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Skills for International Financial Services

An Assessment of the Future Skills Requirements in High Potential Sub-Sectors of Ireland's International Financial Services Sector to 2027

Prepared by Indecon International
Economic Consultants



National Skills Council

Expert Group on
Future Skills Needs



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Finally, the Expert Group on Future Skills Needs would also like to express its appreciation of the high-quality work and expertise of Indecon International Economic Consultants, who were commissioned to undertake this study on behalf of the EGFSN.

Introduction to the Expert Group on Future Skills Needs

The Expert Group on Future Skills Needs (EGFSN) advises the Irish Government on the current and future skills needs of the economy and on other labour market issues that impact on Ireland's enterprise and employment growth. It has a central role in ensuring that labour market needs for skilled workers are anticipated and met.

Specifically, the EGFSN:

- Carries out research, analysis and horizon scanning in relation to emerging skills requirements at thematic and sectoral levels. Steering Groups comprising of experts from relevant enterprise sectors and the education and training sector may oversee sectoral research studies to be undertaken or commissioned by the EGFSN. Drawing on statistical input and analysis from the Skills and Labour Market Research Unit (SLMRU) and consultation with the enterprise/ education experts as part of the study, draft reports setting out the projected needs are prepared by the EGFSN.
- Engages with the HEA, SOLAS, QQI, the Regional Skills Fora, and education and training providers in the course of its research.
- Engage with DFHERIS, the HEA, SOLAS and other relevant bodies to produce agreed action plans to address the skills needs identified.
- Submits the findings of its research and agreed Action Plans to the National Skills Council prior to publication.
- Disseminates its findings to the Regional Skills Fora and other relevant groups.

The Enterprise Strategy, Competitiveness and Evaluations Division within the Department of Enterprise, Trade and Employment provides the EGFSN with research and analysis support.

Foreword

As globalisation reshapes the contours of the financial industry, the demand for skilled professionals equipped to navigate this complex terrain has never been more pressing. The International Financial Services (IFS) sector is a cornerstone of the Irish economy. With more than 430 companies, approximately 300 of which are multinationals, the sector produces exports of more than €11 billion, and accounts for 6.3% of Ireland's GDP. This dynamic sector has been growing since the establishment of the International Financial Services Centre in Dublin Docklands in 1987, and now employs more than 57,000 people directly.

The Ireland for Finance strategy, published by the Department of Finance, aims to continue to establish Ireland as the recognised global location for specialist international financial services. This report responds to a recommendation in the 2021 Ireland for Finance Action Plan to carry out a study to assess the potential additional skills demands required to fully exploit opportunities in a variety of sub-sectors. It identifies seven high growth-potential sub-sectors and assesses likely future skills needs, both across, and within, these sub-sectors. These seven sub-sectors accounted for 53,200 employees and 95% of overall IFS employment in the study's base year of 2022.

The study identifies two possible growth scenarios, resulting in a range of likely employment outcomes for these sub-sectors of between 5,900 and 9,300 persons, suggesting that total employment in the sub-sectors will grow from 56,000 in 2022 to between 59,000 and 62,500 persons by 2027. Based on an analysis of supply channels for skilled personnel, the study estimates an annual shortfall of graduates in relevant disciplines from the education system of between 800 and 4,300 persons by 2027.

Complementing the quantitative analysis, the report also details the areas of likely skills and competence gaps identified in more detailed interviews with firms in the seven sub-sectors. Areas where demand is likely to be high included: ESG / sustainable finance; IT, digital and data analytics skills, including in crypto and blockchain, cybersecurity and AI; risk & compliance, regulatory and associated legal skills; 'human experience' skills; and anti-money laundering knowledge/skills. At an occupation level, the most cited professional skill gaps highlighted by firms included: accountants and tax experts; actuaries, economists and statisticians; financial accounts managers; financial analysts; legal professionals; IT professionals; senior asset/portfolio management and investment professionals; and anti-money laundering professionals.

The report makes nine recommendations. In particular, it recommends the establishment of a National Oversight and Implementation Group to drive and coordinate implementation of the recommendations in the report. Other recommendations include the development of a Skills Framework for the IFS sector, which will be led by the Institute of Bankers over the next few years, the encouragement of collaboration between industry and education sectors to ensure that relevant courses are put in place, and the development and promotion of apprenticeships as a career pathway.

I would like to thank the project Steering Group for its time and expertise throughout the process, as well as their help in ensuring a strong response to the survey carried out as part of the project. Particular thanks go to Martina Kelly from the Institute of Bankers who chaired the Steering Group and led the process. I would also like to thank William Batt, Ronnie O'Toole, Eoin Monaghan and Peter Kingston at Indecon Economic Consultants for carrying out the study to such a high standard. The EGFSN looks forward to supporting the work of implementing the report's recommendations.

Tony Donohoe

Chair, Expert Group on Future Skills Needs

Executive Summary

Introduction and Background

This report is submitted to the Expert Group on Future Skills Needs (EGFSN) Secretariat within the Department of Enterprise, Trade and Employment (DETE) by Indecon International Consultants (Indecon). The report concerns an assessment of the future skills requirements of high potential sub-sectors of the international financial services (IFS) sector over the period from 2023 to 2027.

This report addresses Action 8 of the Ireland for Finance Action Plan 2022 and addresses the following overall research aims:

- To identify the niche sub-sectors of the IFS sector in Ireland with the highest growth potential over the next five years.
- To investigate at an in-depth level, the skills required for the successful development of these sub-sectors over the period 2023-27, and to identify gaps in existing skills supply.
- To develop a series of detailed recommendations to address the gaps skills demand and supply in relation to these sub-sectors, and to identify lead actors to take ownership of, and agree implementation timelines for, each recommendation.

To achieve these aims and address the scope of research set out by the EGFSN, Indecon implemented on a rigorous, multi-dimensional methodology. A central feature of this methodology was the application of an extensive programme of consultation and primary research among industry representative bodies and individual firms within the identified high potential sub-sectors. The methodology and work programme, which was implemented in three parts, is described in detail in Section 1 of the main report.

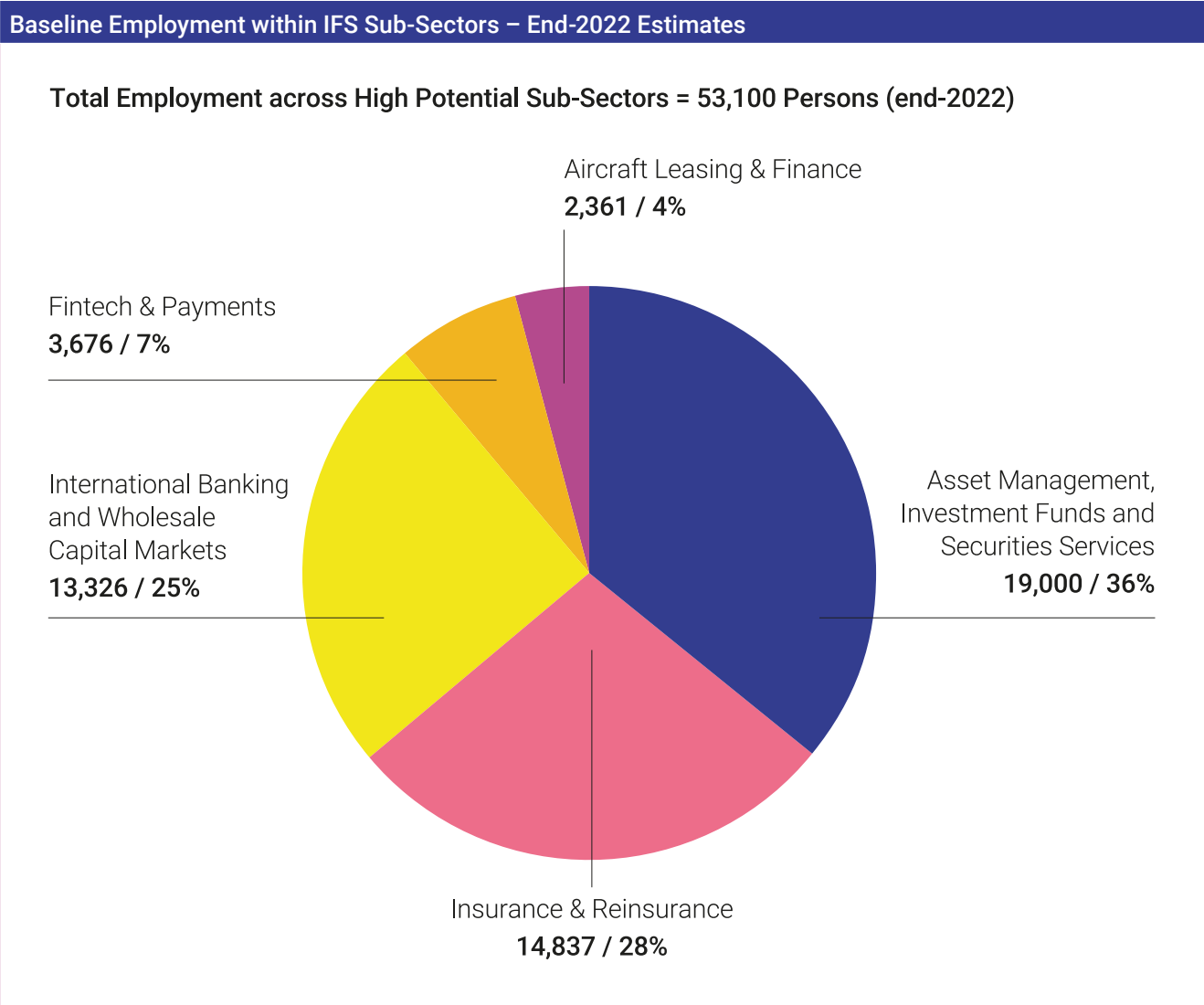
Overview of IFS Sector and Identification of High Potential Sub-sectors

Ireland's IFS sector has its origins with the development of the International Financial Services Centre (IFSC) in Dublin's Docklands in 1987. Over 30 years later, the industry is a thriving, international hub of IFS activity, covering a large portfolio of services. It is estimated that these activities are covered by over 430 companies, of which approximately 300 are multinational. The contribution of the IFS sector to the Irish economy is significant, with an estimated €11 billion worth of exports (equivalent to 6.3% of GDP), while the most recently published Update to Ireland for Finance Action Plan 2023 estimated an employment base of 56,000 persons in firms in the IFS sector at the end of 2022.¹ Informed by desk-based research and the completion of structured survey-based interviews with experts in the IFS sector, a group of seven high growth-potential IFS sub-sectors was identified and agreed with the Steering Group as representing the key areas of focus for the study (see table below).

Identified Sub-Sectors within IFS Sector in Ireland with Highest Growth Potential over 2023-27
Fintech and Payments
Asset Management
Investment Funds and Securities Services
Insurance and Reinsurance
International Banking
Wholesale Capital Markets
Aircraft Leasing and Finance

1. Department of Finance, Government of Ireland (2022). "Update to Ireland for Finance: Action Plan 2023". Note: Employment total is for firms supported by IDA Ireland and Enterprise Ireland.

Following the identification of the seven niche sub-sectors an important step was to establish credible estimates of existing levels of employment in these sub-sectors. These estimates also set the baselines for the subsequent modelling of scenarios for future employment levels/skills demand out to 2027 which, in turn, informed the estimation of skills gaps for these sub-sectors. Based on Indecon’s research, it was determined that the identified seven high growth-potential sub-sectors accounted for the overwhelming majority – 53,200 persons or 95% – of this overall IFS sector employment. The chart below presents Indecon’s estimated breakdown of this total across the key inter-related groupings within the identified high potential IFS sub-sectors.



Source: Indecon analysis

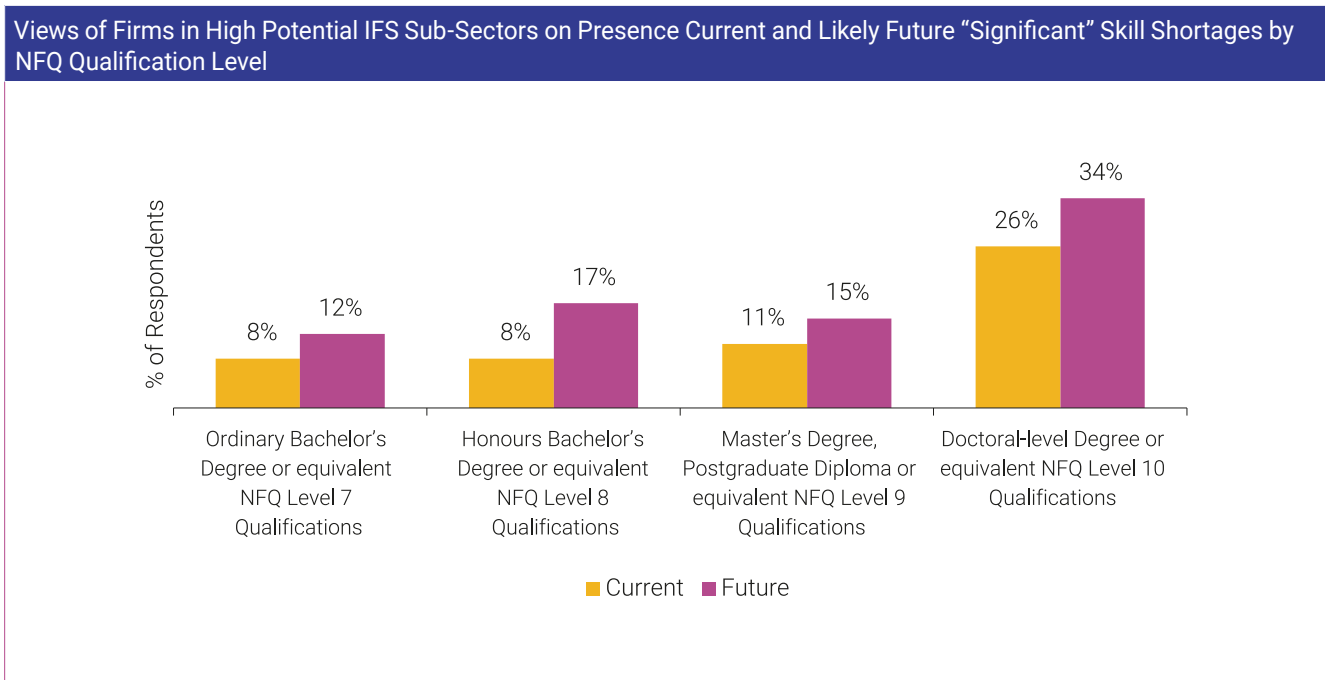
Note: While 7 high growth-potential sub-sectors were identified and are examined qualitatively as standalone sub-sectors, for the purposes of quantified modelling, Indecon has amalgamated the asset management and investment funds & securities services sub-sectors, as well as the international banking and wholesale capital markets sub-sectors.

Examination of Current Skills Supply

Among relevant disciplines/fields of study, business and administration-related courses consistently produce the highest annual output of higher education graduates, with this figure being 5,195 in 2021 (an increase of over 600 compared with 2016). Overall, all fields of study relevant to the IFS sector have seen an increase in the number of graduates compared with five years ago. However, of importance is whether the number of graduates in relevant areas is sufficient to meet current and future levels of skills demand, not only from the IFS sector but also the wider financial services sector and other sectors of the economy.

Most IFS-related higher education courses tend to be male-dominated, with computer/IT-related courses overwhelmingly male-dominated (over 80% male). Law, and marketing and advertising are the only relevant courses which are majority female, though there is a slightly more even split in the most popular course (business and administration). Building awareness of career opportunities and boosting the appeal of the IFS sector among female second- and third-level students will be important to improving diversity and inclusion and unlocking additional supply of skills for the sector.

Indecon's industry survey research suggests that the current level of supply of candidates at various qualification levels will be insufficient to meet the skills needs of the industry. For both current and future skills, doctoral-level degrees (i.e., NFQ Level 10) were deemed to have the most significant skills shortage, with 34% of respondents anticipating a significant skills shortage of these qualifications by 2027. Firms also judge that future skills shortage will be more pronounced than currently across all levels from Level 7 upwards.



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Apprenticeship development

The establishment and recent growth of the IFS Associate and IFS Specialist apprenticeships and of other IFS-relevant specialist apprenticeships has been a very important development in relation to creating new pathways for individuals who wish to establish new careers or develop specialist training in new areas in the IFS sector. However, while registrations have increased, this has been from a small or zero base and overall numbers undertaking these apprenticeships remains low when considered against existing employment levels in the IFS sector and across the wider financial services sector. This suggests that the apprenticeship route remains relatively under-valued as a career pathway within the sector and further work will be needed to promote this route and to develop further specialist programmes.

