volume in the grid.
    - ✧ Each cell is colored by event type and magnitude.
  - Event result details for each or all countries.
    - ✧ Table provides rules used to determine price at time of event, date of event, price of target countries in the source country reference basket at time of event.
    - ✧ Chart provides price over time by country.

- Users interrogate findings by generating a win/loss report that displays a comparison of the revenue, launch date and price results from two scenarios.
  - The summary table provides a high-level understanding of the total revenue and average ending price difference.
  - The country table provides revenue, launch date and price differences by country; each country name provides a link to another table to examine the evolution of price over time differences for that country.
  - The country by country table. This table provides the details of the reference basket (the price of each target country in the basket and the rule that determines the price of the source country) that reveals the country or countries responsible for price erosion. This view also provides a network diagram of the source country reference basket and a chart of the price over time.
  - The pivotal table is similar to the country by country table but in reverse. This view displays the target country and any source countries that were affected by the target country. The country by country view displays the source country and the target countries that affect the source country revenue.
  - The last view in the win/loss report are four charts summarizing the difference metrics (results) over time.
    - ✧ Average global price over time.
    - ✧ Cumulative global revenue over time.
    - ✧ Average global revenue over time (per period).
    - ✧ Total global revenue over time (per period).

Governance and oversight
Use multiple, built-in features that allow for greater governance and oversight, including:
- Role-based permissions.
- Workflow governance.
- Historical audit features.

Data management
- Use easy-to-use data management capabilities that make implementations faster and easier.
- Getting the IRP and launch plan data into the application is easy using a Microsoft Excel template. Users populate the template with the IRP rules and the launch price, date and volume forecasts for all periods and all countries in the product launch plan. The template is uploaded into the application with a few clicks of the mouse. A log is provided to show what information is new or changed since the last import of the same plan. New plans can be created within the application or uploaded using a previously created plan by exporting the previous plan, making the necessary changes within Excel, then importing the modified plan into an empty plan.

Key Features (continued)

- Navigation within the application is compatible with work-flow – tabs across the top of the user interface follow the order of the workflow, from left to right, from Products to Countries to Plans to Scenarios. Filter options are available on each tab to easily narrow the list of items. The Scenarios tab features a Tree view to easily navigate down a branch from the therapeutic area to the product to the plan and finally to the individual scenarios for the plan. Bookmarks enable a user to create a link to frequently visited branch locations.

Flexible deployment

- Use a flexible implementation methodology – including via the cloud as a SaaS model – for a simplified, fast and easy deployment.
  - The multi-tenant aspect of the application means the hardware is already built.
  - A customer can be granted access to their area of the application in days.
  - Knowledge transfer sessions are provided by expert consultants.
  - Once IRP data is available, the consultants can assist the customer with loading the information into the Excel template for faster time to value.
  - Alternatively, a customer can license IRP data from IHS Markit, whose data is already baked into the application.

Security

- Take advantage of SAS Global Hosting and US Professional Services, which adheres to multiple certification standards to ensure data is secure, including SOC 2/3, TRUSTe Privacy and Safe Harbor. Specifically:
  - Global Hosting and US Professional Services complies with the SSAE 16 Service Organization Control (SOC) standard reporting framework, which focuses on the evaluation of controls in a service organization. A SOC 2 and SOC 3 (SysTrust Level II) engagement was performed in accordance with AT section 101, Attest Engagements, using the guidance provided in *Reporting on Controls at a Service Organization Relevant to Security Availability, Processing Integrity, Confidentiality, or Privacy*. The certification demonstrates that SAS has the processes and controls in place to preserve the integrity and confidentiality of our hosted solutions.

- Global Hosting and US Professional Services has self-certified to the US-EU and US-Swiss Safe Harbor Frameworks operating by the US Department of Commerce with respect to its customer data handling practices and has committed to adhere to the Safe Harbor principles of notice, choice, onward transfer, security, data integrity, access and enforcement.
- Global Hosting and US Professional Services has also been awarded TRUSTe's Privacy Seal signifying that its privacy policy and privacy practices have been reviewed by TRUSTe for compliance with TRUSTe's Trusted Cloud Program Requirements, including transparency, accountability and choice regarding the collection and use of personal information. TRUSTe's certification of Global Hosting and US Professional Services includes ongoing platform monitoring and multilingual privacy dispute resolution services for consumers.
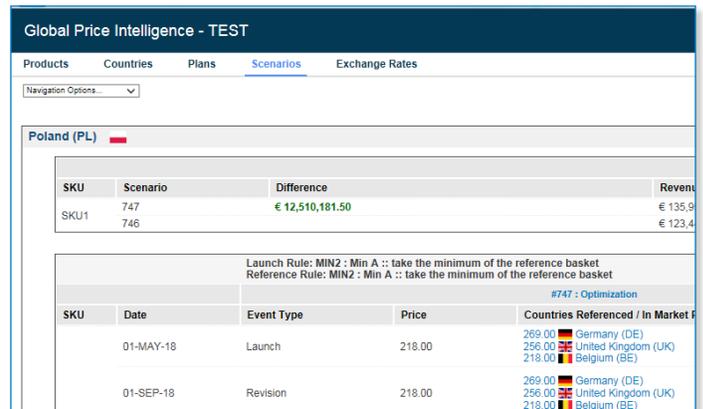
Country report.

TO LEARN MORE »

To learn more about SAS In-Market Revenue Simulation, please visit sas.com/lifesciences.