



Leadership Development in Risk Management

Insights from the 2017 Global Practice Analysis

Latin American Risk Congress

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GARP is an Independent Non-Partisan Association

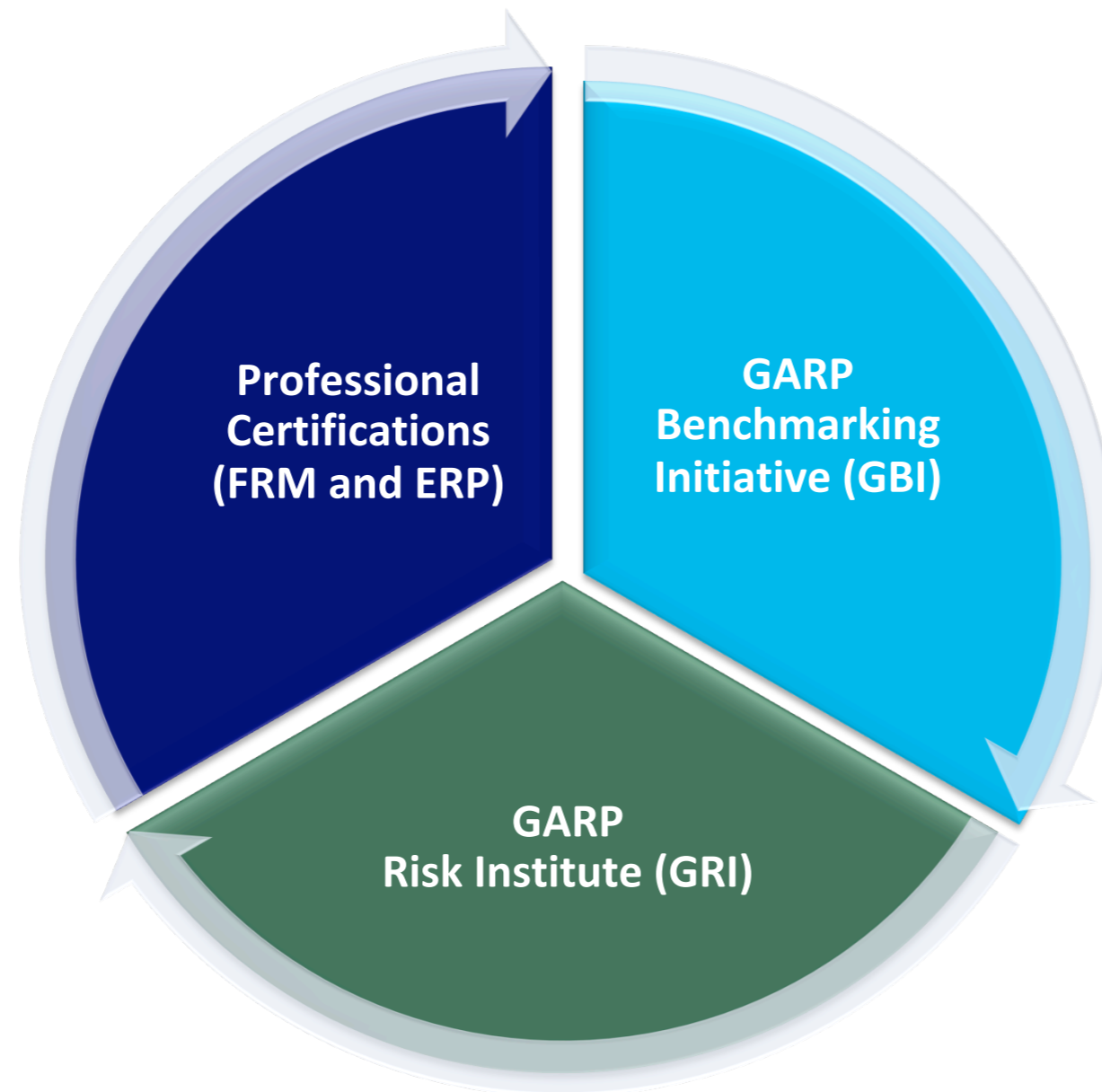
Our mission is to advance the risk management profession through education, research and the promotion of best practices globally.