Upskilling and reskilling

Respondents to Indecon's survey of IFS companies were supportive to the role that upskilling and reskilling can play in meeting the IFS sector's skills needs. Several industry bodies are currently, or are planning to, provide training to the sector. A significant development in the education and training sector has been the development of 'micro-credentials', which are increasingly supported as a flexible channel through which individuals can acquire specialist skillsets. A micro-credential is a proof of the learning outcomes that a learner has acquired following a short learning experience. It demonstrates learning to a certain standard. An integral part of lifelong learning, micro-credentials offer individuals a range of benefits, including the ability to re-skill and up-skill quickly, the ability to build a skills portfolio, the ability to map a personal learning programme by mixing and matching courses from different providers and having skills and competencies recognised. Micro-credentials provide employers with the opportunity to address workforce skills gaps, and re-skill as business and work models evolve. An example of how micro-credentials have recently developed is the 'MicroCreds' platform, which is an educational initiative led by the Irish Universities Association (IUA), in partnership with seven of the founding IUA universities. The platform offers a wide range of courses across all aspects of international financial services.

Attraction of skills from outside Ireland

In relation to inward migration as a source of skills supply, Indecon's research among firms in the high potential IFS sub-sectors suggests that the attraction of suitably qualified migrants is proving difficult. In particular, the research found that 45% of responding firms indicated that difficulty in attracting skilled talent from abroad was a 'very significant' or 'significant' contributing factor to skills gaps.

Development of centralised and accessible database on IFS-relevant HE and FE course provision

There is currently an absence of a centralised portal or other accessible database which describes higher education and further education courses of relevance to the IFS sector. Further work is needed as a priority to develop a comprehensive listing of all accredited and non-accredited IFS-relevant third-level courses delivered and under development and to establish details on course capacity and content. This is critical to establishing a definitive view on whether existing and planned capacity within the third level system is sufficient to meet the requirements of the IFS sector, including high potential sub-sectors.

Future Skills Needs and Scenarios for Demand

While any such market projections are subject to considerable uncertainty, under two separate scenarios examined by Indecon, it is estimated that employment across the high potential IFS sub-sectors within the focus of this assessment will expand by between 5,900 and 9,300 persons, with totals reaching between 59,000 and 62,500 persons by 2027.

Combining the supply and demand modelling suggests that the expected output of graduates from third-level systems will be insufficient to meet the overall growth in demand for employees over the period to 2027, for both the Scenario 1 and Scenario 2 demand modelling. The results of the combined supply and demand analysis for each scenario are shown in the next table. Under Scenario 1, it is estimated that an annual shortfall in supply of approximately 4,200 persons in terms of education and training outputs could emerge by 2027. Under Scenario 2, the estimated shortfall could be approximately 840 persons annually by 2027. The likely shortfall in outputs from the education and training will mean that greater pressure will fall on sources such as the attraction of professionals from overseas and from other sectors.

Scenarios for Estimated IFS Skills Supply and Demand by 2027		
	Scenario 1	Scenario 2
Total Modelled Demand in 2027	62,510	59,138
Total Modelled Supply in 2027	58,296	58,296
Estimated Annual Shortfall in Education & Training Outputs by 2027	-4,214	-842

Source: Indecon modelling

As well as an anticipated shortfall in employment headcount, there are skill and occupational needs that may not directly be addressed by current education and training provision. Detailed scenarios for projected skills demand at occupational level within each of the identified high potential sub-sectors are set out in Section 4.3 of the main report.

The assessment also explored two key skills areas which are central to the growth and development of the IFS industry in the near, medium, and long terms, and which will be central to the changing job landscape of the IFS sector in the coming years. Firstly, the integration of sustainable finance practices and environmental, social and governance (ESG) standards across all areas of financial services is transforming the industry and has led to a key new horizontal skill requirement requiring increased focus. However, analysis of the most popular relevant third-level courses in Ireland suggests that only 30% currently have some ESG or sustainable finance component.

Secondly, the global IFS industry has been marked by a rapid and wholesale digitalisation process, where new technologies are being integrated into mainstream financial services. To support this digitalisation, it is increasingly essential that new staff are trained in data science and coding, and that suitable upskilling courses are available to existing staff. It was found that skills are needed at all levels across the industry – entry, competent, and advanced. These skills include basic and advanced data analysis and coding skills, as well as more advanced technical skills such as cybersecurity, AI, and machine learning.

While the overall impacts of automation on employment are challenging to predict with any accuracy, what is relatively certain is that automation and AI will continue to grow in prominence in the IFS industry. It is crucial, therefore, that governments and business work together to ensure that the workforce is suitably trained to transition in this context, including to capitalise on the new job opportunities created from these technological developments.

Other key gaps in skills and competencies highlighted by firms across the high potential IFS sub-sectors surveyed included:

- Risk and compliance, regulatory, and associated legal skills.
- Transversal 'human experience' skills.
- Anti-money laundering knowledge/skills.

At occupation level, the most cited professional skill gaps highlighted by firms included:

- Accountants and tax experts.
- Actuaries, economists, and statisticians.
- Financial accounts managers.
- Financial analysts.
- Legal professionals and legal associates.
- IT professionals.
- Senior asset/portfolio management and investment professionals.
- Anti-money laundering professionals.

The Ireland for Finance Action Plan 2023 outlines a range of specialist educational and training programmes to be developed or delivered for the IFS industry. These include accredited programmes in sustainable finance regulation for compliance professionals; masters-level programmes in blockchain, fintech, and compliance; and various professional certificate and diploma programmes in a broad range of IFS-relevant specialist topic areas. Though not within the scope of research for this assessment, Indecon also prepared an indicative examination of a sample of popular courses to ascertain their content. However, further work will be needed as a priority to complete a comprehensive listing of all IFS-relevant third-level courses delivered and currently under development and to establish details on course capacity and content. This is critical to establishing a definitive view on whether existing and planned capacity within the third level system is sufficient to meet the requirements of the IFS sector, including high potential sub-sectors.

Recommendations

Based on the detailed assessment undertaken in this study, a set of targeted recommendations has been identified, along with supporting actions/measures and allocated lead and support implementation responsibilities. These recommendations are set out in the next table and are designed to address the identified skills requirements of the international financial services industry over the period to 2027. The recommendations build on measures and programmes that are already underway, or which are currently under development. The level of success ultimately achieved in addressing the future skills requirements identified in this study will, however, be dependent on industry, education/training and government stakeholders working on a collaborative basis to achieve the goals of ensuring a sufficient quantity and quality of skills.

Recommendations and Supporting Actions

1	<p>A National Oversight and Implementation Group should be established as a high priority by the EGFSN secretariat/Department of Enterprise, Trade and Employment, to oversee and coordinate implementation of the recommendations and actions to support skills development and promotion in the IFS and wider Financial Services sector.</p> <ul style="list-style-type: none"> • The group should be comprised of the organisations responsible for carrying out the recommendations (as indicated under each recommendation below) and should also coordinate with the Department of Further and Higher Education, Research, Innovation and Science (DFHERIS) (incl. the Regional Skills Fora) and the Department of Education and the Department of Finance, as required. • The group will be supported for two years to ensure that the relevant actions are delivered. • Each recommendation/supporting action should be led by one organisation, where possible; or a sub-group should be established to coordinate implementation of supporting actions. • The implementation group should report on progress to the EGFSN/DETE on an annual basis, or as requested. <p>Implementation Timeframe: Group to be established with first meeting held by Q2 2024 Implementation Lead: EGFSN secretariat/Department of Enterprise, Trade and Employment</p>
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2 **Priority should be given by all stakeholders in the IFS sector to collaborate in the development of a world class Skills Framework for the Irish financial services industry, with IFS included as a key sector.**

The Skills Framework is envisioned as a valuable resource for the Irish financial services industry. It will ensure consistency of education, qualifications, and skills standards. It will assist in attracting and retaining talent, reduce recruitment costs, and, as a national Framework, it will facilitate and simplify talent flow between sub-sectors, supporting further regionalisation of the industry. It will support upskilling, reskilling, and overall skills development, including the skills required for the industry's pivotal role in sustainable finance and the green transition. The ambition is that the Framework will be renowned internationally for its innovation in skills development at an industry and systems level, enhancing Ireland's reputation as a hub for people talent in financial services. The Framework should, *inter alia*:

- Be collaboratively developed by the project lead with the firms, sectoral bodies and representative bodies encompassing the high potential IFS sub-sectors.
- Be aligned, as appropriate, with best practice development of standards-based skills frameworks within the international financial services sector.
- Identify the technical skills and professional competencies required to work in different functions and at different levels of seniority within each IFS sub-sector.
- Identify alternative learning programmes and pathways, including access to micro-credentials to acquire specialist/advanced and other specific skillsets.
- Devise a system to recognise employers' and individuals' investment in education, training, prior learning, on the job learning and experience, which will further incentivise lifelong learning.
- Utilise appropriate digital/online tools/platforms to facilitate accessibility for users.
- Relate this to ongoing work on apprenticeships.
- Complete a comprehensive listing and database of current IFS-relevant courses offered by further and higher education providers in Ireland. This should include details on course modules.
- Identify gaps in course provision and content relative to current and emerging skill requirements.

Implementation Timeframe: This is a multi-year project with milestones to be agreed. A progress report to be delivered by IOB – 31 December 2024.

Implementation Lead: IOB

- **Responsibilities:** Design, develop, build and deliver the Framework in line with agreed outcomes and timelines.
- As a first step, establish a governance structure.

Implementation Support: Industry Bodies*, HEA, SOLAS, Skillnet Ireland, IFS Skillnet.

3	<p>The effective implementation of the Irish Financial Services Skills Framework should be co-ordinated within the context of the pilot project aimed at developing a single National Portal for Careers and Skills Development, which it is intended will provide information in relation to career pathways across all sectors.</p> <ul style="list-style-type: none"> • This will mean enhanced coordination between government, industry and education and training providers to ensure that course design and capacity are reflected within a National Portal and aligned with required skills and competencies. • This coordination should ensure that identified gaps in course provision and content are addressed effectively by the education and training system. • Priority should be given to aligning IFS-relevant further and higher education courses and qualifications available from Irish providers within a single National Portal on Careers and Skills Development. <p>Implementation Timeframe: Q4 2025 Coordination Lead: DFHERIS and Skillnet Ireland Implementation Support: DFHERIS, HEA, SOLAS, IUA, THEA and IOB (allowing for coordination with Recommendation 2)</p>
4	<p>Enhanced provision and promotion of, and supports for accessing, upskilling and reskilling opportunities is required for the IFS sector.</p> <p>Priority actions include:</p> <ul style="list-style-type: none"> • Continue promotion and provision of incentives for employees and employers to participate in professional designations, continuing professional development, lifelong learning and upskilling. <ul style="list-style-type: none"> » Implementation Lead: DFHERIS. Implementation Support: HEA, SOLAS, Skillnet Ireland, IOB, IDA, EI, Industry Bodies* • Promotion of different career pathways and transitioning opportunities to enter IFS sector. <ul style="list-style-type: none"> » Implementation Lead: IFS Skillnet. Implementation Support: FSI, IOB, Industry Bodies* <p>Implementation Timeframe: By Q1 2025</p>

5	<p>Further develop government and industry-led initiatives to promote and achieve broader diversity and inclusion with IFS sector workplaces and enhance the attractiveness of the sector for women and minority groups.</p> <p>Specific actions which should be prioritised include:</p> <ul style="list-style-type: none"> • List and collate initiatives such as the Women in Finance Charter and the Trinity Centre for People with Intellectual Disabilities (TCPID) to enhance the attractiveness of the sector. <ul style="list-style-type: none"> » Implementation Lead: FSI. Implementation Support: IOB, Industry Bodies*, DFHERIS, HEA, SOLAS, HEIs, ETBs, Skillnet Ireland, IFS Skillnet, IDA, EI • Further develop ‘Women in Leadership’ programmes designed for IFS sector executives. <ul style="list-style-type: none"> » Implementation Lead: IFS Skillnet. Implementation Support: IDA, EI, DFHERIS, HEA, SOLAS, HEIs, ETBs, Skillnet Ireland, RSFs, IOB, Industry Bodies* • Develop and promote ‘Return to Work’ programmes for individuals returning to the workforce after extended periods. <ul style="list-style-type: none"> » Implementation Lead: IFS Skillnet. Implementation Support: Industry Bodies*, IDA, EI, DFHERIS, HEA, SOLAS, HEIs, ETBs, Skillnet Ireland, RSFs, other education providers • Expanding promotional and marketing/branding initiatives, including use of social media, to increase awareness and show case IFS sector as a great place to work for younger people and among individuals with diverse qualifications in other sectors who could be attracted into IFS careers. <ul style="list-style-type: none"> » Implementation Lead: FSI. Implementation Support: IOB, Industry Bodies* <p>Implementation Timeframe: By Q1 2025</p>
6	<p>Continue to develop and strengthen promotion of Apprenticeship programmes as a career pathway in the IFS sector.</p> <ul style="list-style-type: none"> • The IFS sector will collaborate with NAO and academic institutions to design curricula and delivery models for apprenticeships that are aligned with industry needs. A working group will be established to engage with the National Apprenticeship Office (NAO) to explore opportunities to enhance the marketing, administration, and quality aspects of apprenticeships for the FC sector. <p>Implementation Lead: Insurance Institute. Implementation support: NAO, NCI, FSI, IOB, Industry Bodies* Implementation Timeframe: Medium term</p>

7	<p>IFS industry to collaborate with education providers to ensure that relevant courses are put in place.</p> <p>Specific actions include:</p> <ul style="list-style-type: none"> • Industry bodies and major sectoral employers to collaborate with education and training providers to develop and promote new upskilling opportunities using micro-credentials, which are stackable towards larger academic awards through identified pathways. To ease the financial costs of acquiring micro-credentials, the potential to utilise existing workforce development funding channels such as HCI/ SpringBoard+, Skills to Advance and Skillnet Ireland supports should be explored. <ul style="list-style-type: none"> » Implementation Lead: RSFs. Implementation Support: Industry Bodies*, IUA, HEA, SOLAS, Skillnet Ireland. • Third-level education organisations to collaborate with industry bodies to expand IFS as an elective topic in business degrees and facilitate paid internships in IFS firms as part of the qualification. <ul style="list-style-type: none"> » Implementation Lead: IUA, THEA, SOLAS, HEIs, ETBs. Implementation Support: Industry Bodies*, HEA, RSFs, other education and training providers. • Industry bodies to provide information to Guidance counsellors, Careers Portal, and other career guidance sources, in relation the industry and career types, etc. <ul style="list-style-type: none"> » Implementation Lead: Implementation Group. Implementation Support: Industry Bodies* <p>Implementation Timeframe: Q1 2025</p>
8	<p>In addition to increasing domestic skills supply, measures to access skilled individuals from outside Ireland should be enhanced.</p> <ul style="list-style-type: none"> • Industry bodies to collaborate with international talent specialists to develop and implement targeted campaigns to attract specialist talent from overseas, particularly for difficult-to-fill opportunities. <ul style="list-style-type: none"> » Implementation Lead: IDA. Implementation Support: Industry Bodies*. <p>Implementation Timeframe: Q2 2025</p>
9	<p>CSO and other State agencies to collaborate on enhancement of Labour Market Information at sub-sectoral level in the IFS sector.</p> <p>Implementation Lead: CSO.</p> <p>Implementation Support: SLMRU, HEA, IDA, EI, DETE, D Finance.</p> <p>Implementation Timeframe: Scoping work to be completed by Q3 2024</p>

Notes:

*Industry Bodies: Aircraft Leasing Ireland, BPFi, FSI, Insurance Ireland, The Insurance Institute, IAIM, Irish Funds, LIA, FSU

Acronyms Used Above

BPFI	Banking and Payments Federation Ireland
CSO	Central Statistics Office
DETE	Department of Enterprise, Trade and Employment
DFHERIS	Department of Further and Higher Education, Research, Innovation and Science
EI	Enterprise Ireland
ETBs	Education and Training Boards
FSI	Financial Services Ireland (Ibec)
FSU	Financial Services Union
HEA	Higher Education Authority
HEIs	Higher Education Institutes
IAIM	Irish Association of Investment Managers
Ibec	Irish Business and Employers Confederation
IDA	Industrial Development Authority
IOB	Institute of Bankers
IUA	Irish Universities Association
LIA	Life Insurance Association
NAO	National Apprenticeship Office
NCI	National College of Ireland
RSFs	Regional Skills Fora
SLMRU	Skills and Labour Market Research Unit (SOLAS)
THEA	Technological Higher Education Association

Overall Conclusion

The International Financial Services industry has significant potential for future growth, particularly in the high potential sub-sectors identified in this report. However, assuming the levels of growth projected by firms in the sector come to fruition, significant existing skills shortfalls are likely to intensify and/or new gaps emerge in key areas if appropriately targeted and focused actions are not prioritised by government, industry, and education and training providers. The successful implementation of the recommendations set out in this report will, however, enable the potential of the IFS niche sectors to be unlocked and their increased contribution to the Irish economy to be realised.

1

Introduction and Background

1.1 Introduction

This report is submitted to the Expert Group on Future Skills Needs (EGFSN) Secretariat within the Department of Enterprise, Trade and Employment by Indecon International Consultants (Indecon). The report concerns an assessment of the future skills requirements of high potential sub-sectors of the International Financial Services (IFS) sector over the period from 2023 to 2027.

1.2 Background to Assessment

The background to this report is the Government's strategy for the IFS sector, 'Ireland for Finance'. The overall vision of the Strategy, which was originally launched in April 2019² and updated in October 2022,³ is for Ireland to be a top-tier location of choice for specialist international financial services, while the strategy's principal objective is to move Ireland further up the value chain and to continue growing the sectors Ireland already has in place.

