

Geographic Revenue Exposure (GeoRev) Data and Methodology Guide

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GeoRev Overview

Geographic revenue has historically been difficult to analyze due to companies' non-standard and incomplete reporting. Investors relying solely on this as-reported data are limited in their ability to compare, aggregate or screen exposures across a universe or portfolio of companies. To achieve normalization, FactSet GeoRev captures data through a proprietary four-level geographic classification structure. An estimation algorithm based on GDP weighting and accounting logic is then applied to solve for any non-explicit disclosures. The result is a consistent, accurate, and flexible dataset that can take a company's revenues and break them down into any geographic country or region categories.

As markets become more integrated and companies expand operations beyond their domestic markets, GeoRev provides a new and valuable country factor to help investors discover alpha, model risk exposure, optimize portfolio weighting, and improve fund administration and reporting.

Data Compilation

Sourcing:

A dedicated GeoRev analyst team sources from company annual reports and regulatory filings. In addition to sourcing from the geographic segments' tables, analysts incorporate information from footnotes, ancillary tables and in-text disclosures in order to capture the most granular and precise geographic revenue information possible.

This rigorous, well-defined collection methodology is essential to provide the data foundation onto which the downstream algorithmic estimation is applied.

Data Capture:

GeoRev analysts, aided by advanced data collection and management software, capture the data within a proprietary four-tiered geographic classification structure consisting of 280 countries, areas, regions, and super-regions. The system is flexible and enables allocation of figures to multiple regions/countries, as well as exclusion of countries from parent regions. The software also features multiple built-in quality and error checking controls.

Estimation to Undeclared Regions and Countries:

Once the GeoRev taxonomy has been populated with a company's known regional and country-level exposures, the estimation algorithm uses this data, along with GDP values from IMF and World Bank, to allocate revenues to relevant countries and regions for which exposures were not explicitly reported. Scaling limiters are applied to ensure estimates align with accounting requirements.

All estimates are accompanied by three metrics that provide transparency into the reliability of the estimation:

Certainty Rank – Indicates the relative reliability of estimates. Ranks are based on multiple factors related to the reported information and the algorithmic estimation. Ranks range from 1 to 80, with 1 indicating the lowest certainty in the estimate, and 80 indicating a reported exposure. Certainty rank factors include but are not limited to:

- Reporting standards of the country where the source annual report/filing was filed
- A company's previous years' country-level reporting
- Reliability of country GDP data
- Proportion of total report value that must be estimated