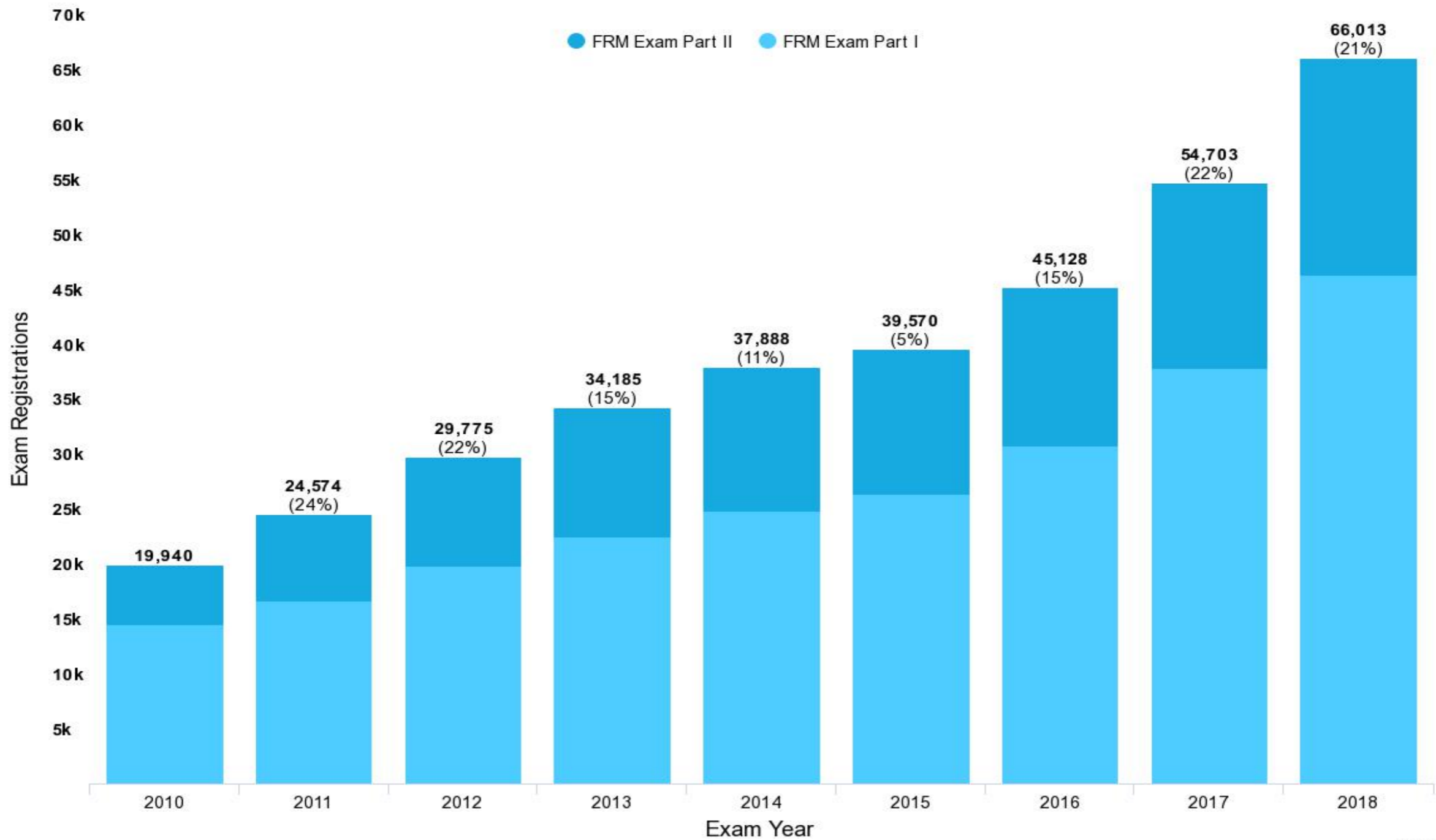
- Founded 1996
- Not-for profit
- 150,000 members
- 195 Countries
- Globally recognized certifications (FRM, ERP) foster meritocracy in the risk profession
- Quality oversight (21 member Board)
- Practitioner Orientated
- Respected objective industry convener

GARP DOES NOT LOBBY OR ENGAGE IN CONSULTING ACTIVITIES

Three Pillars Support the Mission



Global Interest in Risk Certification is Strong and Growing



Highcharts.com

Risk Management Ecosystem

Risk Management Ecosystem - “GRC”

- **Governance**
 - Board of Directors and CEO set the tone
 - Risk committee defines strategic risk objectives
 - CRO reports to or is part of the risk committee
- **Risk Management**
 - Risk takers
 - Recommend risk limits
 - Adjust risk exposures based on market conditions and feedback from risk managers
 - Risk managers
 - Approve risk limits
 - Monitor, measure and report risk, validate models, communicate results
- **Compliance**
 - Adherence to internal and external rules and procedures
 - Government oversight and regulation (Basel Framework)
 - Accounting standards (GAAP/IFRS)
 - Legal documentation and contracts (ISDA)

Internal Stakeholders

- Risk management
 - Market, credit, operational, and enterprise risk
- Model control
 - Construction, validation and backtesting
- Treasury
 - Analyze the firm's funding and liquidity policies and exposures
- Regulatory compliance
 - Fundamental understanding of Basel regulations
- Audit
 - Analyze adequacy of firm's risk controls and processes

External Players

- Government regulatory agencies
 - Global standards – Basel
 - Local markets
- Financial market exchanges
 - Trading. price transparency and market liquidity
 - Central clearing
- Accounting and consulting firms
 - Audit and regulatory compliance
 - Risk-based technology solutions
- Academic Institutions
 - Risk education and research

Developing Future Leaders in Risk Management

- Knowledge
 - Required to perform essential risk management tasks
- Experience
 - Markets, current trends and historical context
- Professional development
 - Communication skills are critical
 - Continuing education – lifelong learning

Insights from GARP's Global Practice Analysis

What is a Global Practice Analysis?

“To identify the knowledge and skills necessary for competent practice, it is important to complete an analysis of the actual work performed and then document the tasks and responsibilities that are essential to the occupation or profession of interest.”