Ireland's IFS sector has its origins in the development of the International Financial Services Centre (IFSC) in Dublin's Docklands in 1987. Over 30 years later, the sector encompasses a diverse range of services and over 430 companies, of which approximately 300 are multinational. The contribution of the IFS sector to the Irish economy is significant, with €11 billion worth of exports equivalent to 6.3% of GDP, while the most recently published Update to Ireland for Finance Action Plan 2023 estimated an employment base of 56,000 persons in firms in the IFS sector that are clients of the IDA and Enterprise Ireland as of the end of 2022. This represents an increase of around 60% on the estimated base of 35,000 at the end of 2014.⁴

1.3 Objective and Scope of Research

The overall objective of this report is to assess the skills needs and skills gaps that will arise in high potential IFS sub-sectors in Ireland between 2023-27. In line with this objective, the aims of the research are as follows:

- Identify the niche sub-sectors of the international financial services sector in Ireland with the highest growth potential over the next five years.
- To investigate at an in-depth level the skills required for the successful development of these sub-sectors over the period 2023-27 and to identify gaps in existing skills supply.
- To develop a series of detailed recommendations to address the gaps skills demand and supply in relation to these sub-sectors, and to identify lead actors to take ownership of, and agree implementation timelines for, each recommendation.

The scope of the research sets out the framework for achieving these aims, and in turn, defines the overall structure of this report:

1. Through consultation interviews and desk research, with a particular international focus, identify the circa 6-7 IFS sub-sectors with the highest growth potential in Ireland over a five-year period (2023-27) and categorise them by their skills impact.
2. Identify and quantify the skills demand arising from these IFS sub-sectors.
3. Examine the current skills output from sources such as further and higher education, the potential for reskilling/upskilling and economic migration.

2. Ireland for Finance: The Strategy for the Development of Ireland's International Financial Services Sector to 2025.

See: <https://assets.gov.ie/24482/278893738e764db79c43eada83c030e3.pdf>

3. Update to Ireland for Finance: The Strategy for the Development of Ireland's International Financial Services Sector, extended to 2026.

See: <https://assets.gov.ie/238832/e6d8cd40-7d4a-48f3-863b-1726ab3eaa6.pdf>

4. Ireland for Finance Action Plan 2023. See: <https://assets.gov.ie/249800/6960311b-344b-4236-875b-c04e74d09247.pdf>

4. Model the skills needs of the identified sub-sectors over the period 2023-27 to identify the gaps between skills supply and skills demand.
5. Put forward detailed recommendations to bridge this gap.
6. Identify lead actors to take ownership of, and agree implementation timelines for, each recommendation.

1.4 Methodological Approach to Review

To address the above aims and scope of research, Indecon implemented a rigorous multi-dimensional methodology. A central feature of this methodology was the application of an extensive programme of consultation and primary research among industry representative bodies and individual firms within the identified high potential sub-sectors. A schematic description of the methodology and work programme is presented in Figure 1.1.



Part A research

The overarching analysis in this study has been informed by an extensive stakeholder engagement process. In Part A/Phase 1 of the work programme, Indecon undertook a series of structured survey-based interviews with experts in the IFS sector, which provided qualitative data on the potential for growth in IFS sub-sectors. These Part A surveys were used in the identification of the seven niche sub-sectors which are the basis of the modelling analysis in this report.

The initial interviews were supported by a structured questionnaire/survey, which invited industry experts to provide their opinion on which IFS sub-sectors they judged would be likely to have the highest growth potential. Additionally, experts were asked to provide high-level qualitative assessments on the likely skills requirements for these sub-sectors, and to identify potential areas for gaps in skills supply. Table 1.1 summarises the stakeholder engagement process for Part A of this study. In total, 14 interviews were conducted, and seven survey submissions were received. A total of 16 stakeholder/stakeholder groups were interacted with. The Part A research was complemented by desk research in the form of a detailed qualitative literature review. This review helped in identifying current and future trends in the IFS sector in Ireland, and any potential impacts on skills demand.

Name	Company	Sector	Interview	Submission
Maeve McConnon	IDA Ireland	General Financial Services		
Karen Cohalan	Enterprise Ireland			
Donna Noonan	IFS Skillnet			
Garvan Callan	Onezero1			
Jonathon Lowey	TD Securities	Bank Treasury		
Michelle Spencer	Irish Funds	Funds		
Kevin Gallen	ex-IOB	Banking (General)		
Dermot Hardy	BPFI			
David Furlong	Virtu Europe	Investment Firm		
Michael D'Arcy	IAIM	Asset Management		
Ruth McCarthy	Fexco	Fintech		
Gary Leyden	Instech			
Ruth NicGinneá	Insurance Ire. (Ire)	Insurance		
Florian Wimber	Insurance Ire. (Brx)			
Michael Leahy	Prudential Assurance			
Paul Martin/John Hanlon	Canada Life			

Source: Indecon

ESG and Sustainable Finance

Careful consideration was given as to whether Sustainable Finance, incorporating Environmental, Social, and Governance (ESG) should be identified as a niche sector, reflecting the increasing prominence of these themes within international financial services. Ultimately however, following engagement with industry experts it was decided that Sustainable Finance/ESG represents an important horizontal, cross-sectoral issue, rather than a specific sector. The role of Sustainable Finance and ESG standards in the IFS industry is discussed in more detail in Section 3.

Part B research

For Part B of the project, Indecon undertook primary research in the form of a targeted survey to companies within the seven identified niche sub-sectors. Alongside estimates of current and future employment (which are used to inform the demand modelling component of this report), survey respondents were asked for their views on a range of other skills-related issues, concerning:

- Reasons for skills gaps;
- Anticipated demand and skills gaps; and,
- Appropriate responses to anticipated skills gaps.

In total, Indecon received 59 responses to its targeted survey of IFS companies. These surveys were distributed to member companies of each sub-sectoral representative body. The total number of member companies who received the surveys is estimated to be 402. This implies a response rate of around 15%, which is higher than the circa 8-10% response rate typically seen on industry surveys. Table 1.2 shows summary statistics for the companies who responded to Indecon's survey, where company size is an estimate of the employee headcount for that company. The largest companies that responded to the survey tended to be from the international banking and wholesale capital markets sector, though the largest company to reply on the whole came from the investment funds and securities services sub-sector.

Sub-Sector	Mean Company Size – Persons Employed	Median Company Size – Persons Employed	Size of Largest Company – Persons Employed
Fintech & Payments	82	24	263
Asset Management	83	65	150
Investments Funds & Securities Services	214	38	1,500
Insurance & Reinsurance	262	37	1,158
International Banking and Wholesale Capital Markets	344	350	650
Aircraft Leasing & Finance	47	32	120

Source: Indecon survey research among firms in identified high potential IFS sub-sectors

Table 1.3 shows the breakdown of responses per IFS sub-sector, alongside the estimated number of companies within the sub-sector.

Sub-Sector	Representative Body	Estimated Number of Companies	Number of Firms Responding
Fintech & Payments	FPAI	67	4
Asset Management	IAIM	23	6
Investments Funds & Securities Services	Irish Funds	147	18
Insurance & Reinsurance	Insurance Ireland	132	23
International Banking and Wholesale Capital Markets	BPFI	21	3
Aircraft Leasing & Finance	Aircraft Leasing Ireland (Ibec)	42	5
Total		432	59

Source: Indecon survey research among firms in identified high potential IFS sub-sectors

Note: Irish Funds represents the international investment fund community in Ireland, including fund service providers, fund and asset managers and professional advisory firms.

Data Sources

In addition to the extensive consultation process and survey analysis, Indecon also utilised various datasets to facilitate the study. These included data from the following key sources:

- Central Statistics Office (CSO);
- SOLAS Skills and Labour Market Research Unit (SLMRU);
- Higher Education Authority; and
- Quality and Qualifications Ireland.

1.5 Report Structure

The remainder of the report is structured as follows:

- Section 2 provides an overview of the IFS sector and identifies of the high potential sub-sectors which form the focus of the report.
- Section 3 examines the existing sources of supply of skills available to the IFS sector and the potential to expand supply through different channels.
- Section 4 assesses and models the future skills needs of the industry and identifies potential skills and occupational gaps.
- Section 5 presents overall conclusions and recommendations.

2

Identification of High Potential IFS Sub-sectors

2.1 Introduction

The core of this report commences by presenting an overview of the development and economic importance of the IFS sector in Ireland. Informed by the desk research and consultations undertaken in the first stage of the work programme, the assessment then identifies the high growth-potential IFS sub-sectors on which the detailed assessment in this report will be focussed and establishes estimates for baseline/existing employment levels in these sub-sectors.

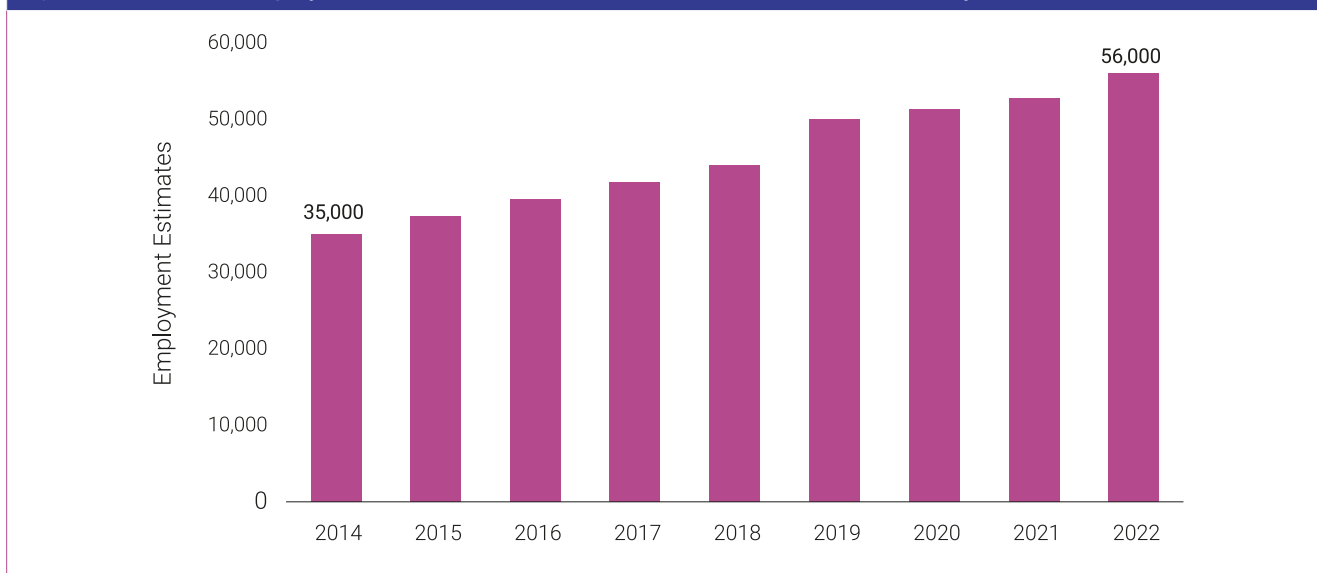
2.2 Overview of International Financial Services Sector

Ireland's international financial services sector has its origins in Dublin's Docklands in 1987. Over 30 years later, the industry is a thriving, international hub of IFS activity, covering a large portfolio of services including international banking, payments, funds, insurance and reinsurance, investment and asset management, fintech, and aircraft leasing.⁵ It is estimated that these activities are covered by over 430 companies, of which approximately 300 are multinational. The contribution to the economy is significant, with €11 billion worth of exports, covering 6.3% of GDP and €2 billion in tax receipts.⁶

There have been significant developments in the IFS industry in recent years, influenced by various political and economic factors, both domestically and globally. The United Kingdom's departure from the European Union has further enhanced Ireland's reputation as a global hub for IFS, in so far as it offers continued access to the European Union, within an attractive regulatory framework and open economy. Various reports have also highlighted the overall resilience, and continued growth, of the industry despite various recent shocks, namely Russia's invasion of Ukraine, and the COVID-19 pandemic.

One of the key metrics by which to assess the vitality of the industry is overall employment. Figure 2.1 shows the trend in overall employment growth in the firms in the international financial services industry that are clients of the IDA and Enterprise Ireland, from the end of 2014 to the end of 2022. These figures have been taken from various Ireland for Finance progress reports. The Ireland for Finance Action Plan 2023 estimates an employment base of 56,000 in the IFS sector, as of the end of 2022. This represents an increase of around 60% on the estimated base of 35,000 at the end of 2014.⁷

Figure 2.1: Year-End Employment Estimates for International Financial Services Industry



Source: Indecon analysis of 'Ireland for Finance' progress reports

5. Department of Finance, Government of Ireland (2019). 'Ireland for Finance: The strategy for the development of Ireland's international financial services sector to 2025'. April 2019. See: <https://www.gov.ie/pdf/?file=https://assets.gov.ie/24482/278893738e764db79c43eada83c030e3.pdf>
6. Ibid, p.9.
7. Department of Finance, Government of Ireland (2015). 'IFS 202: A strategy for Ireland's international financial services sector 2015-2020'. April 2015. See: <https://assets.gov.ie/5949/230119134451-7323c03dfe3f4ca4a2b55e4737eb498c.pdf>

Other recent development initiatives which are helping to achieve the visions as described in both the original Ireland for Finance strategy, and the subsequent update to the strategy in 2022, include the establishment of the Sustainable Finance Centre of Excellence which will lead on research and development activities aimed at supporting the design, development and launch of innovative financial mechanisms to facilitate a sustainable transition. A regulatory framework for crypto assets, in line with the EU’s Digital Finance Strategy, is due to come into effect in 2024. Additionally, April 2022 saw the launch of Ireland’s Women in Finance Charter, indicating a key commitment by the industry to improve gender equality in management and board level positions.

Gender Diversity

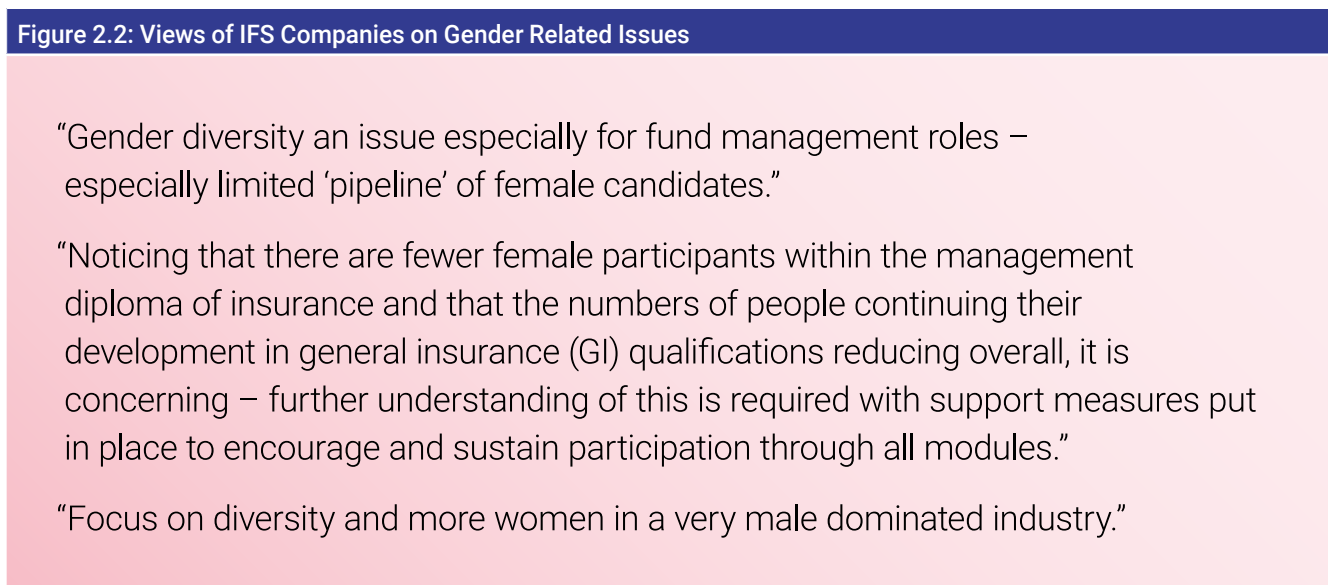
Using the most recently available census data for 2022, Table 2.1 shows that there is a higher proportion of females employed across the wider financial services sector compared with across the Irish economy as a whole. However, in both instances there is a higher proportion of males employed in the industry.

Sector	Male	Female	Persons in Labour Force
Financial and insurance activities (K)	50.6%	49.4%	105,238
All economic sectors	53.7%	46.3%	2,531,099

Source: Indecon analysis of CSO Labour Force Survey data

*Note that CSO data provides gender breakdown by ‘male’ and ‘female’ only.

Furthermore, Indecon’s survey research among entities across the seven IFS sub-sectors found that a number of respondents identified the achievement of gender diversity as an issue. Some of these responses are highlighted in the figure below.