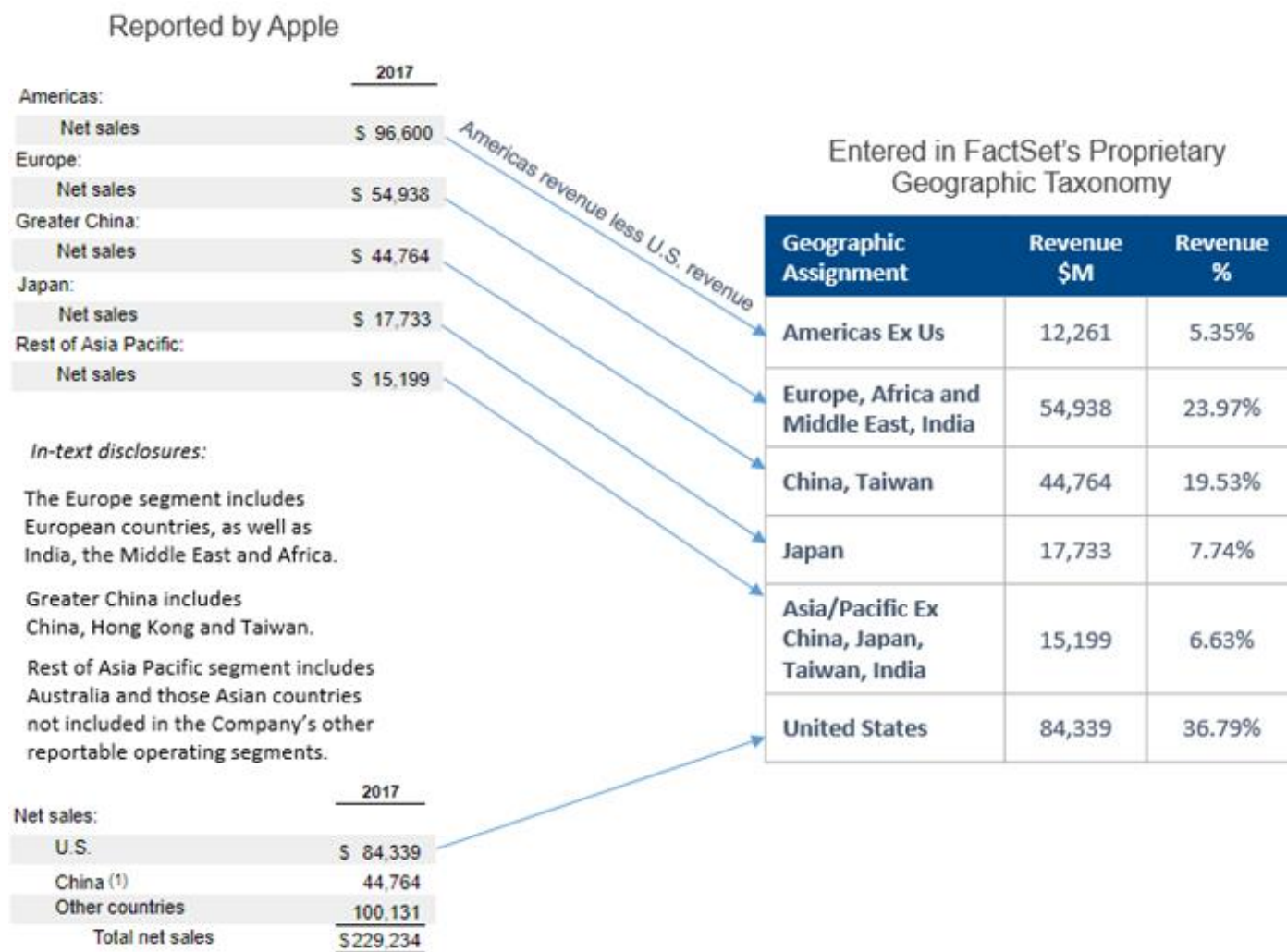
Certainty Class – Designated classes from A (highest) to E (lowest) based on Certainty Rank:

Class	Minimum Certainty Rank	Maximum Certainty Rank
A	71	80
B	57	70
C	42	56
D	24	41
E	1	23

Confidence Factor - A statistical measure of the trustworthiness of the estimates based on inputs. The Confidence Factor is not fixed and is both region and stock specific. Values range from 0.5 to 1.0, with 1.0 signifying a reported value.

Note: Certainty Rank, Certainty Class, and Confidence Factor are company-specific i.e. they are calculated independently for each company's annual filing/report.

Example of Sourcing, Data Capture, Normalization and Estimation – Apple, Inc. 2017:



After capturing the data by the most granular disclosures, FactSet GeoRev applies a nominal GDP weighted algorithm to estimate all country level exposures.