- Taking a fresh look at the practice of financial risk management to understand:
 - Who financial risk managers are
 - What specific tasks they perform
 - What critical knowledge they need
- Applying the results to:
 - Inform FRM exam content and curriculum
 - Help GARP better design offerings and build programs of interest to the risk management community (e.g., webinars, Convention tracks)
 - Inform GARP’s Continuing Professional Development (CPD) initiatives

Survey Structure and Demographics

Domains of Practice – Tasks Risk Managers Perform

49 Process-Based Tasks Across 6 Domains

Financial Risk Framework (9 tasks)

Financial Risk Identification (5 tasks)

Financial Risk Measurement and Modeling (12 tasks)

Financial Risk Monitoring (7 tasks)

Financial Risk Management (10 tasks)

Financial Risk Reporting (6 tasks)

Knowledge to Perform Risk Management Tasks

174 Knowledge Points
Foundational (89 knowledge points across 10 areas)
Overview of financial risk management (4 knowledge pts)
Asset classes and financial instruments (12 knowledge pts)
Institutional Framework of Markets (5 knowledge pts)
Regulatory Environment (4 knowledge pts)
Accounting (9 knowledge pts)
Economics (8 knowledge pts)
Statistical and probability analysis/econometrics (9 knowledge pts)
Financial mathematics (24 knowledge pts)
Modeling (10 knowledge pts)
Technology (4 knowledge pts)
Non-Foundational (85 knowledge points across 5 areas)
Market Risk (12 knowledge pts)
Liquidity and Treasury Risk (17 knowledge pts)
Credit Risk (27 knowledge pts)
Operational Risk (17 knowledge pts)
Enterprise Risk (12 knowledge pts)

Survey Rating Scales

- **Domains**

- Importance of domain to the profession of financial risk management in general
(Not, Somewhat, Moderately, Extremely)
- Percentage of time respondent spends performing tasks in the domain
(0% to 100%)

- **Tasks**

- Importance of each task to respondent's own work
(Not, Somewhat, Moderately, Extremely)
- Point of Acquisition when a financial risk manager should be able to perform each task
(Not necessary, <2 yrs., 2 to 5 yrs., 6 to 10 yrs., >10 yrs.)

- **Knowledge**

- Importance of each knowledge area to respondent's own work
(Not, Somewhat, Moderately, Extremely)
- Point of Acquisition when a financial risk manager should acquire the knowledge
(Not necessary, <2 yrs., 2 to 5 yrs., 6 to 10 yrs., >10 yrs.)

High Level Demographics

- 3,210 respondents with a wide range of experience
- 52% FRMs
- 125 countries
 - Top 10: US, China, India, UK, Hong Kong, Canada, Switzerland, Singapore, Spain, Germany
 - Respondents from LATAM include Brazil, Columbia, and Peru
- 71% held Masters, or higher, degrees
- Many held other certifications (e.g., CFA, CPA, ERP, ACCA, CAIA)
- 3:1 ratio between male to female survey participants

Top 10 Business Types and Job Titles

	Top 10 Business Types (100%)	Top 10 Job Titles (85%)
1	Bank (43%)	Risk manager (30%)
2	Consulting (17%)	Analyst (24%)
3	Asset management (16%)	Consultant (11%)
4	Broker/dealer (6%)	Portfolio manager (5%)
5	Insurance (6%)	Auditor (3%)
6	Government (5%)	Product manager (3%)
7	Nonfinancial corporate (4%)	Trader (3%)
8	Academia or research organization (3%)	Information technology (2%)
9	Energy (1%)	Model developer (2%)
10	Other (1%)	Regulator/examiner (2%)

- 76% from banks, consulting firms, or asset management companies
- 70% were risk managers, analysts, consultants or portfolio managers

Years of Experience

	Years of Experience	
	Financial Risk Management	Financial Services Industry
Up to 2 yrs.	22%	11%
2 to 5 yrs.	37%	28%
6 to 9 yrs.	21%	24%
10 to 15 yrs.	12%	20%
More than 15 yrs.	7%	17%