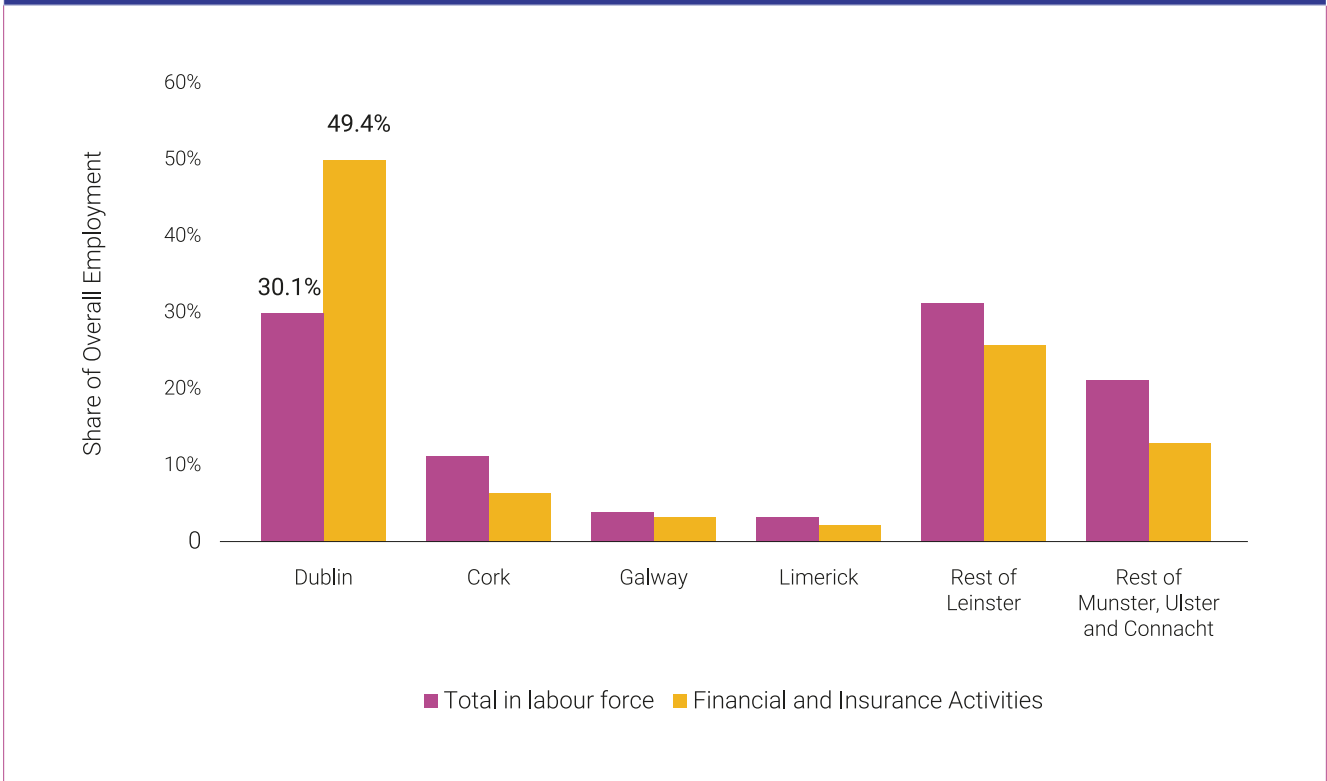


Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Regional Diversity

Figure 2.3 indicates that, using the most recent census data available, for the broader financial services sector, employment is focused predominantly on the Dublin region, where almost half of the workforce are based. Indecon’s survey research also suggests that the IFS sector is primarily Dublin-focused; however, smaller concentrations of activity have developed in other major cities and towns, including Cork, Drogheda, Galway, Kilkenny, Letterkenny, Limerick, Waterford, and Wexford.

Figure 2.3: Share of Overall Employment by Region, 2022



Source: Indecon analysis of CSO Labour Force Survey data

Further regional diversification would be incentivised by lower housing costs outside major cities and improved access to remote/hybrid working. These sentiments have been reflected by some of the respondents to Indecon’s primary research of sub-sectoral companies. Figure 2.4 shows a selection of these responses.

Figure 2.4: Selected Responses of IFS Companies to Living and Working Conditions

“Our current experience is that the skills are broadly available but more competitive to attract top talent. The cost-of-living crisis has been a factor in contributing to this.”

“Addressing the housing / cost of living issues. Rolling out high speed accessible broadband to the entire island of Ireland.”

“Considerations not only for work permits, also to fully remote working- i.e., where it is important to reside in the country where your company entity is.”

“Strengthening the ability for employees to work remotely through a code of practice... can only help.”

“Housing issues and lack of suitable accommodation (1- or 2-bedroom apartment in city centre/ good public transport).”

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

2.3 Identification of Relevant IFS Sub-Sectors

Informed by desk-based research and the completion of structured survey-based interviews with experts in the IFS sector, a group of seven high growth-potential IFS sub-sectors was identified and agreed with the Steering Group as representing the key areas of focus for the study. These sub-sectors are presented in the next table.

Table 2.2: Identified Sub-Sectors within IFS Sector in Ireland with Highest Growth Potential over 2023-27
Fintech and Payments
Asset Management
Investment Funds and Securities Services
Insurance and Reinsurance
International Banking
Wholesale Capital Markets
Aircraft Leasing and Finance

Source: Indecon, desk-based research and the completion of structured survey-based interviews with experts in the IFS sector

These sub-sectors cover the wide range of activities undertaken within the wider IFS sector in Ireland and represent a sizeable portion of the industry base. Each sub-sector is represented by the representative body that assisted Indecon in the distribution of the Part B surveys to member companies.⁸ Table 2.3 overleaf outlines the representative industry body for each sub-sector, alongside the estimated number of member companies.

Table 2.3: Estimated Size of Sub-Sector Representative Bodies		
Sub-Sector	Representative Body	Estimated Number of Member Companies
Fintech & Payments	Fintech and Payments Association of Ireland	67
Asset Management	Irish Association of Investment Managers	23
Investments Funds & Securities Services	Irish Funds	147
Insurance & Reinsurance	Insurance Ireland	132
International Banking	Banking and Payments Federation Ireland	21
Wholesale Capital Markets		
Aircraft Leasing & Finance	Aircraft Leasing Ireland	42
Total		432

Source: Indecon analysis

Note 1: The total number of member companies in this table, 432, is higher than the estimated unique company base of 402, as some companies are members of multiple industry bodies.

Note 2: Irish Funds represents the international investment fund community in Ireland, including fund service providers, fund and asset managers and professional advisory firms.

8. It should be noted that a number of companies within the international financial services industry provide services across a range of these sub-sectors – for example, international banking and fintech & payments sectors. For the purposes of modelling and to avoid double-counting of employment, these companies were assigned to one sub-sector only. Additionally, surveys were tailored to each sub-sector. As such, if a company did receive two (or more) sub-sectoral surveys, they will only have returned one survey according to the sub-sector to which they felt they were most aligned, effectively 'self-selecting' their relevant sub-sector.

The remainder of this section comprises a detailed discussion of each of the identified niche sub-sectors. For each sub-sector, we provide a brief description of the sub-sector, outlining the types of activities, recent trends, challenges and opportunities within each area. In addition, we highlight some high-level skills needs for the sub-sectors, though it is important to note that there may be a significant degree of transferability of skills between sub-sectors. Following this, we present our estimates for the baseline (2022) employment figures for each sub-sector, which forms the basis of our later demand modelling.

Fintech and Payments

Fintech (“financial technology”) and payments concerns the use of technology to deliver financial services and products. Though technology has always been intrinsically tied to the financial services industry, rapid digitalisation and the ubiquity of smartphones and tablets has accelerated the use of new technology to provide financial services. This has altered the traditional banking business model, introducing new participants to the financial services industry. Fintech and payments comprise a diverse range of activities and players, all within a broad remit of applying technology and digital services to innovate the financial services industry. Lee and Shin (2018) identify the distinct components of the Fintech ecosystem as being: startups, technology developers, government, financial stakeholders, and traditional financial institutions.⁹ The main activities which typically fall under the remit of this sub-sector include:

- Payments;
- Insurtech;
- Business Process Outsourcing;
- ‘Regtech’;
- Investment and Capital Markets Tech; and,
- Security Technology.

As with the other sub-sectors identified in this report, the fintech and payments sub-sector is facing a shortage of skills in key areas, most pertinently risk and compliance, data science, and operations. Research informing this report has also particularly identified tech-related roles as having an insufficient level of education among staff.

Furthermore, the wide coverage of Fintech services – which cover many aspects of financial services – means that the sector faces some staff retention issues, due to growth in the sector and competition from other sectors. In contrast, the sub-sector is considered to have good visibility among candidates, compared to some other sub-sectors considered to be more niche.

KPMG’s Pulse of Fintech¹⁰ publication presents a sense of the current state of the global Fintech market. Its most recent report notes that **“2022 was a challenging year for fintech investment globally – with the Americas in particular seeing a \$40 billion drop in investment compared to 2021’s high.”** It highlights several key trends which have marked the Fintech sector in 2021. Firstly, a surge in ‘Regtech’ investment, as companies increasingly turn to modern technological solutions to help them navigate an increasingly complex regulatory environment. Secondly, 2022 saw a cooling in cryptocurrency investment and exchange – though the 2021 report pointed to the growing prevalence of cryptocurrency in the industry as a whole. Lastly, Fintech companies continued to strengthen their partnerships with financial institutions, insurance companies, and wealth management firms.

9. Lee, I., Shin, Y.J. (2018). ‘Fintech: Ecosystem, business models, investment decisions, and challenges’. Business Horizons. Volume 61, Issue 1, 2018. Pages 35-46. <https://doi.org/10.1016/j.bushor.2017.09.003>.

10. KPMG (2023). ‘Pulse of Fintech’. See: <https://kpmg.com/xx/en/home/industries/financial-services/pulse-of-fintech.html>

Ireland is far from alone when it comes to difficulties in attracting skilled, qualified talent to the fintech industry. A report from EY¹¹ highlights the UK's role as a leader in the global fintech market. However, it also demonstrates that – as with Ireland – the UK Fintech market faces a difficult challenge in attracting qualified talent. The financial services sector in the UK faces a growing skills gap on the whole – rising by 30% in the context of a general skills gap decline across the whole economy. Of particular note is the challenge in accessing domestic technical talent (e.g., software engineering, system architecture, and data scientists) and in accessing the skills aligning to emerging areas of disruption (e.g., AI, machine learning, and cryptocurrency).

Finally, the role of blockchain/distributed ledger technology (DLT) in fintech is explored in a recent paper by Nelarutu et al (2022),¹² and identified as being **“here to stay and gradually permeating all facets of society.”** The paper points to the need to create a more efficient system, which would more easily prevent criminal activity and hacking, while also instilling customer confidence in blockchain technology as it slowly becomes a norm in the financial services industry.

Asset Management

Asset management refers to the practice of increasing wealth over time by acquiring, maintaining, and trading assets, typically comprising real estate, equities, stocks, bonds, etc. Ireland is home to 5.9% of worldwide investment funds, with an estimated net asset value (NAV) of €3.7 trillion worth of assets, making it the third largest asset management economy in the world.¹³ Twenty-three companies are members of the Irish Association of Investment Managers. The main activities undertaken in the asset management sub-sector include multilateral trading facilities; custody services; portfolio management; and oversight and investment advisory services. The industry is heavily regulated at EU level, with the major regulatory regimes being:¹⁴

- Markets in Financial Instruments Directive (MiFID).
- Undertakings for Collective Investment in Transferable Securities Directive (UCITS).
- Alternative Investment Fund Managers Directive (AIFMD).

In addition to traditional custody services, there is also a growing need for specialist custody services for digital assets. Digital asset custody centres around the safekeeping of a private key, which is used to store, manage and transfer digital assets by the owner. Given the size of the assets typically in question, these keys require complex technologies to help prevent their theft, loss or destruction, where this management has led to digital asset custody being established as a specialist service.¹⁵ The Markets in Crypto-Assets Regulation (MiCA) came into force in June 2023, and institutes uniform EU market rules for crypto-assets, covering those crypto-assets not currently regulated by existing legislation.¹⁶

The growth of the asset management sector is dependent on ensuring that the skill needs of the future are met. These skill needs, as with our other identified sub-sectors, concern the acquisition of talent with relevant specialist knowledge and technical expertise, particularly in relation to machine learning and the broader rapid digitalization of the industry. Moreover, regulatory experts are in high demand in a sector which is regulated under a wide range of frameworks.

11. EY (2020). 'UK FinTech: Moving mountains and moving mainstream International perspectives to shape the UK FinTech landscape. Minds made for transforming financial services'. See: https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/emeia-financial-services/ey-uk-fintech-2020-report.pdf
12. Nelarutu, K., Du, H., and Le, D.P., (2022). 'A Review of Blockchain in Fintech: Taxonomy, Challenges, and Future Directions'. *Cryptography* 6 (18). <https://doi.org/10.3390/cryptography6020018>
13. Irish Funds (2023). 'Why Ireland'. See: <https://cdn.irishfunds.ie/x/4b95011afa/2023-05-6709-irish-funds-why-ireland-2023-euro-web.pdf>
14. Grant Thornton. 'Brexit: Impact on Irish Asset Managers'. See: <https://www.grantthornton.ie/insights/blogs/brexit/brexit-impact-on-irish-asset-managers/>
15. Alternative Investment Management Association (AIMA). 'Digital Asset Custody'. See: <https://www.aima.org/sound-practices/industry-guides/digital-asset-custody-guide.html>
16. European Securities and Markets Authority. 'Markets in Crypto-Assets Regulation (MiCA)'. See: <https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/markets-crypto-assets-regulation-mica>

The UK's exit from the European Union has had a significant impact on the Irish international financial services industry, particularly within asset management. With the EU-level regulations defining much of the activity in the sector, there is thus a large degree of uncertainty as to how the changes in these regulations will impact on the UK's asset management offering. The nature of these impacts will depend on various factors, such as the location of clients or funds and a company's target market.¹⁷

With such proximity to the UK, access to the EU, and a well-established asset management industry, Ireland has thus become a destination of choice for many asset managers who had been domiciled in the UK. This influx of companies has necessitated a substantial increase in a skilled workforce, at all levels of experience.

The asset management sub-sector also has some issues when it comes to industry promotion and overall awareness of the types of activities involved with the sub-sector. Indeed, it is felt that there is a need to generally move towards demystifying the sub-sector and ensuring that the potential labour market is aware of the diverse array of activities that asset management entails. A more diverse labour force, covering a broader spectrum of knowledge and skills, will also ensure that the asset management sub-sector is resilient to the diverse array of challenges facing the financial services industry as a whole.

Investment Funds and Securities Services

This sub-sector comprises investment funds created with the sole purpose of gathering investors' capital and investing it through stocks, bonds or other securities and assets. Investment funds are crucial when it comes to enabling the accumulation of personal savings, whether this is for major investments or for retirement purposes.¹⁸ Investment funds are managed and represented by a management company working under risk controls, in order to achieve returns for investors by investing in various financial assets.¹⁹

The Irish Collective Asset-management Vehicles Act 2015 (ICAV) is an Act which makes provision for the creation, operation and regulation of bodies corporate to be known as Irish Collective Asset-management Vehicles which have been tailored specifically for the funds industry. These exist alongside other vehicles currently available in Ireland, including the variable capital company (VCC), the unit trust, the common contractual fund (CCF) and the investment limited partnership (ILP).²⁰

While asset management and investment fund management both broadly relate to the management of a client's wealth, investment funds management is typically more selective than asset management. In summary, **"The main difference between asset management and investment management is the scope of work. Asset managers typically have a broader focus, as they are responsible for managing all of a client's assets. Investment managers have a narrower focus, as they are only responsible for managing a client's investment portfolio."**²¹ That said, there is a large degree of overlap and transferability in the skills needs of the two sub-sectors.

A 'security' is the broad term used to refer to any financial asset which can be bought or sold on exchanges like the stock market – for example, stocks, bonds and options. Securities services, therefore, broadly refers to the 'behind-the-scenes factory operations' supporting a client's investment account and the exchange of these securities.²²

17. Ibid.

18. European Commission. 'Investment Funds'. See: https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/financial-markets/investment-funds_en

19. Santander. 'What is an investment fund?'. See: <https://www.bancosantander.es/en/faqs/particulares/ahorro-inversion/que-es-fondo-inversion>

20. A&L Goodbody. 'Irish Collective Asset-management Vehicle (ICAV)'. See: <https://www.algoodbody.com/services/asset-management-investment-funds/irish-collective-asset-management-vehicle-icav>

21. Finance Strategists. 'Asset Management vs Investment Management'. See: <https://www.financestrategists.com/wealth-management/asset-management/asset-management-vs-investment-management/>

22. Career Principles. 'What are Securities Services'. See: <https://www.careerprinciples.com/resources/what-are-securities-services>

More specifically, these services can be broken down into three broad categories:

- **Holding and Custody.** This ensures that securities are held and fully accounted for in the client's account, ensuring that the likes of dividends are properly processed. These custody services are increasingly extending to specialist custody services for digital assets.
- **Clearing and Settlement.** This ensures that transfers are properly executed and settled between parties involved in a transaction, i.e., that buyers and sellers receive the correct amount of securities and cash respectively.
- **Other Services.** These may include managing shareholder meetings, processing asset tax claims, reporting on account performance, as well as wider administrative duties.

