

Research

Industry Classification Benchmark (ICB) reclassification

FTSE
Russell

Expanded and improved

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Executive summary

- ICB enhanced its structure to reflect the evolution of the global economy and to address the needs of today's investment professionals.
- The changes created a separate classification for Real Estate, expanded the Telecommunications grouping, adopted a new Consumer Discretionary and Consumer Staples framework and renamed ICB Oil and Gas to ICB Energy.
- Giving standalone status to Real Estate stocks recognizes the scale and prominence of this rapidly growing asset class.
- The new Telecommunications grouping combines traditional telecom services companies with related equipment and cable TV providers, reflecting the evolving investment implications of the global convergence of communications, media and technology.
- The restructuring of consumer stocks into Consumer Discretionary and Consumer Staples classifications draws a finer distinction between the cyclical and noncyclical (or defensive) economic sensitivities and risk/return characteristics of each stock group.

Overall, the restructured ICB provides far greater details at the Sector (Level 3) and Subsector (Level 4) levels. For example, the new Consumer Discretionary framework encompasses 21 more sectors than the previous framework, offering greater specificity across different types of specialty retailers.

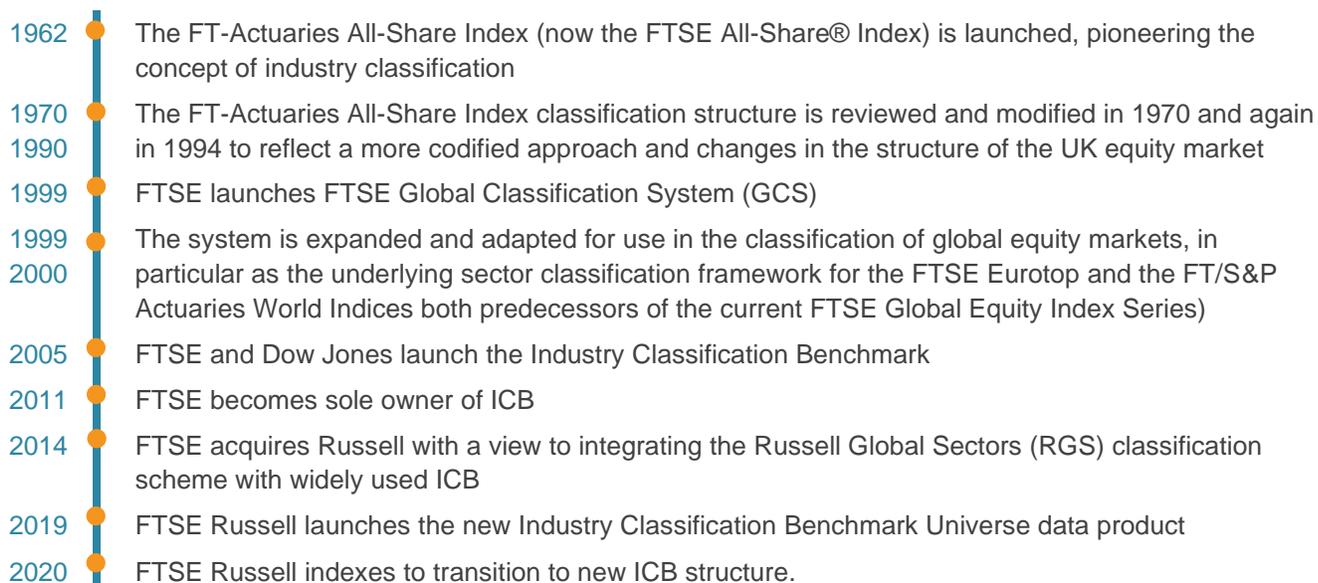
Background on Industry Classification Benchmark (ICB®)

The Industry Classification Benchmark is a globally recognized standard for categorizing companies and securities operated and managed by FTSE Russell. ICB is widely used and adopted by various financial institutions such as London Stock Exchange, Johannesburg Stock Exchange, Athens Exchange, SIX Swiss Exchange, Cyprus Stock Exchanges, NYSE Euronext, NASDAQ OMX, Borsa Italiana, Boursa Kuwait, and CRSP, STOXX, and FTSE Russell indexes.