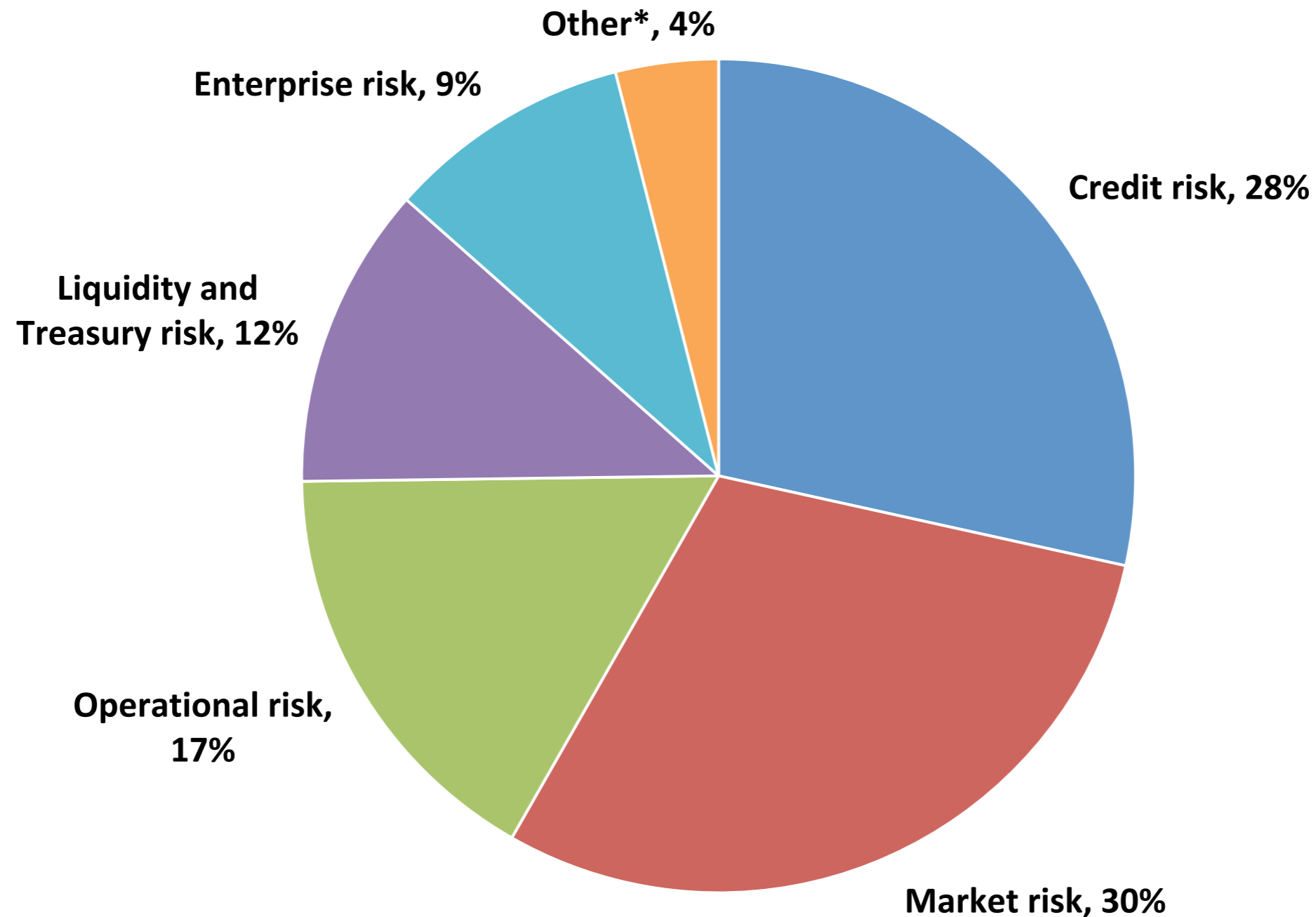
- 54% with 6 to 9 years in financial services had less than 5 years in risk
- 64% with 10 to 15 years in financial services had less than 10 years in risk

Distribution of Time Spent in Risk Related Activities

- Most survey respondents indicated they spend their time “doing” risk management tasks.
- But they also spend time supervising, teaching, regulating, auditing, and consulting.

Percentage of financial risk management time in each activity	
I perform financial risk management tasks	50%
I supervise people who perform financial risk management tasks	15%
I consult to financial risk management professionals	10%
I am not currently involved in financial risk management	10%
I teach or train financial risk management professionals	7%
I audit the financial risk industry	5%
I regulate the financial risk industry	3%

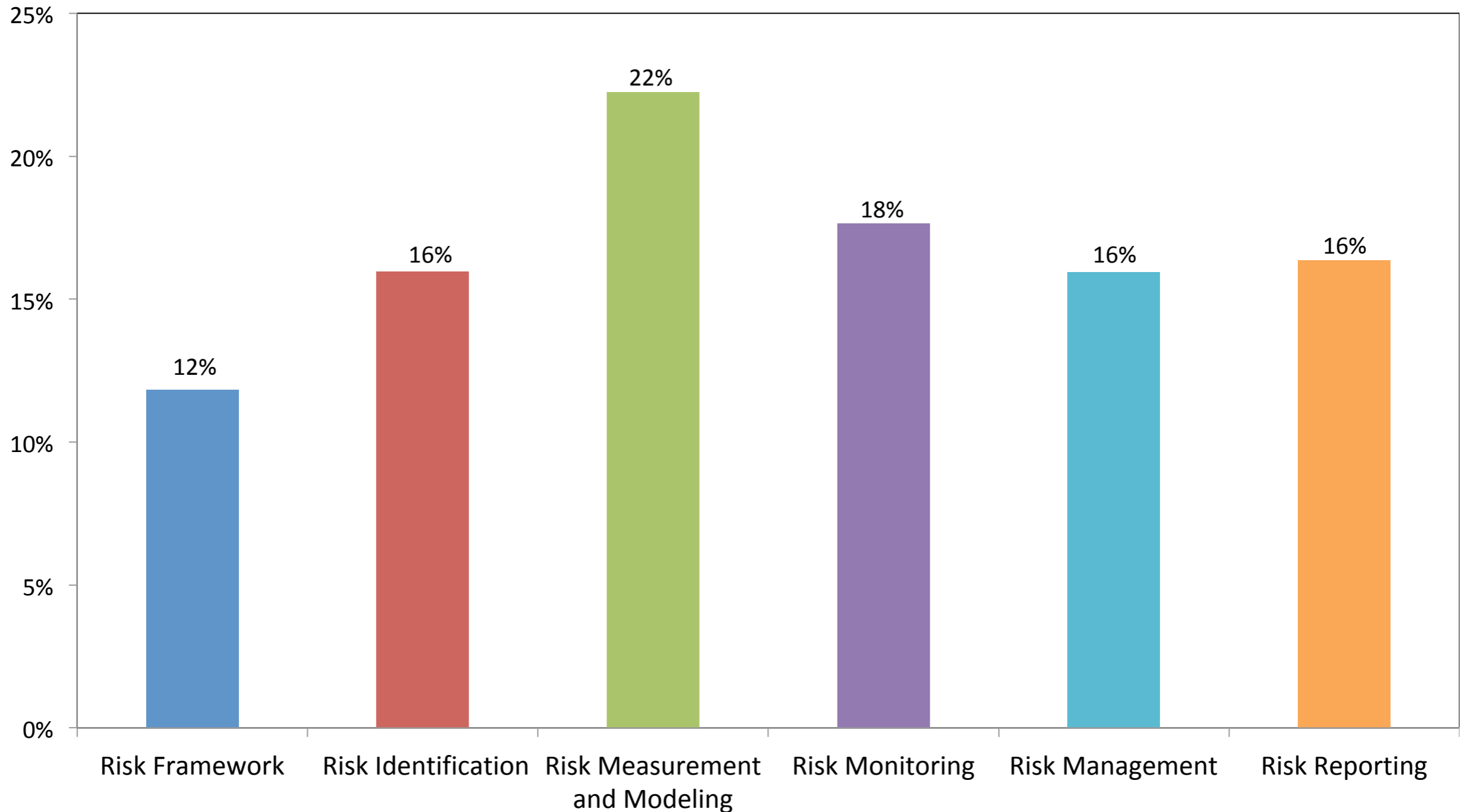
Distribution of Time Spent in Each Area of Risk Management