The investment funds sector forms a key part of the financial sector in Ireland, accounting for 56% of assets at the end of 2022.²³ As mentioned in the asset management sub-sector, the majority of top global asset managers have Irish-based funds. In fact, over 1,000 fund managers from over 50 countries have assets domiciled and administered within Ireland, including the majority of the top 20 global asset managers. Ireland is a particularly appealing area for global investment firms, offering full access to the EU market in an English-speaking environment, and in a context of a healthy regulatory framework.

Firms in this sub-sector are regulated by the Central Bank of Ireland, and the main types of investment activities for this sector include UCITS (Undertakings for Collective Investment in Transferable Securities) and AIFs (Alternative Investment Funds).

In September 2022, Irish Funds published Irish Funds Sector Technology Skills Needs Analysis,²⁴ which highlights that the sector is **“currently going through a new phase of transformational change that will require, in effect, a revamp of its skills ecosystem.”** This transformational change is largely defined by the digitalisation process which is redefining business and operational models within the funds industry.

Within this context, the paper presents three high-level objectives for the funds industry:

- Enhancing the investment decision-making process;
- Increasing operational efficiency; and
- Improving the client experience.

The technology skill needs of the industry therefore map to these transformational changes, in so far as the achievement of these objectives is only viable with the attraction of the right talent at relevant experience levels. To provide an assessment of the extent of any skills gaps in this area, Irish Funds undertook a questionnaire with 20 leading companies in the Irish funds and asset management sector. The results of this process indicate that there is a significant and increasing demand for tech talent in the sector, particularly at entry/competent levels. This necessitates a substantial influx of suitable talent with request data and ICT skills, alongside a programme of reskilling and upskilling existing employees.

Broader skills shortages reflect common industry-wide skills gaps within areas such as risk and compliance, ESG, and regulation. Additionally, there is a pressing need for more specialist knowledge and expertise, particularly in the areas of private assets including private equity, real estate, and private debt.

An insufficient supply of local talent is another key issue facing the sector. Disjuncts between the skills needed for roles in this sub-sector, and the skills taught on relevant courses means that graduates are often “starting at zero” for jobs in this area. The sector is also extremely competitive at a global level, and therefore faces a high degree of difficulty attracting foreign talent to work in Ireland.

23. Department of Finance, Government of Ireland (2023). 'Investment funds and asset management landscape'. See: <https://consult.finance.gov.ie/en/consultation/funds-sector-2030-framework-open-resilient-developing-markets/chapter/2-investment-funds-and-asset-management-landscape>

24. Irish Funds (2022). 'Irish Funds Sector Technology Skills Needs Analysis'. September 2022. See: <https://cdn.irishfunds.ie/x/7a1adf57d4/irish-funds-sector-technology-skills-needs-analysis-september-2022.pdf>

The table below summarises the main front-, middle- and back-office activities involved in the broader asset and investment management sector.

Front Office	Middle and Back Office
Asset management	Fund administration and accountancy
Portfolio manager	Depository and custody services
Research analyst	Risk and compliance
Product specialists	Corporate and legal services
Sales	Trade operations/ securities lending
Trading	Accounting and HR
	Portfolio analysts

Source: Irish Funds²⁵

Insurance and Reinsurance

Ireland is considered a global centre for the insurance and reinsurance industry, with expertise across all aspects of the insurance industry, including life insurance, non-life insurance, reinsurance, captive insurance, and specialty insurance. These traditional insurance activities are supported by the continuous integration of latest technologies (e.g., Artificial Intelligence, Blockchain, and Cyber Security), to ensure Ireland remains a global hub for the industry.

Furthermore, recent years have seen a drive towards establishing Ireland as the global hub for Insurtech.

Insurtech refers to **“technological innovations that are created and implemented to improve the efficiency of the insurance industry.”**²⁶ This move has been spearheaded by Insurance Ireland who brought together 11 insurance and reinsurance firms to establish instech.ie, which is committed to supporting the developing of the ‘Insurtech’ sector in Ireland.

The insurance and reinsurance sector faces skills shortages in similar areas to those already discussed, namely data science and analytics, and risk and compliance. Furthermore, the broad array of activities within the sectors means there is a constant need for employees with specialist knowledge. Finally, though the latest technology is continuously integrated into the industry, this speed of digitalisation is likely to continue to increase, further necessitating skilled employees to support the development of these areas.

It is also seen that education of the insurance sector is not wholly aligned to, or integrated with, common business degrees. If unchanged, this will first and foremost only serve to widen the gap between skills needs and skills supply in the sector. A secondary impact, however, will be to compound the branding issues that this sector typically faces. This branding issue results in difficulty attracting top talent to the sector, particularly for high demand occupations such as actuaries.

25. Irish Funds (2023). ‘Why Middle Office. Investment Operations’. May 2023. See: https://cdn.irishfunds.ie/x/6fd5850c33/2023-05-16-irish-funds-why-dmo-brochure_web2.pdf

26. TIBCO. ‘What is Insurtech?’. See: <https://www.tibco.com/glossary/what-is-digital-insurance#:~:text=Insur%2Dtech%20ecosystem%20in%20place,customers%20who%20need%20little%20coverage>

International Banking

At a high-level, international banking – as the name might suggest – entails banking transactions which cross national boundaries, encompassing cross-border business in any currency, and local business in foreign currencies. Ireland has a large and growing international banking sector, with 17 of the top 20 global banks based in Ireland, some of whom operate within Ireland as a primary European office. Ireland is ranked as the 19th largest international banking sector globally.²⁷

The main activities in the international banking sub-sector are numerous and complex, but are typically comprised of:

- Domestic currency non-resident deposits and loans;
- Foreign currency resident and non-resident deposits and loans;
- International payments and settlements; and,
- Sophisticated hedging and trading, including currency and bond trading.

BPFI's International Banks Report 2023²⁸ points to the continued growth of the sector in Ireland, which has enabled '**sustainable expansion**' and which has attracted leading international companies to invest in Ireland. Employment growth was estimated at 16% between 2019 and 2022, with overall salaries estimated at €900 million – both notable headline figures amidst various macroeconomic challenges including the war in Ukraine and the COVID-19 pandemic.

The sector faces various skills shortages, especially at senior level, across a range of areas. The biggest challenge as identified by companies in the sector relates to the regulatory landscape, most pertinently in relation to regulatory compliance, cybersecurity, and ESG. The sector has also faced some retention issues, particularly for technology professionals. Expertise in cybersecurity is particularly pertinent in this sector, where international banking companies have seen a recent increase in online fraud and cyber threat to banks.

Elsewhere, Deloitte's 2023 Irish Banking and Capital Markets Outlook²⁹ reflects on the relative health of the banking and capital markets sector, despite numerous challenges including inflation, economic uncertainty, increased regulation and increased competition. The report indicates that, "**The international banks will continue to execute their post-Brexit strategy focusing on growing the services provided and EU countries covered.**" The key issues and themes which are defining the outlook of the international banking sector are reflective of the issues for the international financial services industry as a whole:

- The emphasis on **sustainability**, where banks will need to integrate sustainability practices and standards into their existing operational models. As with other sub-sectors, however, the challenge is sourcing the right level of expertise to facilitate this transition.
- A focus on **people and culture**, in particular the challenge of attracting the right talent within a strongly competitive market. A corollary of this challenge is adequately identifying the right types of skills and resources that will be pivotal to the success of the banking sector in the future.
- Rapid **digital transformation** is redefining the overall operational model of banks, where companies are under increasing pressure to transform their processes digitally to capitalise on the efficiencies this will allow. This includes a rethinking of IT infrastructures to embed cloud technologies in operational models, while there are opportunities for improved customer services where banks are able to better leverage data assets. In both cases, however, there is some uncertainty on the exact regulatory framework under which these will play out.

27. Banking and Payments Federation Ireland (2023). 'Ireland's International Banking and Investment Firm Sector. Fuelling economic and employment growth.' See: <https://bpfi.ie/wp-content/uploads/2023/04/BPFI-International-Banks-Report-2023-FINAL.pdf>

28. Ibid.

29. Deloitte (2023). '2023 Irish Banking & Capital Markets Outlook. What lies ahead for Irish banks?'. See: <https://www2.deloitte.com/ie/en/pages/financial-services/articles/irish-outlook-2023-banking.html>

However, legacy systems, competing priorities, budget constraints, business silos and weak embedding are some of the barriers preventing a rapid integration of digital systems.

- A changing and challenging **regulatory environment** will define the outlook for each of the above themes. This can serve a twin challenge for companies in the industry – ensuring regulatory compliance while also ensuring that companies remain competitive with their international counterparts. For example, the EU Digital Operational Resilience Act (DORA) aims to prevent and mitigate operational risks in the financial services sector by creating a regulatory framework for digital operational resilience.

Wholesale Capital Markets

The wholesale capital markets sub-sector comprises capital market activities, often associated with investment banks and investment firms, which cover the professional wholesale funding and derivative markets. Activities within this sub-sector are complex and clients tend to be corporations, financial services institutions and governments.

Entities within this sub-sector are authorised under one or more of the Capital Requirements Directive (CRD), Capital Requirements Regulation (CRR),³⁰ Markets in Financial Instruments Directive (MiFID II), or Markets in Financial Instruments Regulation (MiFIR),³¹ but are subject to a broad range of legislation and regulations. Firms typically have a high- or medium-high impact rating under the Central Bank of Ireland's Probability Risk and Impact System (PRISM)³² framework. Examples of notable companies operating within this sub-sector in Ireland include TD Securities and Virtu Europe.

The main activities covered by firms operating in this sector include:

- Corporate financing including:
 - » Capital raising;
 - » Private placement;
 - » Mergers and acquisitions (M&A);
 - » Corporate restructuring;
- Trading (including Algo trading) and market making;
- Pre and post trade services;
- Own account proprietary dealing; and,
- Provision of market infrastructure and trading platforms.

As well as the broader challenges facing the international banking and capital markets sector, as previously outlined, Deloitte's 2023 Irish Banking and Capital Markets Outlook³³ identifies life post-Brexit and markets business as playing key roles in shaping the futures of the sub-sector. For the former, the report states that firms will have to monitor their strategy as the political and economic outlook evolves following the UK's withdrawal from the EU. This is likely to comprise greater regulatory focus, with booking models likely to feature in the regulatory conversation. On markets business, the report highlights that it is expected that Ireland will continue to see an inflow of markets business which offers a number of opportunities but indicates that this will require some 'controlled acceleration' to manage this inflow.

30. Europex. 'Capital Requirements Directive (CRD) IV and Capital Requirements Regulation (CRR)'. See: <https://www.europex.org/eulegislation/crd-iv-and-crr/>

31. SteelEye. 'MiFID II vs MiFIR: How are they different?'. Published 23rd April 2021. See: <https://www.steel-eye.com/news/differences-between-mifid-ii-and-mifir>

32. Central Bank of Ireland. 'Introduction to PRISM'. See: <https://www.centralbank.ie/regulation/how-we-regulate/supervision/prism>

33. Deloitte (2023). '2023 Irish Banking & Capital Markets Outlook. What lies ahead for Irish banks?'. See: <https://www2.deloitte.com/ie/en/pages/financial-services/articles/irish-outlook-2023-banking.html>

Other specific issues facing the sector include cybersecurity threats and operational resilience, as companies within the sector continue to ensure that their business operations are suitably designed to meet the complex and diverse set of challenges facing the modern IFS industry, where the technological-heavy nature of wholesale capital markets makes the sector particularly vulnerable to cybersecurity threats. Lastly, as with other sectors, the complexity of regulatory change poses a challenge to this sector. As mentioned above, the pace of this change necessitates a rapid influx of legal, risk and compliance skills, and knowledge to meet this challenge.

Aircraft Leasing and Finance

Ireland is one of two major global centres for aircraft leasing and finance, with 14 out of the top 15 lessors being headquartered on the island of Ireland.³⁴ Additionally, approximately 50% of the world's leased aircraft are managed or leased in Ireland.³⁵ The sector refers to the leasing of aircraft and aircraft engines to airlines and other aircraft operators, with the main activities including:

- **Wet lease**, where the lessor maintains operational control;
- **Dry lease**, where the lessee maintains operational control; and,
- **Third-party asset management.**

The aircraft leasing and finance sector has grown rapidly in recent years – the result of a favourable economic and regulatory environment which attracts companies to headquarter here. Double tax treaties, highly skilled labour, a history of aviation, high-class infrastructure, and a beneficial corporate tax regime are among the reasons for the growth of the sector.

The COVID-19 pandemic was particularly harmful to the sector with an almost total halt to global travel. However, the post-pandemic recovery has seen air travel gradually returning to pre-pandemic levels. As such, airlines continue to restore and expand their networks to meet this new growth and increase in passenger volumes. The result of this is that there has been an increase in demand for aircraft from airlines.

Issues around ESG and sustainability are prominent within the aircraft leasing and finance industry, but it is felt that many companies are **“at the start of their sustainability journey”**,³⁶ with little cross-party agreement on the strategies needed within the sub-sector as a whole to ensure that it can continue to grow, while also meeting regulatory obligations within the context of climate change.

As with other sub-sectors, the aircraft leasing and finance sector faces a number of skills shortages to meet the demands of the modern Irish and global economy, particularly in a field where competition for the top talent is so fierce. The aviation sector is particularly poised to face challenges in adapting to new regulatory frameworks to meet the demands of a net zero transition to reduce greenhouse gas emissions. Therefore, risk and compliance experts are highly sought after in the sector to ensure that companies are fully compliant with new regulatory frameworks. Additionally, specialist knowledge – in engineering and finance – alongside tax expertise are seen as high-demand skills within this sector.

34. IFS Skillnet (2022). 'Financial Services in Ireland – Skills of the Future'. Financial Services Ireland (Ibec). July 11th 2022. <https://www.ibec.ie/connect-and-learn/industries/financial-services-leasing-and-professional-services/financial-services-ireland/talent-and-skills/skills-of-the-future>

35. Deloitte. 'Aviation leasing in Ireland. The war for talent'. See: <https://www2.deloitte.com/ie/en/pages/financial-services/articles/irish-aviation-leasing.html>

36. PWC (2023). '2023 Aviation Industry Review and Outlook'. See: <https://www.pwc.ie/reports/aviation-industry-outlook-2023.html>

2.4 Estimating Baseline (2022) Employment

Following the identification of the seven niche sub-sectors that will form the basis of the rest of the analysis in this report, it is important to establish a credible estimate of employment in these sub-sectors. This estimate of baseline (2022) employment forms the basis of our modelling of future demand to 2027 which, in turn, determines the estimated skills gap for these sub-sectors.

The Update to Ireland for Finance estimated total employment in the international financial services industry in firms that are clients of the IDA and Enterprise Ireland to be 56,000 at the end of 2022.³⁷ Based on qualitative research, and our stakeholder engagement, Indecon determined that our identified key sub-sectors were estimated to cover the majority (95%) of the overall IFS sector employment. As such, we estimated that employment coverage for our sub-sectors in the portfolios of the IDA and Enterprise Ireland at the end of 2022 was 53,200.

To assign the total employment across the sub-sectors, Indecon applied a composite 'grossing up' methodology to our survey responses. We received 59 survey responses from an estimated base of 400+ companies, covering 11,964 employees. Due to data availability, as well as the large degree of overlap in both skills and jobs requirements, for modelling purposes Indecon has amalgamated the asset management and investment funds and securities services sub-sectors, as well as the international banking and wholesale capital markets sub-sectors. Hence, while we have identified 7 niche sub-sectors as having the highest growth potential to 2027 (and these are discussed qualitatively as standalone sub-sectors), our modelling consists of five sub-sectors, that is:

- Fintech and payments;
- Asset management, investment funds and securities services;
- Insurance and reinsurance;
- International banking and wholesale capital markets; and,
- Aircraft leasing and finance.

Our approach to grossing up the estimated survey employment varied slightly between sub-sectors, as described below:

- For the joint asset management, investment funds, and securities services sector, we used a known employment base of 17,273 in 2017 from Irish Funds research, which was updated to reflect estimated 2022 employment.
- For the insurance and reinsurance; aircraft leasing and finance; and fintech and payments sub-sectors, we combined estimated survey employment with employment estimates obtained from a detailed LinkedIn search.
- Lastly, the combined wholesale capital markets and international banking sub-sectors were estimated to make up the remainder of the overall employment base of 53,200.

Table 2.5 shows the results of this modelling procedure for each sub-sector. We estimate that the asset management, investment funds, and securities services sector has the highest estimated existing employment headcount, at 19,000. These are closely followed by the insurance and reinsurance sector, and the combined wholesale capital markets and international banking sector, at 14,837 and 13,326 respectively. The fintech and payments, and aircraft leasing and finance sub-sectors are estimated to have smaller employment headcounts, at 3,676 and 2,361³⁸ employees, respectively.³⁹

37. Department of Finance, Government of Ireland (2022). "Updated to Ireland for Finance: Action Plan 2023". See: <https://www.gov.ie/en/publication/95989-update-to-ireland-for-finance-strategy-action-plan-2023/>

38. This figure is broadly in line with the CSO's estimate of 1,971 persons employed in the industry in 2018. See: <https://www.cso.ie/en/releasesandpublications/ep/p-ali/aircraftleasinginireland2018/>

39. As before, we note that several companies in the IFS industry conduct activities that could feasibly cover multiple sub-sectors. However, for modelling purposes and to avoid any double counting, companies are assigned to one sub-sector only.