ICB provides four levels of classification: Industry (level 1), Supersector (level 2), Sector (level 3) and Subsector (level 4).

Each company in the ICB universe is allocated to the Subsector that most closely represents the nature of its business. This allocation is determined by the company's primary source of revenue and other publicly available information.

Historical timeline

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- A vertical timeline with a blue line and orange dots marking key events in the history of the Industry Classification Benchmark (ICB) from 1962 to 2020.
- 1962 • The FT-Actuaries All-Share Index (now the FTSE All-Share® Index) is launched, pioneering the concept of industry classification
 - 1970 • The FT-Actuaries All-Share Index classification structure is reviewed and modified in 1970 and again in 1994 to reflect a more codified approach and changes in the structure of the UK equity market
 - 1990
 - 1999 • FTSE launches FTSE Global Classification System (GCS)
 - 1999 • The system is expanded and adapted for use in the classification of global equity markets, in particular as the underlying sector classification framework for the FTSE Eurotop and the FT/S&P Actuaries World Indices both predecessors of the current FTSE Global Equity Index Series)
 - 2000
 - 2005 • FTSE and Dow Jones launch the Industry Classification Benchmark
 - 2011 • FTSE becomes sole owner of ICB
 - 2014 • FTSE acquires Russell with a view to integrating the Russell Global Sectors (RGS) classification scheme with widely used ICB
 - 2019 • FTSE Russell launches the new Industry Classification Benchmark Universe data product
 - 2020 • FTSE Russell indexes to transition to new ICB structure.

Industry Classification Benchmark (ICB) reclassification: expanded and improved

FTSE Russell enhanced its Industry Classification Benchmark structure to reflect the evolution of the global economy and address the needs of today's investment professionals. The main changes are as follows:

- Creation of a separate Real Estate Industry
- Expansion of the Telecommunications Industry
- Adoption of a new Consumer Discretionary/Staples framework
- Renaming of ICB Oil and Gas to ICB Energy

Consequently, the number of groupings increased across the four levels of classification. The new ICB framework assigns individual companies to aggregate industry groupings, and with increasing detail, to Sectors and Subsectors that represent companies' specialist areas of business. These enhancements were designed to address the investing demands of an ever-changing global equity market and to accommodate future changes, as ICB continues to expand beyond its current coverage. The added specificity provides greater flexibility for portfolio management and strategy, and helps identify new investment opportunities.

Exhibit 1

Level groupings	Classification groups	Current ICB number groupings (effective July 1, 2019)	Legacy ICB number of groupings	Change
1	Industry	11	10	+1
2	Supersector	20	19	+1
3	Sector	45	41	+4
4	Subsector	173	114	+59

What isn't changing: ICB robust governance process

FTSE Russell employs a robust governance framework to approve new indexes and methodology changes for existing indexes, and the development and review of the new ICB follows the same diligent standards. The framework incorporates the London Stock Exchange Group's three lines of defence risk management. It combines specialist decision-making bodies with members drawn from executive management (first line), an oversight committee with members drawn from risk and compliance (second line) and audit management (third line). These committees are supported by a set of independent external advisory committees composed of market practitioners who have specialist expertise on benchmark methodologies, input data and the underlying market¹.

Collaboration with clients and industry specialists

Through a public consultation, FTSE Russell solicited feedback from more than 50 clients. Our client groups were comprised of senior investment professionals, traders, index providers and analysts from around the world, all with deep technical expertise. Each one was asked to provide their views on 42 questions, ranging from very specific industry classification preferences, to issues on implementation and naming convention. Feedback was subsequently reviewed and debated at FTSE Russell Industry Classification Advisory Committee meetings.

¹ https://research.ftserussell.com/products/downloads/FTSE_Russell_Governance_Framework.pdf

What's new

Real Estate

The proposal to give Real Estate standalone status was a natural step in the ICB's evolution. Real Estate became the 11th grouping at the Industry and Supersector levels (1 and 2) and distinguishes between Real Estate Investment Trusts (REITs) and Real Estate Investment and Services at the Sector level (3).

The new framework provides more detail at the Subsector level (4), drawing distinctions between real estate services companies and real estate holding and development companies. It also distinguishes between 11 different REITs property types, including the newly added Health Care and Storage REITs. This refined categorization addresses clients' need for a high degree of specificity, when categorizing and analyzing REITs for investment and in product design.