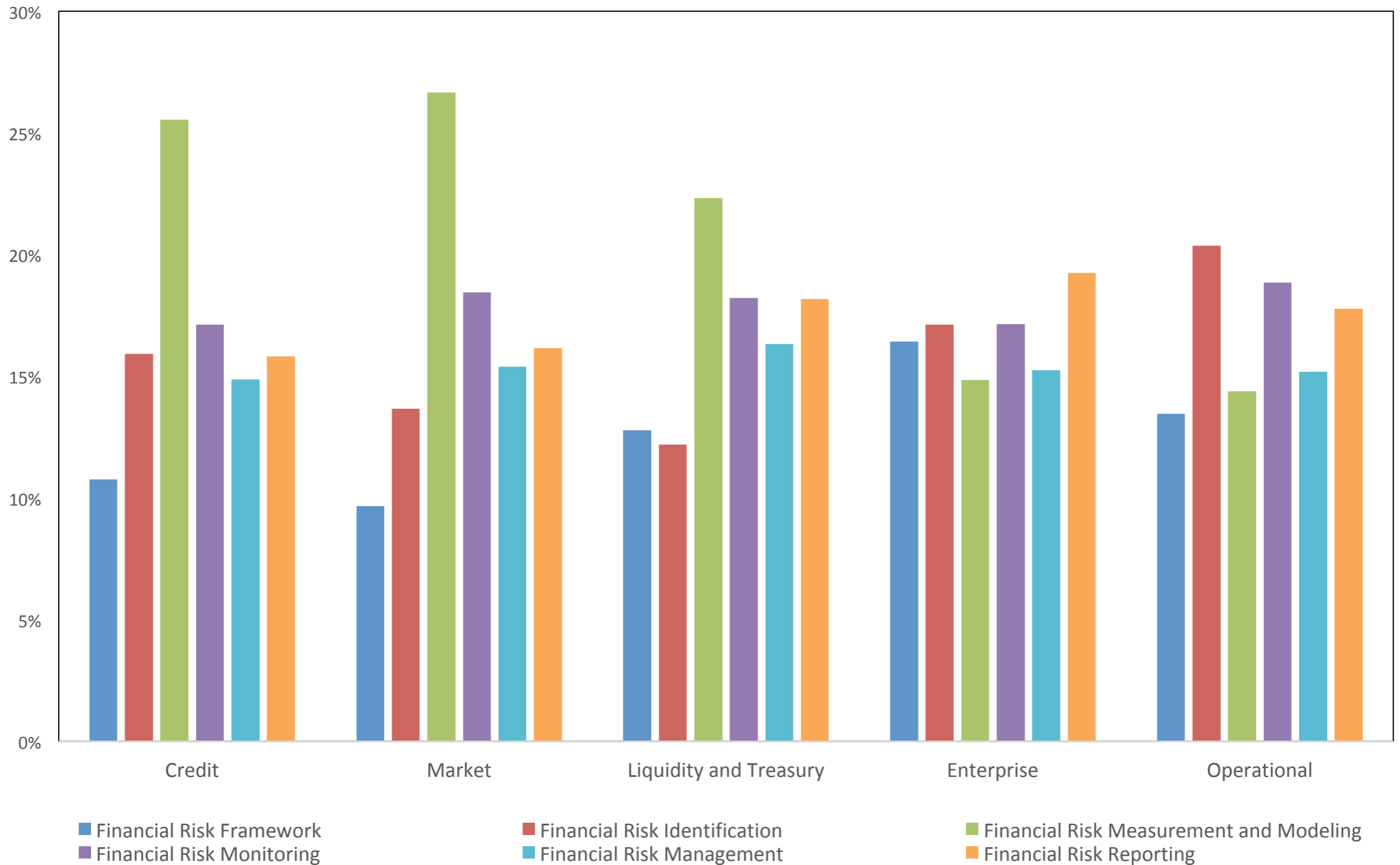
Profiles of Practice

Relative Importance of Each Practice Domain

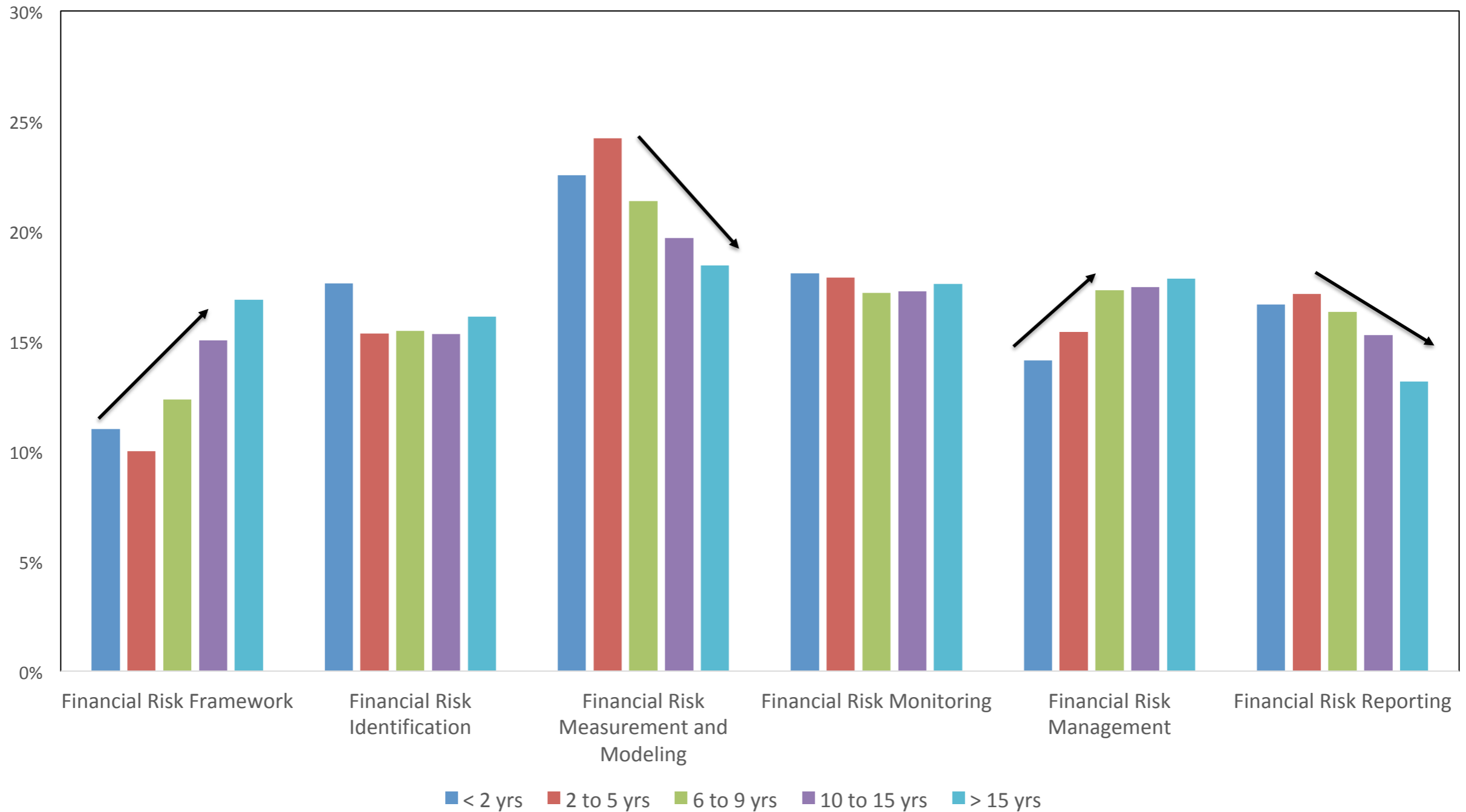
Weighted Profiles of Practice (% of Time x Mean Importance)



Profiles of Practice Vary by Area of Risk Specialization



Profiles of Practice Change with Experience



Tasks Performed

Top 10 Tasks and Related Practice Domains

- 1. Identify signs of potential risk based on exposure, trends, monitoring systems, regulatory and environmental change, organizational culture and behavior. (Identification)**
- 2. Analyze and assess underlying risk drivers and risk interconnections. (Identification)**
- 3. Communicate with relevant business stakeholders. (Monitoring)**
- 4. Monitor risk exposure in comparison to limits and tolerances. (Monitoring)**
5. Evaluate materiality of risk and impact on business. (Management)
6. Interpret results of model or risk measure and modify using expert judgment. (Monitoring)
7. Identify risk owners. (Framework)
- 8. Investigate why limits are exceeded by performing root-cause analysis. (Monitoring)**
9. Generate, validate, and communicate standardized risk reports for internal purposes (e.g. staff, executive management, board of directors). (Reporting)
10. Define risk limits and tolerances for the organization. (Framework)