Table 2.5: Estimated Baseline (2022) Employment of IFS Sub-Sectors	
Sub sector	Estimated Existing Employment Headcount – 2022
Fintech & Payments	3,676
Asset Management, Investment Funds and Securities Services	19,000
Insurance & Reinsurance	14,837
International Banking and Wholesale Capital Markets	13,326
Aircraft Leasing & Finance	2,361
Total	53,200

Source: Indecon analysis

2.5 Summary of Key Findings

- Ireland has a well-established and sizeable international financial services industry, covering a diverse range of traditional and modern financial services activities.
- It is estimated that these activities are covered by over 430 companies, of which approximately 300 are multinational. The contribution to the economy is significant, with €11 billion worth of exports, covering 6.3% of GDP and €2 billion in tax receipts.
- There have been significant developments in the IFS industry in recent years, influenced by various political and economic factors which have affected the economic outlook, both domestically and globally. These include the United Kingdom’s departure from the European Union; Russia’s invasion of Ukraine, and the COVID-19 pandemic.
- Despite these challenges, Ireland’s international financial services sector has continued to expand. The Updated ‘Ireland for Finance’ Action Plan for 2023 estimated that total employment in IDA and Enterprise Ireland client firms in the IFS industry reached 56,000 persons by end of 2022 – a 60% increase on the 2014 figure.
- Informed by desk-based research and the completion of structured survey-based interviews with experts in the IFS sector, a group of seven high growth-potential IFS sub-sectors was identified and agreed with the Steering Group as representing the key areas of focus for the study. These niche sub-sectors are as follows:
 - » Fintech and Payments.
 - » Asset Management.
 - » Investment Funds and Securities Services.
 - » Insurance and Reinsurance.
 - » International Banking.
 - » Wholesale Capital Markets.
 - » Aircraft Leasing and Finance.

It is estimated that these sub-sectors employed approximately 53,000 persons as of end-2022 and accounted for 95% of the overall level of employment in the wider IFS sector. The main concentrations of employment within the sub-sectors are in asset management, investment funds and securities services, insurance and reinsurance, and international banking and whole capital markets.

3

Assessment of Current Skills Supply

3.1 Introduction and Channels of Skills Supply

In this section, we examine the existing sources of supply of skills available to the IFS sector and the potential to expand supply through different channels. The overall supply of skilled individuals to work in the IFS sector, including high potential sub-sectors, derives from three main sources:

- **Irish education system:** supply of qualified graduates from the second level, and further and higher education systems, as well as upskilling of existing IFS sector workers who acquire additional qualifications.
- **Training and apprenticeships:** where specialist training is provided internally or externally by employers to enable upskilling and/or reskilling, and where individuals undertake apprenticeships.
- **Inward migration:** where individuals holding relevant qualifications and skills relocate from overseas to take up employment in IFS companies in Ireland. This includes migration from other EU member states, the UK and the rest of the world.

Following the examination of current education and training system outputs, we assess the potential for upskilling and reskilling within the industry, before assessing how inward migration operates as an avenue for skills supply in the industry. The analysis in this section is then used to inform the detailed modelling of estimated current and future skills supply for the identified niche sub-sectors in Section 3. This, in turn, will enable Indecon to identify the current and future gaps between skills supply and skills demand.

3.2 Analysis of Current Education and Training Outputs

To inform the overall assessment of skills supply, Indecon has completed an analysis of recent trends in new entrants and graduates from the Irish education system across disciplines/fields of study of relevance to the IFS sector. This analysis focuses on the following areas:

- New entrants to relevant Level 7+ higher education courses;
- Recent graduates from relevant Level 7+ higher education courses;
- Recent Level 7+ graduates from relevant Quality and Qualifications Ireland (QQI) courses; and,
- Graduates from IFS-relevant Apprenticeships.

New Entrants to Higher Education Courses

Table 3.1 presents an analysis of HEA data on the annual number of new/first year registrations on IFS-relevant higher education courses by field of study over the period from 2016 to 2021. Of the fields of study examined, business and administration, represents the most popular area for new entrants, with between 3,500 and 4,000 new student registrations/entrants annually, although annual registrations have only increased by only 5.2% in total between 2016 and 2021. The next most popular areas are law and ICT, with between 1,200 and 1,700 first year registrations per annum, where entrants to law courses have increased by 44%. Annual registrations for economics qualifications have increased by 133% over the same period, but at 245 registrations in 2021, absolute numbers remain relatively small in the wider context of the range of relevant fields of study under examination. This is also the case in relation to finance, banking, and insurance courses. There has been a decrease in broader ICT course entrants, although there have been increases in entrants to courses in the areas of database/network design and administration, and in software/applications development and analysis. It must be emphasised that the registration levels described are not indicative of potential supply of graduates entering ICT sector roles, but the data is informative in relation to the career directions being pursued by higher education students.

Table 3.1: Number of 1st Year Registrations on IFS-relevant Higher Education Courses by Field of Study – 2016-2021							
Discipline/Field of Study	Academic year						% Change (2016-21)
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	
Economics	105	115	235	240	255	245	133.3%
Accounting and taxation	635	620	620	630	660	590	-7.1%
Finance, banking and insurance	155	180	185	220	250	265	71.0%
Law	1,205	1,405	1,500	1,525	1,730	1,735	44.0%
Business & admin courses not further defined/classified	3,625	3,465	3,440	3,655	3,970	3,815	5.2%
Marketing and advertising	675	650	615	660	785	750	11.1%
ICT	1,940	1,855	1,505	1,715	1,540	1,595	-17.8%
Database and network design and administration	135	90	150	135	225	175	29.6%
Software and applications development and analysis	1,000	910	910	880	1,125	1,185	18.5%
Total	9,475	9,290	9,160	9,660	10,540	10,355	9.3%

Source: Indecon analysis of HEA data

As per Table 3.2, most IFS-related courses tend to be male-dominated, with computer/IT-related courses overwhelmingly male-dominated (over 80% male). Law, and marketing and advertising are the only relevant courses which are majority female, though there is a slightly more even split in the most popular course (business and administration). Building awareness of career opportunities and boosting the appeal of the IFS sector among female second- and third-level students will be important to improving diversity and inclusion and unlocking additional skills supply for the sector.

Table 3.2: Gender Breakdown of New Entrants to IFS-relevant Courses by Field of Study (2021/22)						
Field of Study	Male		Female		Other	
	n	%	n	%	n	%
Economics	170	69.4%	75	30.6%	0	0.0%
Accounting and taxation	320	54.2%	265	44.9%	5	0.8%
Finance, banking and insurance	175	66.0%	90	34.0%	0	0.0%
Law	575	33.2%	1,140	65.9%	15	0.9%
Business and administration not further defined or elsewhere classified	1,990	52.2%	1,785	46.8%	40	1.0%
Marketing and advertising	355	47.7%	390	52.3%	0	0.0%
Information and Communication Technologies (ICTs) not further defined or elsewhere classified	1,290	81.1%	290	18.2%	10	0.6%
Database and network design and administration	155	86.1%	25	13.9%	0	0.0%
Software and applications development and analysis	1,025	86.5%	155	13.1%	5	0.4%

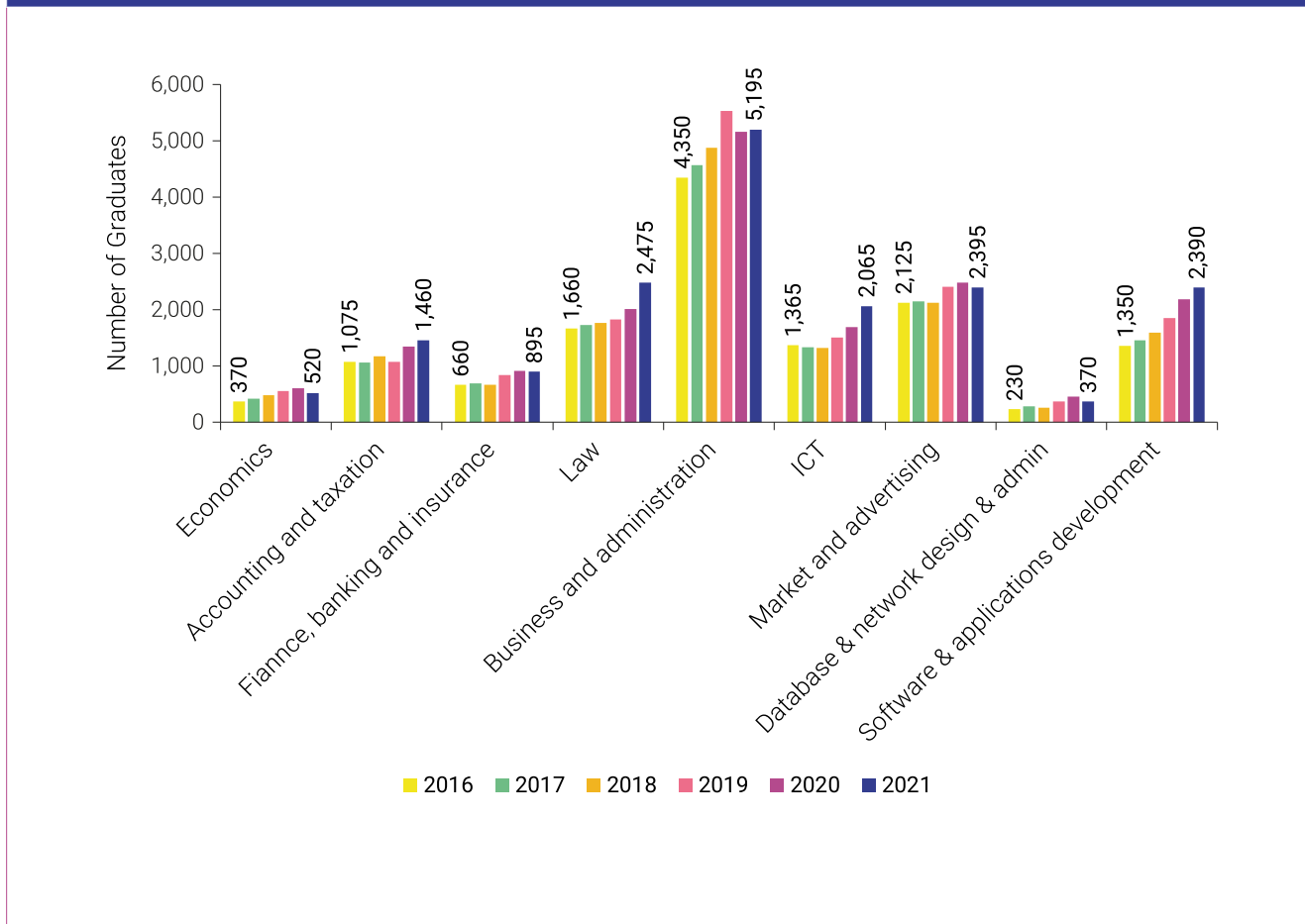
Source: Indecon analysis of HEA data

Higher Education Graduates

As well as the number of new entrants to higher education courses, Indecon has considered the number of recent **graduates** from relevant fields, using data from the Higher Education Authority (HEA). The number of higher education graduates in fields of study relevant to IFS sub-sectors is shown in Figure 3.1. Among relevant disciplines/fields of study, business and administration-related courses consistently produce the highest annual output of higher education graduates, at 5,195 graduates in 2021 (an increase of over 600 compared to 2016).

Though there has been a moderate growth in Level 7+ ICT graduates for HEA courses, SLMRU's 'Monitoring Ireland's Skills Supply 2022'⁴⁰ notes that, "Between 2016 and 2020, the total number of ICT awards rose by more than a half", taking into consideration all NFQ levels, and both HEA-aided and non-HEA aided courses. Most other IFS-relevant courses typically produce between 1,500 and 2,400 graduates annually. Overall, all fields of study have seen an increase in the number of graduates compared to five years ago. However, of importance is whether the number of graduates in relevant areas is sufficient to meet current and future levels of skills demand, not only from the IFS sector but also the wider financial services sector and other sectors of the economy.

Figure 3.1: Number of Level 7+ HE Graduates – IFS-relevant Fields of Study



Source: Indecon analysis of HEA data

Table 3.3 compares the **share** of graduates by NFQ Level between 2016 and 2021, in relevant fields of study. Overall, the data indicates that there has been a slight increase in the proportion of graduates with Level 8 or 9 qualifications. The corollary of this is that there has been a decrease in the number of Level 7 graduates as a share of overall graduations.

In terms of course-level breakdown, the largest increases are evident in ICT-related Level 9 (postgrad) qualifications, where the share of graduates with Level 9 qualifications has risen from 22% to 41% in the broader ICT category. The 'software and applications development and analysis' course has increased its Level 9 or above graduate share by 14 percentage points. Elsewhere the share of marketing and advertising graduates at Level 8 has risen by 10 percentage points.

40. Solas (2022). 'Monitoring Ireland's Skills Supply 2022'. November 2022. See: <https://www.solas.ie/f/70398/x/015a8b62bc/monitoring-irelands-skills-supply-2022.pdf>

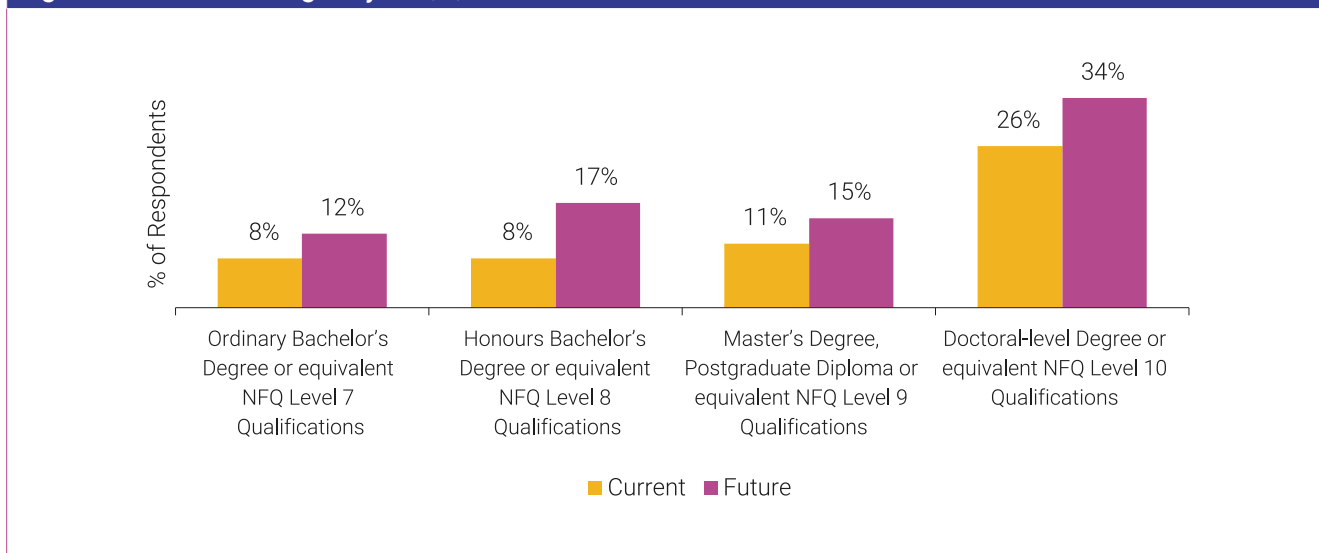
Table 3.3: Share of Graduates by NFQ Level (2016 v 2021)

Year	2016				2021			
NFQ Level	7	8	9	10	7	8	9	10
Discipline/Field of Study								
Economics	0%	50%	46%	4%	0%	55%	42%	3%
Accounting and taxation	16%	59%	25%	0%	9%	55%	36%	0%
Finance, banking and insurance	0%	24%	76%	0%	1%	31%	69%	0%
Law	4%	61%	33%	2%	2%	67%	30%	1%
Business & Admin NES	7%	67%	25%	1%	5%	65%	29%	1%
Marketing and advertising	14%	32%	54%	0%	8%	42%	50%	0%
ICT	22%	53%	22%	2%	8%	50%	41%	1%
Database and network design and administration	24%	46%	30%	0%	22%	39%	39%	0%
Software and applications development and analysis	15%	56%	26%	3%	7%	49%	43%	1%
Average	14%	50%	35%	1%	7%	51%	41%	1%

Source: Indecon analysis of HEA data

Indecon’s industry survey research, however, suggests that the current level of supply of candidates at various qualification levels will be insufficient to meet the skills needs of the industry. Figure 3.2 shows the proportion of survey respondents who identified significant skill shortages per NFQ qualification (Level 7+). For both current and future skills, doctoral-level degrees (i.e., NFQ Level 10) were deemed to have the most significant skills shortage; 34% of respondents anticipated a significant skills shortage of these qualifications by 2027. The research also indicates that firms judge that future skills shortage will be more pronounced than currently across all levels from Level 7 upwards, with NFQ Level 8 qualifications (i.e., honours bachelors degree or equivalent) anticipated to have the biggest absolute increase in significant skills shortage.