NOTE: Mortgage REITs, which derive revenue from real estate financing rather than from real estate itself, remain in Financials, but are distinct from Finance and Credit Services at the Sector level (3).

"These changes to ICB will appropriately recognize the growing importance of stock exchange-listed real estate companies, including REITs, engaged in the ownership, leasing and management of real estate."

John Worth, executive vice president, research and investor outreach, Nareit

Exhibit 2

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Real Estate	Real Estate	Real Estate Investment and Services	<ul style="list-style-type: none"> Real Estate Services Real Estate Holding and Development
		Real Estate Investment Trusts (REITs)	<ul style="list-style-type: none"> Equity REIT: Industrial Equity REIT: Residential Equity REIT: Retail Equity REIT: Office Health Care REITs Hotel and Lodging REITs Infrastructure REITs Storage REITs Timber REITs Other Specialty REITs Diversified REITs

The decision to give Real Estate standalone status was supported by the consultation responses and from the FTSE EPRA/Nareit and ICB advisory committees. The FTSE EPRA/Nareit Global Real Estate Index Series – produced and maintained in partnership with the European Public Real Estate Association (EPRA), the National Association of Real Estate Investment Trusts (Nareit®) and FTSE Russell's regional investment advisory committees – is the most comprehensive and commonly used index for the REIT and globally listed property market.

"ICB's elevation of Real Estate as its 11th Industry reflects the growth of listed real estate, which is driven by the introduction of REITs globally and long-term returns. The reclassification confirms the merits of listed real estate as a standalone asset class."

Ali Zaidi, director of research and indices at the European Public Real Estate Association (EPRA)

Telecommunications

The new ICB structure maintains Telecommunications at the Industry and Supersector levels (1 and 2). However, it has expanded with the additions of Telecommunications Equipment companies, such as Cisco and Nokia (previously in Technology Industry), and Cable Television Services firms, such as Comcast and Time Warner (previously in Consumer Services Industry). The latter companies provide media content to televisions or computers via cable broadband or wireless networks in direct competition with the traditional telecommunications companies. The new framework also captures the global trend of telecommunication service providers merging regional, wireless, and fixed-line services to remain competitive and the integration of related communication infrastructure and equipment providers.

Exhibit 3

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Telecommunications	Telecommunications	Telecommunications Service Providers	<ul style="list-style-type: none"> • Telecommunications Services • Cable Television Services
		Telecommunications Equipment	<ul style="list-style-type: none"> • Telecommunications Equipment

There was broad recognition that the Telecommunications classification needed to be reassessed. Several issues resonated in the feedback from clients and consultants:

- The telecom services stock group is small and dominated by two US conglomerates (AT&T and Verizon) with maturing core businesses.
- The global telecom industry has also undergone dramatic transformation, fuelled by rapid technological advances, shifts in consumer usage and intensifying competitive threats, from cable and satellite operators and other new entrants.
- In response, telecom companies worldwide have been acquiring rivals and adjacent businesses to improve service and add new features.
- As the business lines across media, communications and content continue to converge, the telecom industry is likely to remain a critical force for growth, innovation and disruption globally.

The FTSE Russell Industry Classification Advisory Committee evaluated and debated several options, including whether to 1) integrate Telecommunications into Utilities, 2) merge it with Technology, or 3) build a framework that captured the evolving investing dynamics of the Telecommunications-Media-Technology (TMT) convergence, which is commonly referenced by investment professionals.

Returns between Telecommunications and Utilities are highly correlated, and they share many defensive characteristics—notably relatively stable sources of revenue and above-average dividend pay-outs. However, several clients highlighted the telecom industry's growth and influence outside of the US, notably in Europe and Japan, as a reason to push for other options.

Exhibit 4

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Utilities	Utilities	Electricity	<ul style="list-style-type: none">• Alternative Electricity• Conventional Electricity
		Gas, Water and Multi Utilities	<ul style="list-style-type: none">• Multi Utilities• Gas Distribution• Water
		Waste and Disposal Services	<ul style="list-style-type: none">• Waste and Disposal Services

Finally, FTSE Russell considered a framework that represents the Telecommunications-Media-Technology (TMT) area. However, feedback from client consultations and the advisory committees recommended against broadening the Telecommunications Industry to include traditional media companies. This maintains a clear distinction between companies that create media content (e.g., Netflix and AMC Network remain in Consumer Discretionary) and online platforms that own or manage the infrastructure to distribute content (e.g., Google, Facebook, and Twitter remain in Technology).