Top 5 Tasks by Area of Risk Specialization

Process Based Tasks	Credit	Market	Op Risk	Liq. & Treas.	Enterprise
Identify signs of potential risks based on exposure, trends, monitoring systems, regulatory and environmental change, organizational culture and behavior	C	M	O	L	E
Monitor risk exposure in comparison to limits and tolerances	C	M			E
Interpret results of model or risk measure and modify using expert judgment	C	M		L	
Evaluate materiality of risk and impact on business	C		O	L	
Communicate with relevant business stakeholders	C			L	
Analyze and assess underlying risk drivers and risk interconnections		M	O		
Investigate why limits are exceeded by performing root-cause analysis		M		L	
Identify risk owners			O		E
Prioritize risks based on their expected frequency and severity			O		
Define risk limits and tolerances for the organization					E
Set risk management framework, including risk appetite, risk culture, and corporate governance					E

Required Knowledge

Knowledge Ratings

Mean Importance of Knowledge by Area of Risk Specialization					
	Market	Credit	Liquidity & Treasury	Operational	Enterprise
Foundational/cross cutting (89 KPs)	3.01	2.99	3.01	3.00	2.99
Market Risk (12 KPs)	3.19	2.91	3.15	2.91	3.01
Credit Risk (27 KPs)	2.81	3.28	2.99	2.83	3.03
Liquidity and Treasury Risk (17KPs)	2.79	2.85	3.34	2.83	3.00
Operational Risk (17 KPs)	2.50	2.66	2.84	3.21	3.03
Enterprise Risk (12 KPs)	2.67	2.87	3.04	3.10	3.45

Top 10 Foundational Knowledge Points

1. Basic risk types (e.g., market, credit, operational)
2. Interest rates, foreign exchange rates, inflation and deflation
- 3. How risk management can add value**
- 4. Market participants (e.g., banks, insurance companies, funds)**
- 5. Case studies/Lessons learned**
6. Risk measures (e.g., expected shortfall, value at risk)
7. Monetary policy (e.g., monetary policy instruments, exchange rate policies) and its relation with financial markets
8. Valuation methods (e.g., net present value, simulations, replication)
9. Derivatives (including swaps and options)
10. Discount rates (e.g., LIBOR, OIS)

Top 10 Foundational Knowledge Points are Consistent over Time

Rankings of Foundational Knowledge Points At Different Levels of Years of Experience					
	< 2 yrs	2 to 5 yrs	6 to 9 yrs	10 to 15 yrs	> 15 yrs
Basic risk types (e.g., market, credit, operational)	1	1	1	1	1
Interest rates, foreign exchange rates, inflation and deflation	2	2	3	2	2
Case studies/Lessons learned	3	6	5	8	2
How risk management can add value	4	3	2	3	4
Monetary policy (e.g., monetary policy instruments, exchange rate policies) and its relation with financial markets	4	6	9	9	10
Valuation methods (e.g., net present value, simulations, replication)	6	6	11	7	9
Risk measures (e.g., expected shortfall, value at risk)	7	5	6	5	6
Derivatives (including swaps and options)	7	10	10	11	15
Basel framework	9	21	7	6	18
Market participants (e.g., banks, insurance companies, funds)	10	4	4	4	11

Top 10 Non-Foundational Knowledge Points

1. Market risk drivers (e.g., exchange rates, interest rates, equity, liquidity)
2. Scenario and stress analysis
3. Valuation risk categories (e.g., market price uncertainty, model risk, concentration)
4. Credit risk drivers (e.g., macro-economic conditions, industry conditions, company or individual-specific conditions)
5. Models for market risk (e.g., VaR, LVaR)
6. Limits (e.g., exposure limits, concentration limits)
7. Measures of portfolio credit risk exposure (e.g., expected loss, unexpected loss, concentration)
8. Measures of individual credit risk exposure (e.g., probability of default, exposure at default, loan-to-value ratio, scorecards)
9. Measures of counterparty credit risk (e.g., expected exposure, potential future exposure)
10. Definition of events of default

Top 5 Knowledge Points for Market Risk

1. Market risk drivers (e.g. exchange rates, interest rates)
2. Models for market risk (e.g. VaR, LVaR)
3. Valuation risk categories (e.g., model risk, concentration risk)
4. Scenario and stress testing
5. Swaps, futures, forwards, and options

Top 5 Knowledge Points for Credit Risk

- 1. Credit risk drivers (e.g. macro-economic conditions, industry conditions, company or individual-specific conditions)**
- 2. Measures of individual exposure credit risk (e.g., PD, EAD, LTV)**
- 3. Measures of portfolio credit risk (e.g., EL, UL, concentration)**
- 4. Credit lifecycle (e.g., performing, delinquent, default)**
- 5. Definition of events of default**

Top 5 Knowledge Points for Operational Risk

- 1. Categories and sources of operational risk (e.g., people, processes, systems)**
- 2. Compliance risk**
- 3. Risk and control self-assessment**
- 4. Threats to business continuity (e.g., system and vendor dependence, cybercriminals, natural catastrophe)**
- 5. Reputational risk**

Top 5 Knowledge Points for Liquidity and Treasury Risk

1. Funding stability
2. Asset liquidity
3. Liquidity metrics (e.g., liquidity coverage ratio, net stable funding ratio)
4. Sources of liquidity risk (e.g., market-driven, customer-driven, company specific, maturity mismatch)
5. Balance sheet management (e.g., ALM matching funding types)