Figure 3.2: Views of Firms in High Potential IFS Sub-Sectors on Presence Current and Likely Future “Significant” Skill Shortages by NFQ Qualification Level



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

QQI Awards

Indecon has also considered relevant categories of Quality and Qualifications Ireland (QQI) awards in the examination of current skills supply. QQI higher education (HE) awards are primarily made in respect of graduates from private and independent higher education institutions, and therefore account for a small fraction of all higher education awards made in Ireland (less than 8% of all awards in the HE sector are made by QQI). HEA data, meanwhile, includes awards made by public institutions such as universities, technological universities, and institutes of technology. These institutions are awarding bodies in their own right, and therefore graduates from these institutions are not included in any QQI data.

Table 3.4 shows that around 7,000 major FET & HE awards were granted in 2022 in the fields of study of business administration and law. This figure represented a slight decrease on recent years and was primarily driven by the decrease in FET major awards. SOLAS notes that the decrease in QQI FET awards **“was partly due to a greater shift towards non-QQI and industry awards in the FET sector in more recent years”**⁴¹. It is also possible that the impacts of the pandemic may also have been a factor influencing award levels.

	2019	2020	2021	2022
FET	3,824	3,438	3,196	2,671
HE	3,418	3,785	4,219	4,358
Total	7,242	7,223	7,415	7,029

Source: Indecon analysis of QQI data

Table 3.5 shows that there were almost 3,000 major awards in ICT in 2022, which represented an increase of 16% on the equivalent 2019 figure, but a slight decrease on the 2020 figure. The increase in major awards in ICT has been driven by the increase in HE awards, which have increased by almost 500 in the last three years.

	2019	2020	2021	2022
FET	649	680	704	568
HE	1,764	2,165	1,939	2,241
Total	2,413	2,845	2,643	2,809

Source: Indecon analysis of QQI data

In terms of higher education awards by NFQ Level, Table 3.6 shows that there were almost 6,000 awards at Level 6 or above in business administration and law in 2022. This represents an increase of over 1,000 total awards from 2019. For ICT awards, a total of 2,552 awards at Level 6 or above were awarded in 2022, similarly representing a large proportionate increase from 2019. The decrease in the number of Level 6 awards in both areas is outweighed by the notable increase in the number of Level 7, Level 8, and Level 9 HE Awards between both disciplines.

41. Solas (2022). 'Monitoring Ireland's Skills Supply 2022'. November 2022. Page 23. See: <https://www.solas.ie/f/70398/x/015a8b62bc/monitoring-irelands-skills-supply-2022.pdf>

		Level 6	Level 7	Level 8	Level 9	Level 10	Total
Business, Administration and Law	2019	1,083	516	2,010	1,161	8	4,778
	2020	1,009	549	2,299	1,271	5	5,133
	2021	981	546	2,563	1,612	7	5,709
	2022	928	640	2,769	1,582	0	5,919
ICT	2019	36	188	756	903	0	1,883
	2020	29	308	806	1,253	0	2,396
	2021	25	419	849	1,048	0	2,341
	2022	21	309	848	1,374	0	2,552

Source: QQI

Apprenticeships

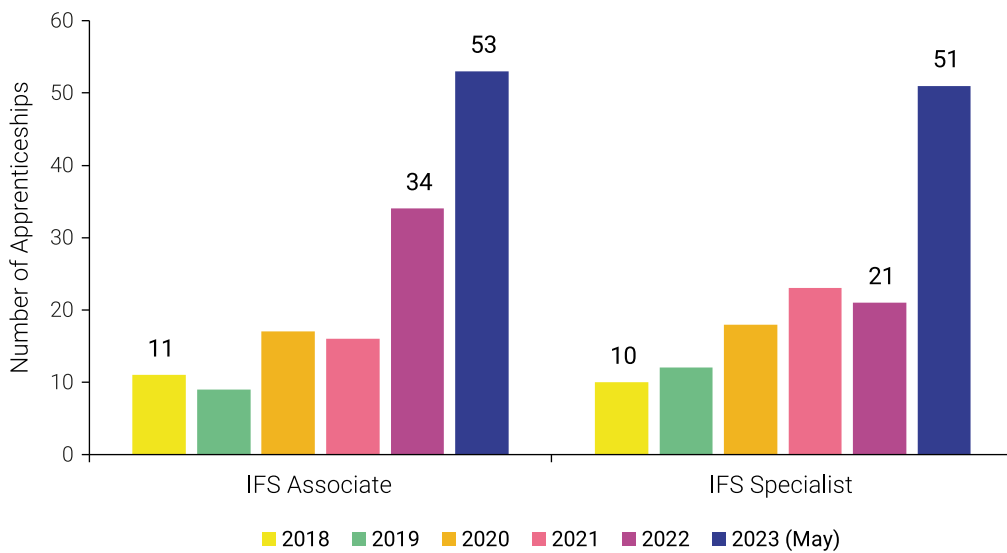
As well as assessing the relevant supply of graduates from higher education institutions, Indecon has considered the potential skilled supply to IFS sub-sectors of participants in a range of relevant apprenticeships. These apprenticeships were designed in collaboration with industry partners to meet the needs of the sector and address skills shortages, and to develop and grow the industry talent pool. Apprenticeships data covering the number of annual registrations per IFS-relevant apprenticeship was provided to Indecon by the National Apprenticeship Office (NAO).

The most directly relevant apprenticeships for the IFS industry are the 'Earn While you Learn' higher certificate and higher diploma programmes, 'IFS Associate' and 'IFS Specialist'.⁴² These programmes combine paid, on the job learning (four days per week) with academic study (one day per week). The IFS Associate programme leads to a Level 6 Higher Certificate in International Financial Services, while the IFS Specialist programme leads to a Level 8 Higher Diploma in Financial Services Analytics. The apprenticeships are designed for a range of IFS career needs, including for career starters, careers changers, and those looking to upskill within the industry. For employers, the apprenticeships offer an alternative pathway for new talent in the industry, who may not otherwise have explored a career in international financial services. Furthermore, they offer an opportunity to upskill, or reskill, an existing employee base to meet the skills needs of the future.

Figure 3.3 shows the number of annual registrations for the IFS Associate and IFS Specialist, which have grown from 21 total registrations in 2018, to 55 in 2022. As of May 2023, a total of 104 students were enrolled on these apprenticeships, of which 53 were registered on the IFS Associate apprenticeship and 51 individuals were enrolled on the IFS Specialist apprenticeship. At the most recent count, a total of 63 students have fully completed either apprenticeship programme.

42. National College of Ireland. 'Become an IFS Apprentice'. See: <https://www.ncirl.ie/Study/Apprenticeships-at-NCI/Become-an-IFS-Apprentice#:~:text=The%20IFS%20apprenticeships%20are%20earn,sector%20and%20wish%20to%20upskill.>

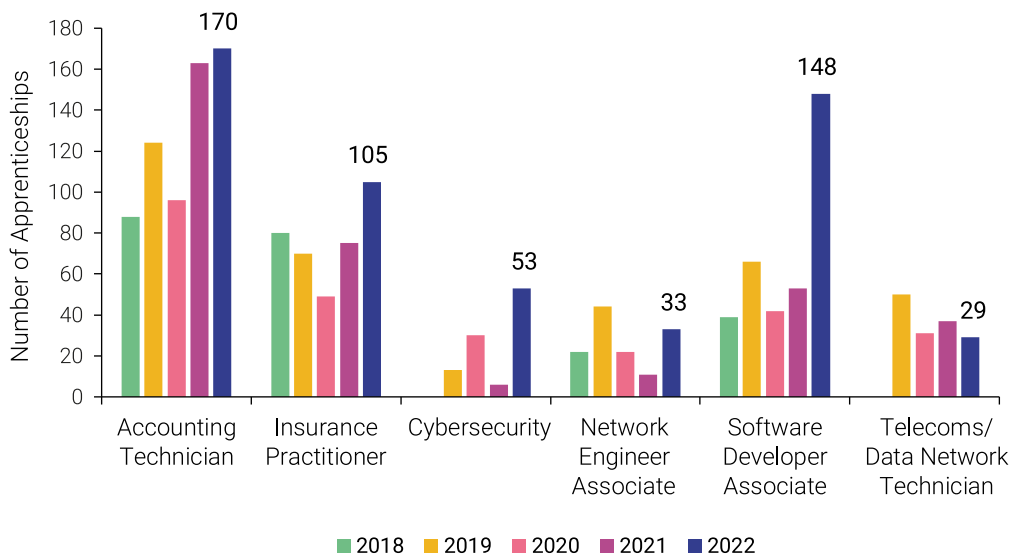
Figure 3.3: Annual Registrations for 'IFS Associate' and 'IFS Specialist' Apprenticeships, 2018-2023



Source: Indecon analysis of National Apprenticeship Office (NAO) data

Figure 3.4 shows the number of graduates from other relevant IFS apprenticeships. The Accounting Technician apprenticeship has recently been the most popular among IFS-relevant disciplines, with 170 registrations in 2022 (almost double that of 2018). The highest growth has been in the Software Developer Associate apprenticeship, rising to 148 registrations in 2022 from 39 in 2018.

Figure 3.4: Annual Registrations from Other IFS-Relevant Apprenticeships, 2018-2022



Source: Indecon analysis of National Apprenticeship Office (NAO) data

Overall, the establishment and recent growth of the IFS Associate and IFS Specialist apprenticeships and of other IFS-relevant specialist apprenticeships has been a very important development in relation to creating new pathways for individuals who wish to establish new careers or develop specialist training in new areas in the IFS sector. However, while registrations have increased, this has been from a small or zero base and overall numbers undertaking these apprenticeships remains low when considered against existing employment levels in the IFS sector and across the wider financial services sector. This suggests that the apprenticeship route remains relatively under-valued as a career pathway within the sector and further work will be needed to promote this route and to develop further specialist programmes.

3.3 Potential for Upskilling and Reskilling

Upskilling and reskilling through additional training provision is another key source of skills supply for the IFS industry, where educational and training outputs alone may be insufficient to meet the needs of the industry. Evidence from the CSO suggests that the broader financial and insurance activities sector (data was unavailable for the international financial services industry alone) is more receptive to continuous vocational training than other sectors, with around 88% of enterprises providing training of any form – the highest of any sector.⁴³ Within the broader financial services industry, 66.8% of enterprises provided internal training courses, with 63% providing access to external training courses.

Additional training provision can be particularly useful at senior level, to enable existing employees to acquire the requisite expert knowledge to be able to step into senior executive positions. In relation to the role of senior executives in the financial system, the Central Bank introduced its 'Fitness and Probity Regime' under the Central Bank Reform Act 2010. The function of the Fitness and Probity Regime is **"to ensure that individuals in key and customer facing positions... are competent and capable, honest, ethical and of integrity and also financially sound."**⁴⁴ These customer facing positions are referred to in the legislation as Controlled Functions (CFs) and Pre-Approval Controlled Functions (PCFs). Applications to become holders of PCF functions are submitted via the Central Bank Portal, and consists of a series of questions to assess a candidate's level of experience, qualifications, competence, knowledge of the industry and firm, reputation and character.⁴⁵

Survey findings indicate that many companies are in favour of increasing the number of relevant short courses and training programmes to enable sufficient upskilling and reskilling for employees in the sector. Over 95% of respondent companies agreed that increasing the provision of short courses to enable upskilling within the industry would be an appropriate response to the industry skilly gaps. Additionally, Figure 3.5 shows a selection of open-ended responses provided by IFS companies to Indecon's primary research survey, when asked for suggestions on how to address the skills gap in their respective sub-sectors.

43. Central Statistics Office (2022). 'Continuing Vocational Training 2020'. See: <https://www.cso.ie/en/releasesandpublications/ep/p-cvt/continuingvocationaltraining2020/>

44. Central Bank of Ireland. 'Fitness and Probity for Regulated Firms'. See: <https://www.centralbank.ie/regulation/how-we-regulate/fitness-probity>

45. Central Bank of Ireland (2023). 'New F&P Application Process'. 24th April 2023. See: <https://www.centralbank.ie/docs/default-source/regulation/how-we-regulate/fitness-probity/new-f-p-application-process.pdf>

Figure 3.5: Selected Training-Related Responses to Skills Gaps from IFS Companies

- “Internal Recruitment focus – Upskilling with micro credentials to enhance technical capabilities”
- “Continue with upskilling efforts, i.e. further education, training etc”
- “Upskilling or cross over skilling courses for those looking to move in to Risk & Compliance”
- “Upskilling and reskilling of existing staff needed to ensure that they have right digital skills for automation and scaling of the business”
- “Investment Management & Middle Office services (upskilling in to roles normally seen in the UK/USA)”
- “Greater provision of practical training courses to deepen the pool of talent in areas such as “Designated Persons”, Controlled Functions and Pre-Approval Controlled Functions”
- “Company incentive / grant schemes for training”

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

A review of relevant training programmes has indicated that the following bodies currently, or are planning to, provide training to the IFS sector:

- Skillnet Ireland, including IFS Skillnet and Sustainable Finance Skillnet.
- Technological universities.
- Compliance Institute.
- CFA Institute.
- Chartered Accountants Ireland.
- Association of Chartered Certified Accountants (ACCA).
- CPA.
- Chartered Institute of Management Accountants.
- The Insurance Institute.
- Law Society of Ireland.
- Institute of Banking.

The Ireland for Finance Action Plan 2023 outlines a range of specialist educational and training programmes to be developed or delivered for the IFS industry in 2023. These include accredited programmes in sustainable finance regulation for compliance professionals; masters-level programmes in blockchain, fintech, and compliance; and various professional certificate and diploma programmes in a broad range of IFS-relevant specialist topic areas. Though not within the scope of research for this assessment, Indecon prepared an indicative examination of a sample of popular courses to ascertain content. However, further work will be needed as a priority to complete a comprehensive listing of all IFS-relevant third-level courses delivered and under development and to establish details on course capacity and content. This is critical to establishing a definitive view on whether existing and planned capacity within the third level system is sufficient to meet the requirements of the IFS sector, including high potential sub-sectors.

Micro-credentials

Micro-credentials are increasingly supported as a flexible channel through which individuals can add specialist skillsets required to successfully undertake roles in the IFS as well as other sectors in the economy. In 2022, the European Council published a recommendation on a European approach to micro-credentials for lifelong learning and employability. As part of this recommendation, the Council offered a standardised definition of 'micro-credential', namely:

“Micro-credential’ means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes will have been assessed against transparent and clearly defined criteria. Learning experiences leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competences that respond to societal, personal, cultural or labour market needs. Micro-credentials are owned by the learner, can be shared and are portable. They may be stand-alone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity.”⁴⁶

The European Council is very supportive of the role that micro-credentials can play in addressing skills shortages across the European Union, recognising micro-credentials as an integral part of lifelong learning, which offer individuals a range of benefits, including the ability to re-skill and up-skill quickly, the ability to build a skills portfolio, the ability to map a personal learning programme by mixing and matching courses from different providers and having skills and competencies recognised. Micro-credentials provide employers with the opportunity to address workforce skills gaps, and re-skill as business and work models evolve.

Data on the provision of micro-credentials is generally limited, as these shorter courses are not typically identified, in a standalone manner, in national labour force surveys.⁴⁷ Although this makes it difficult to adequately quantify the extent of uptake of micro-credentials, there is sufficient evidence to suggest support for these programmes from both employers and learners. For example, a 2021 QQI report on micro-credentials in Higher Education points to the 2018 National Employer Survey, which indicates that **“more than 85% of employers in Ireland support staff to engage in continuing professional development.”**⁴⁸ This is consistent with the positive response from IFS companies surveyed by Indecon, where 87% of companies agreed about the importance of micro-credentials in addressing skills gaps in the IFS sector (see Section 4.5 for further detail). On the learners' side, the aforementioned QQI report highlights that 7,527 micro-credentials were achieved between 2014 and 2020, with the majority of these awards achieved in business, administration and law.⁴⁹

An example of how micro-credentials have recently developed is the 'MicroCreds' platform. This is an educational initiative led by the Irish Universities Association (IUA), in partnership with seven of the founding IUA universities. Table 3.7 lists the broad subject topics by subject area (as defined by MicroCreds) covered by the platform in respect of courses of relevance to international financial services sector. A full listing of specific courses under these subject topics is presented in Annex 3.

46. Council of the European Union (2022). 'Council Recommendation of 16 June 2022 on a European approach to micro-credentials for lifelong learning and employability'. Official Journal of the European Union. 27th June 2022. See: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627\(02\)#:~:text=Member%20States%20are%20recommended%20to,the%20European%20Pillar%20of%20Social](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627(02)#:~:text=Member%20States%20are%20recommended%20to,the%20European%20Pillar%20of%20Social)

47. QQI (2021). 'QQI early exploration into Micro-credentials in Higher Education, 2014-2020'. August 2021. See: <https://www.qqi.ie/sites/default/files/2021-10/early-exploration-into-micro-credentials-in-higher-education-2014-20.pdf>

48. Ibid, p.8.

49. Ibid, p.21. Note that a significant number (almost half) of these awards were achieved by the Irish Payroll Association (IPA). However, when IPA awards are excluded, business, administration and law remains the most popular area of learning for micro-credentials in this time.