In essence, FTSE Russell and the FTSE Russell Industry Classification Advisory Committee opted for a framework that combines telecommunication service providers that own or manage the infrastructure to distribute media content with companies that sell and service the equipment that enable these services (e.g., routers, switches, teleconferencing equipment). FTSE Russell believes this framework better represents the evolving investing dynamics of the Telecommunications industry.

Consumer Discretionary and Consumer Staples

It has become increasingly common for investors to separate stocks into cyclical and defensive categories as a way to identify opportunities and manage risks at different stages of economic cycles. The new Consumer Discretionary/Consumer Staples Industry classification (Level 1) reflects this perspective. The delineation has become an investment industry standard, with 95% of all consumer-sector-focused mutual funds and ETFs globally based on one of the two classifications.

Consumer Staples companies provide essential everyday products and services, whose sales are typically not impacted by the economic environment. Their stocks offer defensive qualities and tend to be less volatile, even when markets are risk averse. Food, beverage, tobacco, and personal care product companies and grocers, such as Campbell Soup Company, Nestle, Ambev, Tesco, and Unilever fit this description. By contrast, sales and profits of Consumer Discretionary companies tend to ebb and flow with the economic cycle, and the stocks typically perform more in line with market growth expectations and risk appetites. Examples include automakers, such as Toyota, Honda, Volkswagen and Daimler AG, and retailers, such as Amazon, Wal-Mart and JD.com.

Further specificity between the two groups is provided at the ICB Supersector (2), Sector (3) and Subsector (4) levels has been added. For example, the Consumer Services Sector is divided into seven new Subsectors, including Education Services, Funeral Parlors and Cemeteries and Storage Facilities.

The new ICB Consumer Discretionary and Consumer Staples industries are derivations of their predecessors: Consumer Services and Consumer Goods. The bulk of the Consumer Services was assigned to Consumer Discretionary; most Consumer Goods companies now reside in Consumer Staples.

Exhibit 5

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Consumer Discretionary	Automobiles and Parts	Automobiles and Parts	<ul style="list-style-type: none"> • Auto Services • Tires • Automobiles • Auto Parts
	Consumer Products and Services	Consumer Services	<ul style="list-style-type: none"> • Education Services • Funeral Parlors and Cemeteries • Printing and Copying Services • Rental and Leasing Services Consumer • Storage Facilities • Vending and Catering Services • Miscellaneous
		Household Goods and Home Construction	<ul style="list-style-type: none"> • Home Construction • Furnishings • Household Appliance • Household Equipment and Products
		Leisure Goods	<ul style="list-style-type: none"> • Consumer Electronics • Electric Entertainment • Toys • Recreational Products • Recreational Vehicles and Boats • Photography
		Personal Goods	<ul style="list-style-type: none"> • Clothing and Accessories • Footwear • Luxury Items • Cosmetics
	Media	Media	<ul style="list-style-type: none"> • Entertainment • Media Agencies • Publishing • Radio and TV Broadcasters
	Retail	Retail	<ul style="list-style-type: none"> • Diversified Retailers • Apparel Retailers • Home Improvement Retailers • Specialty Retailers
	Travel and Leisure	Travel and Leisure	<ul style="list-style-type: none"> • Airlines • Travel and Tourism • Casinos and Gambling • Hotels and Motels • Recreational Services • Restaurants and Bars

Exhibit 6

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Consumer Staples	Food, Beverage and Tobacco	Beverages	<ul style="list-style-type: none"> • Brewers • Distillers and Vintners • Soft Drinks
		Food Producers	<ul style="list-style-type: none"> • Farming, Fishing, Ranching and Plantations • Food Products • Fruit and Grain Processing • Sugar
		Tobacco	<ul style="list-style-type: none"> • Tobacco
	Personal Care, Drug and Grocery Stores	Personal Care, Drug and Grocery Stores	<ul style="list-style-type: none"> • Food Retailers and Wholesalers • Drug Retailers • Personal Products • Nondurable Household Products • Miscellaneous Consumer Staples

Other Notable Enhancements

Energy

Additional enhancements include the renaming of the current ICB Oil and Gas industry to Energy, under which Subsectors are now grouped as Oil, Gas and Coal or Alternative Energy. The ICB Coal Subsector has also been added from the Basic Materials industry.