Region	Layer	Revenue %	Certainty	Certainty	Confidence
			Rank	Class	Score
Asia/Pacific	1	36.00	77	A	0.99857
Asia	2	32.49	73	A	0.998895
Far East	3	29.42	77	A	0.999754
Hong Kong	4	0.52	71	A	0.991397
Japan	4	7.74	80	A	1
Macau	4	0.07	62	B	0.995558
Mainland China	4	18.04	59	B	0.994016
Mongolia	4	0.01	45	C	0.996725
Republic of Korea (South Korea)	4	1.60	40	D	0.996599
Singapore	4	0.31	69	B	0.996845
Taiwan	4	0.90	64	B	0.98999
Vietnam	4	0.23	68	B	0.996768
Indian Region	3	3.07	36	D	0.990667
Bangladesh	4	0.27	56	C	0.997077
Cambodia	4	0.02	43	C	0.998187
India	4	2.11	32	D	0.987845
Laos	4	0.02	45	C	0.997613
Myanmar	4	0.08	43	C	0.998032
Nepal	4	0.02	43	C	0.99869
Sri Lanka	4	0.09	33	D	0.996516
Thailand	4	0.46	46	C	0.99641
Oceania	2	3.48	39	D	0.996527
Australia/New Zealand	3	1.67	42	C	0.996561
Australia	4	1.46	41	D	0.996548
New Zealand	4	0.21	53	C	0.996654
Pacific Islands	3	1.81	37	D	0.996495
Brunei Darussalam	4	0.01	61	B	0.997653
Indonesia	4	1.09	31	D	0.996475
Malaysia	4	0.33	44	C	0.996347
Papua New Guinea	4	0.02	61	B	0.997526
Philippines	4	0.35	50	C	0.996587
Asia/Pacific Unallocated Region	2	0.03	1	E	0
Asia/Pacific Unallocated Area	3	0.03	1	E	0
Asia/Pacific Unallocated Revenue	4	0.03	1	E	0

Reported Exposure

While most companies are required to disclose their geographic revenue, they often have their own geographic definitions. This becomes a challenge for systematic geographic analysis, such as across sectors or regions. GeoRev solves this issue through its ability to standardize and estimate revenue exposures. This becomes especially valuable to compare companies' geographic exposure, reveal portfolio and index regional exposures, and improve fund administration and reporting.

Data Maintenance

FactSet maintains and updates GeoRev on an ongoing basis as companies release their annual financial filings throughout the calendar year. Geographic revenues for newly listed companies and IPOs are based on information from the prospectus.

Nominal GDP data in US dollars is obtained from the IMF's World Economic Outlook Database and the World Bank annually in April. Estimates of percent geographic exposure to countries and regions are calculated by matching the latest disclosed revenues by geography to the nominal GDP weights. Each May, when FactSet incorporates the GDP values released in April, estimated revenue figures are updated where the underlying GDP figures have been revised.

Coverage

GeoRev currently covers over 49,000 publicly traded companies and over 17,000 government entities* around the world with point-in-time historical data on companies going back as far as 2003 for U.S. coverage and 2007 for international coverage.

*as of March 2021

Data Delivery

LiveData Data Feed: Available in any supported SQL RDBMS with self-synchronizing web service delivery on demand and updates delivered on the client's schedule.

Standard DataFeed: FactSet's Standard DataFeed GeoRev package is global in scope and provides full history. The GeoRev package is fully compatible with all other Standard DataFeed packages, including Fundamentals, Estimates, EDM, Ownership, etc. Comprehensive schema descriptions provide a blueprint to help you maintain a local copy of FactSet's proprietary content. Take advantage of our loader to download files and update local databases based on your needs.

*Data feed delivery offers the benefits of the point in time nature of the data records.

Workstation: GeoRev Teaser Report is available for all premium level Workstation clients (current data only). Global and current only codes are included in premium Workstations. GeoRev with History and GeoRev in Portfolio Analysis (PA) are available as add-on subscriptions.

FAQ

What are Certainty Rank and Confidence Score?

The Certainty Rank takes both the information at its disposal and the reliability of the 'known' information into account and therefore is a better figure. Examples of additional Certainty Rank factors not taken into account by Confidence Score include reliability of the source data (based on country) and reliability of the underlying GDP figures.

The Confidence Score is based on how much information the GeoRev estimation algorithm had at its disposal when making an estimate.

Certainty Ranks are more evenly distributed than Confidence Scores, which is clustered near 1.0. We advise Confidence Score to be used only as a tiebreaker when two countries have the same Certainty Rank.

What are scaling limiters?

Scaling limiters apply logic to prohibit country estimates from being out of agreement with financial reporting requirements, i.e. high enough that they would have had to be reported. This tended to be an issue with large GDP countries such as China, for example when the reported exposure was to the Super-Region (Asia-Pacific).

What is the source of the underlying country's GDP?

GDP data is obtained from the IMF's World Economic Outlook Database or The World Bank.