Top 5 Knowledge Points for Enterprise Risk

1. Risk policies and limits framework
2. Role of risk management in organizations
3. Risk governance framework (e.g., 3 lines of defense, segregation of duties, independent oversight)
4. Integrated risk management (e.g., interaction between credit, market, and operational risk)
5. Risk appetite definition and implementation

Emerging Educational Needs of Risk Managers

Topics of Interest to the Global Risk Management Community

Foundational

- Accounting
- Quantitative/statistical skills
- Regulations (CCAR, IFRS 9, FRTB)
- Derivatives (pricing, valuation, strategies, risks, accounting)

Tools and Techniques

- Risk modeling
- Scenario analysis
- Hedging (strategies, techniques, accounting)
- VaR

Tech-related

- Computer languages (R, Python, VBA, SAS, Matlab)
- Cyber risk management
- Data science (AI, ML, Big Data, etc.)
- FinTech
- Blockchain

Traditional

- Market risk
- Interest rate risk
- FX risk management
- Liquidity risk (measurement, management, modeling)
- ALM
- Credit risk (modeling, management)
- Counterparty credit risk
- XVA
- Operational risk
- Non-Financial Risks
- Risk governance
- Risk appetite framework
- Compliance
- Conduct risk

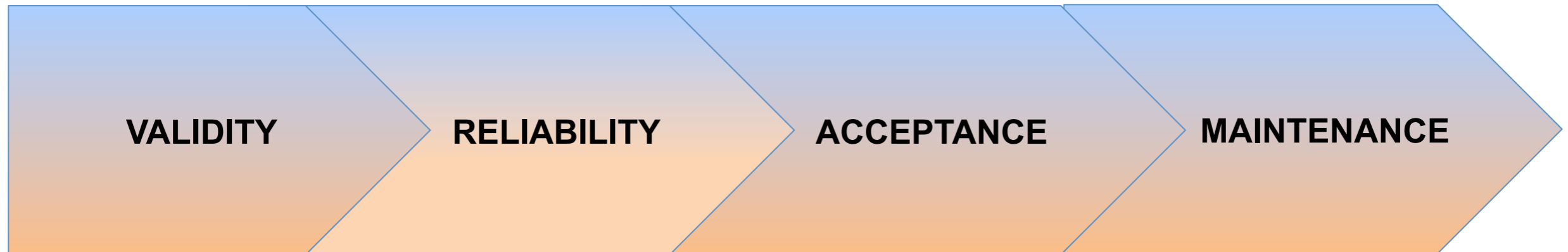
Contact Us Anytime

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The FRM Program

GPA Ensures the FRM is Aligned to Industry Practice



Oversight & governance



Psychometric analysis



Industry acceptance



Continuing education and network

The FRM Journey Begins with the Exam

FRM Exam Part I: Tools used to assess risk (4 hours, 100 multiple choice questions)

- Foundations of Risk Management
- Quantitative Analysis
- Financial Markets and Products
- Valuation and Risk Models

20% - 20 Questions

20% - 20 Questions

30% - 30 Questions

30% - 30 Questions



2 years of relevant
work experience

FRM Exam Part II: Practical application of those tools (4 hours, 80 multiple choice questions)

- Market Risk Measurement and Management
- Credit Risk Measurement and Management
- Operational and Integrated Risk Management
- Risk Management and Investment Management
- Current Issues in Financial Markets

25% - 20 Questions

25% - 20 Questions

25% - 20 Questions

15% - 12 Questions

10% - 8 Questions



Certified FRM



Voluntary CPD
40 hours/2 years

Program Registration Timeline and Fees

Certification Program Enrollment and Exam Registration Fees			
		November 17, 2018	May 18, 2019
Enrollment Fee	US\$ 400	Valid for 4 Years	Valid for 4 Years
Location Fee*	US\$ 40		
Early Registration*	US\$ 350	May 1 – July 31 st , 2018	Dec1 st , 2018– Jan 31 st , 2019
Standard Registration*	US\$ 475	Aug 1 st – Aug 31 st , 2018	Feb 1 st – Feb 28 th , 2019
Late Registration*	US\$ 650	Sept 1 st – Oct 15, 2018	Mar 1 st – April 15 th
* Fees for each Exam (Part I & Part II)			

- Enrollment fee includes 1 year complimentary GARP membership
- Candidates can elect to take both Part I and Part II on the same date; however, candidates must pass Part I to have Part II exam scored
- FRM and ERP Exams are offered at more than 90 sites around the world
- Deferral policy: Can defer Exam registration one time to next exam. \$150 fee



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Relative Importance of Each Practice Domain

		Importance of Domain to Work of Financial Risk Managers				
		Not	Somewhat	Moderately	Extremely	Total (mean)
	% of Work Time					
Financial Risk Framework	11%	1%	12%	34%	53%	3.39
Financial Risk Identification	15%	0%	5%	29%	65%	3.59
Financial Risk Measurement and Modeling	21%	1%	5%	33%	61%	3.55
Financial Risk Monitoring	17%	1%	5%	34%	60%	3.54
Financial Risk Management	15%	0%	5%	30%	65%	3.59
Financial Risk Reporting	16%	1%	9%	41%	49%	3.38
Other	5%					