The ICB Subsector groupings have been expanded to differentiate their business activities. Consequently, the current Exploration and Production ceased as a Subsector and three new Subsectors have been created in its place:

- **Crude Oil Producers** include companies that are engaged in crude oil exploration, drilling, production and supply (on land).
- **Offshore Drilling and Other Services** include companies that primarily explore and drill for oil and gas in offshore areas.
- **Oil Refining and Marketing** include companies whose primary business is engaged in the refining and marketing of petroleum products (downstream).

Exhibit 7

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Energy	Energy	Oil, Gas and Coal	<ul style="list-style-type: none"> • Integrated Oil and Gas • Oil: Crude Producers • Offshore Drilling and Other Services • Oil Refining and Marketing • Oil Equipment and Services • Pipelines • Coal
		Alternative Energy	<ul style="list-style-type: none"> • Alternative Fuels • Alternative Energy Equipment

Consumer Digital Services

The ICB Internet Subsector is renamed and redefined as the Consumer Digital Services Subsector within the Technology Industry, to classify companies involved in digital platforms that generate revenues from advertising, content delivery and other virtual products related to consumers.

Although companies within this Subsector may serve consumers, the distinction is that revenues are derived primarily from providing technology services.

Exhibit 8

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Technology	Technology	Software and Computer Services	<ul style="list-style-type: none"> • Computer Services • Software • Consumer Digital Services
		Technology Hardware and Equipment	<ul style="list-style-type: none"> • Semiconductors • Electronic Components • Production Technology Equipment • Computer Hardware • Electronic Office Equipment

Financial Data Providers and Transaction Processers

In mid-2018, a classification challenge for an IPO prompted a reassessment of how to classify transaction processing services companies (i.e., whether they belonged in Industrials, Financials or Technology).

In the initially proposed ICB structure, all forms of financial data/information providers and transaction data processors were grouped under the Financial Data and Systems Subsector. After extensive internal analysis and consultation with the Advisory Committee, it was decided that the new ICB Financial Data and Systems Subsector would be divided into three Subsectors within the Financials and Industrials Industry groups to better define specific industry business segments.

Under the revised proposal, transaction processing services and credit risk monitoring services moved into Industrials, while financial data providers remain in the Financials Industry. The following changes have been implemented:

- Renamed Financial Data Providers (formerly Financial Data and Systems) Subsector within the Financials industry to include companies that provide financial decision support tools for investment institutions. Examples include Morningstar, Thomson Reuters, S&P Global and MSCI.
- Renamed Professional Business Support Services (formerly, Back Office Support, HR and Consulting) Subsector within Industrials to include credit-risk monitoring companies. Examples include Equifax, Cerved, Experian and FICO. The rationale behind the move was that credit monitoring companies operate databases designed for businesses and merchant clients to make better decisions regarding customers' credit and risk ratings. The data and services they provide are marketed across a wide range of industries, including financial services, mortgage, retail, telecommunications, utilities, automotive, brokerage, healthcare and insurance, as well as government agencies.

Exhibit 9

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Financials	Banks	Banks	<ul style="list-style-type: none"> • Banks
	Financial Services	Finance and Credit Services	<ul style="list-style-type: none"> • Consumer Lending • Mortgage Finance • Financial Data Providers
		Investment Banking and Brokerage Services	<ul style="list-style-type: none"> • Diversified Financial Services • Asset Managers and Custodians • Investment Services
		Mortgage Real Estate Investment Trusts	<ul style="list-style-type: none"> • Mortgage REITs: Diversified • Mortgage REITs: Commercial • Mortgage REITs: Residential
		Closed End Investments	<ul style="list-style-type: none"> • Closed End Investments
		Open End and Miscellaneous Investment Vehicles	<ul style="list-style-type: none"> • Open End and Miscellaneous Investment Vehicles
	Insurance	Life Insurance	<ul style="list-style-type: none"> • Life Insurance
		Non-life Insurance	<ul style="list-style-type: none"> • Full Line Insurance • Insurance Brokers • Reinsurance • Property and Casualty Insurance

Transaction Processing Services

The new Transaction Processing Services Subsector was created within Industrials to include companies that engage in any aspect of global payment services. These include the routing of payment information and related data services that facilitate the authorization, clearing, and settlement of transactions. For example, Mastercard, VISA, World Pay, Global Payments, PayPal and Square all belong into this category.

Historically, debit/credit transaction processing service companies' fortunes were intrinsically linked to those of financial institutions. However, the pre-paid and commercial application segments are growing, and the client base has extended to underbanked individuals, corporations, and governments.

The majority of new entrants in this segment are the acquirer processors that closely work with commercial businesses and merchants. New entrants are increasing competition through the provision of additional support services, such as online check-out and client reports. The support activities offered closely align with the activities covered under the Industrial Support Services sector.

Cannabis Producers

With the growing acceptance and recent decriminalization of marijuana in some nations, the demand for investing in specific marijuana companies has been rising.

In July 2018, Tilray Inc. became the first marijuana producer to list on a major US exchange. There was no clear destination for this company type under the current and proposed ICB structure, and marijuana producers were classified under the Tobacco or the Farming, Fishing and Plantations Subsectors.

There was agreement that a separate grouping for all companies engaged in the cultivation, processing and distribution of marijuana plants was needed, but the committee was initially divided on whether these companies belonged within the Health Care or Consumer Staples industries.

The final approved proposal was to create the new Cannabis Producers Subsector under the Health Care industry. The rationale behind the final decision was that the legality of recreational usage is still widely in question globally, whereas legal medicinal use is more accepted. FTSE Russell will continue to assess recreational marijuana, and other marijuana related businesses for future structural enhancements.

Exhibit 10

Industry (Level 1)	Supersector (Level 2)	Sector (Level 3)	Subsector (Level 4)
Health Care	Health Care	Health Care Providers	<ul style="list-style-type: none"> • Health Care Facilities • Health Care Management Services • Health Care Services • Health Care: Misc.
		Medical Equipment and Services	<ul style="list-style-type: none"> • Medical Equipment • Medical Supplies • Medical Services
		Pharmaceuticals and Biotechnology	<ul style="list-style-type: none"> • Biotechnology • Pharmaceuticals • Cannabis Producers

Definition enhancements to clarify ICB placement

In addition to the structural changes, enhancements have been made to ICB descriptions and definitions to provide transparency to the underlying research process. Definition enhancements include:

- The definitions for the **Aerospace**, **Defense**, and **Cable Television Services** Subsectors have been refined to clarify placement of the manufacturers and service providers within them.
- Clarification for the Distributed Ledger Technology (DLT) and cryptocurrency companies. Depending on the product and services, the definitions for the **Computer Services**, **Computer Hardware** and Investment Services Subsectors have been updated to include reference to DLT and cryptocurrency.
- New entrants “E-Sport” event providers have been added to the definition for the **Recreational Services** Subsectors.
- Distinguish between leisure travel and transportation services (within the Consumer Discretionary Industry) versus commercial and mass public transportation services (within the Industrials Industry).
- Distinguish between Contracted Mining Services for minerals and basic metals mining companies (within the **Materials** industry) and servicing oil and gas companies (within the **Energy** Industry).

Conclusion

As the official sector classification system for FTSE Russell indexes, ICB provides a standardized framework to research individual areas of the economy, conduct peer group analysis and classify companies on both a top-down and bottom-up basis. It can also be used to track the performance and evolution of Industries, Supersectors, Sectors, Subsectors and companies over time.

To be useful for these purposes, it is important for a classification scheme to adapt and change as industries evolve and new forms of economic activity rise to prominence. As such, the ICB enhancements are designed to reflect the evolution of the global economy. They were developed using FTSE Russell’s robust governance framework, resulting in restructured classifications and finer distinctions for more specificity where needed.

The enhancements ensure that ICB continues to not only meet the needs of today’s investment professionals, but also accommodate future enhancements, as FTSE Russell expands its capabilities beyond the current coverage.

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