Table 3.7: Selected IFS-Relevant Micro-credential Courses by Subject Topic		
Business Management	IT and Computer Science	Maths, Economics and Statistics
Business and Business Administration	Automation and AI	Financial Mathematics
Business Ethics	Computing and IT Skills	
Digital, Data and Analytics	Data Science	
Entrepreneurship and Innovation	ICT	
Environmental, Social and Governance	Software and Applications Development	
Finance and Accounting		
Leadership and Management		
Marketing and Advertising		
Operations and Quality Management		
Procurement		
Project Management		
Regulation and Compliance		
Strategy		
Supply Chain Management		
Workplace Skills		

Source: MicroCreds.ie

3.4 Inward Migration

Migration serves as one of the key sources of skills supply for Ireland’s economy and is an important channel for the IFS sector. With this in mind, not only must the working conditions of an industry be attractive enough for migrants to relocate to Ireland, but the destination country as a whole must be sufficiently attractive as a destination to which migrants may wish to relocate. Many of the key policy reports underpinning this project point to the importance of migration as a means to meet the skills demand of the industry. For example, the Department of Education and Skills (DES) ‘Technology Skills 2022 – Ireland’s Third ICT Skills Action Plan’⁵⁰ points to **“facilitating inward migration of skilled ICT professionals”** as a key action point to meet the ICT needs of the economy as a whole.

While detailed data on overall inward migration flows within the IFS sector is not available, an indication of the increasing importance of attraction of skilled individuals from overseas can be seen from the CSO’s Labour Force Survey data on the nationality of persons in employment within relevant economic sectors. A comparison of the latest available CSO data for the final quarter of 2020 with the position in the same quarter of 2016 is presented in Table 3.8. The analysis indicates significant increases in the number and proportions of individuals of non-Irish nationality working in financial services, ICT and professional, scientific and technical activities in Ireland.

50. Department of Education and Skills, Government of Ireland (2022). ‘Technology Skills 2022. Ireland’s Third ICT Skills Action Plan. Government, the Higher & Further Education and Training Sector and Industry working together to meet Ireland’s high-level ICT skills needs’. See: <https://www.gov.ie/pdf/?file=https://assets.gov.ie/24698/50fcbc8f80ab4a828ab7f44e2114aa7b.pdf>

Economic Sector	Citizenship	2022	2023	% change (2022-2023)
Information and communication	All Countries	163,150	172,933	6.0%
	Ireland	108,325	110,133	1.7%
	All countries excluding Ireland	54,800	62,833	14.7%
Financial, insurance and real estate activities	All Countries	131,575	133,800	1.7%
	Ireland	109,950	108,667	-1.2%
	All countries excluding Ireland	21,600	25,133	16.4%
Professional, scientific and technical activities	All Countries	166,350	173,367	4.2%
	Ireland	138,050	141,133	2.2%
	All countries excluding Ireland	28,275	32,233	14.0%

Source: Indecon analysis of LFS data

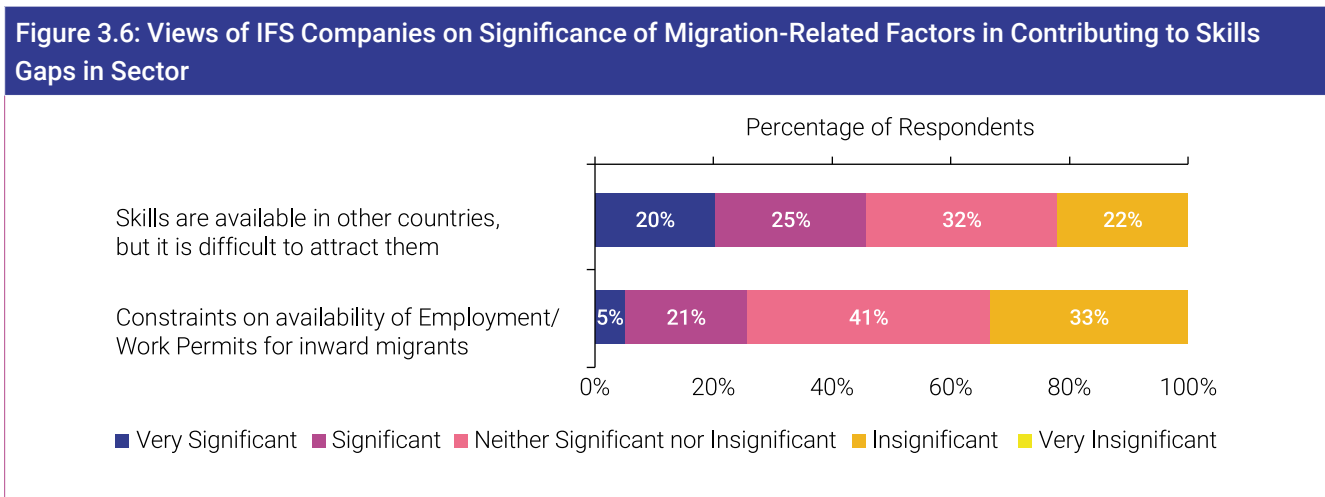
Note: Annual totals reflect quarterly averages for that year. Q4 data for 2023 was not yet published at time of analysis.

Another indicator of inward migration is available via Department of Enterprise, Trade and Employment statistics on employment permits. While these permits relate to non-EU and non-UK nationals, figures published up to the end of 2022 indicate that there have been substantial recent increases since 2020 in the numbers of employment permits issued to non-EU/EEA and non-UK nationals working in the Irish economy as a whole, and most pertinently in financial and insurance services, information and communications activities, and professional, scientific, and technical activities sectors (see Table 3.9).

Sector	2020	2021	2022	Total (2020-2022)
J - Information & Communication Activities	4,725	4,615	10,832	20,172
K - Financial & insurance Activities	977	1,094	3,351	5,422
M - Professional, Scientific & Technical Activities	153	236	1,460	1,849
Total of above sectors	5,855	5,945	15,643	27,443

Source: DETE, Employment Permit statistics, 2020-2022

The findings from Indecon’s survey research among firms in the high potential IFS sub-sectors also suggest that the attraction of suitably qualified migrants is proving difficult. In particular, the research found that 45% of responding firms indicated that difficulty in attracting skilled talent from abroad was a ‘very significant’ or ‘significant’ contributing factor to skills gaps. Constraints on the availability of employment permits for inward migrants was cited as a very significant or significant factor by 26% of respondents (see figure below).



Source: Indecon survey of IFS companies

3.5 Summary of Key Findings

This section examined the current and potential skills supply for international financial services industry.

New skills to the industry come from various sources, namely the education system, training and recruitment, and migration.

- Across fields of study of relevance to the IFS sector, business and administration represents the most popular area for new entrants, with between 3,500 and 4,000 new student registrations/entrants annually, although annual registrations have only increased by only 5.2% in total between 2016 and 2021. The next most popular areas are law and ICT, with between 1,200 and 1,700 first year registrations per annum, where entrants to law courses have increased by 44%. While annual registrations for economics courses have increased by 133% over the same period, at 245 registrations in 2021, absolute numbers remain relatively small. This is also the case in relation to finance, banking and insurance courses. There has been a decrease in broader ICT course entrants, although there have been increases in entrants to courses in the areas of database/network design and administration, and in software/applications development and analysis.
- Most IFS-related higher education courses tend to be male-dominated, with computer/IT-related courses overwhelmingly male-dominated (over 80% male). Law, marketing and advertising are the only relevant courses which are majority female, though there is a slightly more even split in the most popular course (business and administration). Building awareness of career opportunities and boosting the appeal of the IFS sector among female second- and third-level students will be important to improving diversity and inclusion and unlocking additional supply of skills for the sector.
- Among relevant disciplines/fields of study, business and administration-related courses consistently produce the highest annual output of higher education graduates, with this figure being 5,195 in 2021 (an increase of over 600 compared to 2016). Overall, all fields of study relevant to the IFS sector have seen an increase in the number of graduates compared to five years ago. However, of importance is whether the number of graduates in relevant areas is sufficient to meet current and future levels of skills demand, not only from the IFS sector but also the wider financial services sector and other sectors of the economy.
- Indecon's industry survey research suggests that the current level of supply of candidates at various qualification levels will be insufficient to meet the skills needs of the industry. For both current and future skills, doctoral-level degrees (i.e., NFQ Level 10) were deemed to have the most significant skills shortage, with 34% of respondents anticipating a significant skills shortage of these qualifications by 2027. Firms also judge that future skills shortage will be more pronounced than currently across all levels from Level 7 upwards, with NFQ Level 8 qualifications (i.e., honours bachelor's degree or equivalent) anticipated to have the biggest absolute increase in significant skills shortage.
- Further work is needed as a priority to develop a comprehensive listing of all IFS-relevant third-level courses delivered and under development and to establish details on course capacity and content. This is critical to establishing a definitive view on whether existing and planned capacity within the third level system is sufficient to meet the requirements of the IFS sector, including high potential sub-sectors.
- Respondents to Indecon's survey of IFS companies were supportive to the role that upskilling and reskilling can play in meeting the IFS sector's skills needs. Several industry bodies are currently, or are planning to, provide training to the sector. Increasing attention is being given to the potential for micro-credentials to provide employers with the opportunity to address workforce skills gaps, and re-skill as business and work models evolve.
- Indecon's research among firms in the high potential IFS sub-sectors suggests that the attraction of suitably qualified migrants is proving difficult. In particular, the research found that 45% of responding firms indicated that difficulty in attracting skilled talent from abroad was a 'very significant' or 'significant' contributing factor to skills gaps.

4

Assessment of Future Skill Needs and Scenarios for Demand

4.1 Introduction

In this section, the results of Indecon's detailed economic analysis and modelling are presented. We begin by presenting an overview assessment of the key sub-sectoral skills needs for the international financial services industry, leveraging recent research which explores skills trends in the industry. We focus on the growth of ESG and sustainable finance as a transformative skills area in the industry, as well as the rapid digital transformation of operational practices and the subsequent impact on skills needs.

The remainder of the section concerns our quantitative demand and supply modelling. Firstly, we outline two scenarios for the estimates of future skills demand to 2027, using our baseline (2022) employment estimate of 53,200. The first of these scenarios uses the results of our industry survey to estimate sub-sectoral growth rates and applies these growth rates to the baseline estimates. Scenario 2 uses the 'Update to Ireland for Finance' target figure of 5,000 net new jobs by 31st December 2026, to extrapolate alternative estimated sub-sectoral growth rates.

Using the findings from Section 3 as our basis, we estimate the expected level of future skills supply for the IFS sub-sectors, given recent trends in education and training output. Next, we combine our modelled supply and demand estimates to identify estimated current and future skills gaps and shortages. Lastly, we reconcile the findings from our quantitative modelling with our qualitative research to provide an overall assessment of the key skills and occupational gaps for the high-growth sub-sectors of the international financial services sector.

4.2 Qualitative Assessment of Skills Needs

As with any economic sector, there is inevitably uncertainty attached to projecting the likely growth path of the international financial services industry. However, it is evident that there will be a gradual transition away from the 'status quo', as current job and skills requirements evolve to meet the needs of the industry in the next five years and beyond. As noted in Future Jobs Ireland 2019:

"Technology continues to herald new ways of doing business and new economic opportunities. This presents challenges but also new possibilities - certain job roles will disappear or be redefined, and emerging job roles will require new and different skillsets."⁵¹

This indicates that the skills landscape is continuously evolving, which places further pressure on talent recruitment and development for IFS companies to meet the skills needs of the future. As discussed in more detail in Section 3.3, a key method to meet these evolving skills needs is to encourage a continuous learning and upskilling culture within organisations.⁵²

We begin by providing a qualitative overview of the key trends in skills needs for the international financial services industry. We focus in particular on the 'future-proof' skills, as identified by IFS Skillnet,⁵³ and the broader needs of the IFS industry. Next, we explore in more detail two key skills areas which are central to the growth and development of the IFS industry in the near, medium, and long term, and which will be central to the changing job landscape of the IFS sector in the coming years.

51. Government of Ireland (2019). 'Future Jobs Ireland 2019: Preparing Now for Tomorrow's Economy'. See: <https://enterprise.gov.ie/en/publications/publication-files/future-jobs-ireland-2019.pdf>

52. IFS Skillnet (2022). 'Financial Services in Ireland – Skills of the Future'. Financial Services Ireland (Ibec). July 11th 2022. See: <https://www.ibec.ie/connect-and-learn/industries/financial-services-leasing-and-professional-services/financial-services-ireland/talent-and-skills/skills-of-the-future>

53. Ibid. P.11.

These are:

- The integration of environmental, social and governance (ESG) standards and sustainable finance practices across all areas of financial services.
- The rapid digital transformation of international financial services, identified by the 2022 National Skills Bulletin as the key determinant in occupational demand in the IFS industry and, subsequently, a key contributing factor in industry skills gaps.⁵⁴

Future-Proof Skills

IFS Skillnet's 'Skills of the Future' report was published in 2022, around the same time as the midterm review of the Ireland for Finance strategy. The report was supported by Financial Services Ireland (FSI) and Skillnet Ireland and highlights a range of new skills which are required in Ireland's IFS sector. For this report, understanding of the current situation was obtained by one-to-one interviews, focus groups, a survey and desk research. The main objectives were as follows:

- Understand the sources of talent for the sector (early talent, international talent, and transition talent);
- Identify the sector-wide and sub-sector skills needs;
- Consider the perception of the sector as a career destination for all levels of talent vis-à-vis competing sectors such as technology; and,
- Explore the alignment of education and training provision offerings versus sectoral needs and make a number of tangible recommendations that will make a positive difference to talent and skills acquisition.

The report identified the key skills that financial services workforces will be required to have in the future.

These "future-proof", or transversal, skills are **"Skills that are typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge and that can be used in a wide variety of situations and work settings."**⁵⁵ The skills are organised into four categories as shown in Table 4.1.

Skill Category	Skills
Human Experience Skills	<ul style="list-style-type: none">• Emotional Intelligence• Communication• Empathy• Influencing• Collaboration• Teamwork
Reimagination Skills	<ul style="list-style-type: none">• Business Acumen• Curiosity• Creativity• Critical Thinking• Problem Solving
Future Currency Skills	<ul style="list-style-type: none">• Data Acumen• Digital Acumen• Design Thinking• Entrepreneurial Mindset• Capacity for Innovation• Global Mindset• Social Consciousness
Pivoting Skills	<ul style="list-style-type: none">• Adaptability• Learning Agility• Coping Skills• Resilience• Change Leadership

Source: Ibec

54. Solas (2022). 'National Skills Bulletin 2022'. October 2022. See: <https://www.solas.ie/f/70398/x/3554445a46/national-skills-bulletin-2022.pdf>

55. UNESCO TVETipedia Glossary. See: <https://unevoc.unesco.org/home/TVETipedia+Glossary/show=term/term=Transversal+skills#start>

The report identifies obstacles to ensuring a healthy flow of incoming talent to the financial services sector, including a shortage of well-rounded skill sets, comprising both role-specific hard skills (technical) and the above sought-after transversal skills needed by today's organisations. The importance of these transversal skills is underpinned by UNESCO, who note that “[Transversal skills] are increasingly in high demand for learners to successfully adapt to changes and to lead meaningful and productive lives.”⁵⁶

Additionally, financial services employers will have competition with other industries and with other sectors for the same skills to build their future workforces. To ensure that the future skill needs of the industry can be met, the report sets out a series of recommendations, with specific action points covering broad policy areas, including:

- Extending the good work that has already been in place in the industry, including leveraging talent initiatives such as IFS Skillnet, insurance and IFS apprenticeships and government partnerships;
- Attracting early talent in light of the fierce competition for talent from competing sectors;
- Attracting transition talent who may have previously been deterred from a career in international financial services;
- Broadening recruitment filters to maximise the size of the potential talent pool; and,
- Focusing on upskilling and reskilling as opportunities for progression in the IFS industry.

Luxembourg for Finance's 'Future Skills and Jobs in Finance'⁵⁷ paper aims to identify the hard and transversal skills that will be critical for employees in the future financial services industry and examines the trends that are reshaping the financial services industry. It reinforces the idea that the sector is evolving, necessarily transforming the roles and skills defining the industry. Technology and sustainability are leading this evolution – with innovation accelerating the pace of change. Notably, the report also identifies a mismatch between current skills and those skills deemed most desirable for the future. As well as advanced data analysis and mathematical skills, there is also an emphasis on the need for 'human experience' skills, focusing on building critical thinking, decision-making, and leadership skills. Clear trends which are shaping the future of the industry, as identified in the report, are indicated in Table 4.2.

56. Ibid.

57. Luxembourg for Finance (2021). 'Future Skills and Jobs in Finance'. See: <https://www.luxembourgforfinance.com/en/publication-mag/new-report-future-skills-and-jobs-finance/>

Table 4.2: Future Skills Requirements of the Financial Sector – Example of ‘Luxembourg for Finance’	
Skills and Occupational Requirements	Notes
Technical skills, particularly in automation	Highly skilled staff who are able to work closely with technology, particularly in developing and deploying technologies linked to automation will see high demand – this will require not only significant reskilling and upskilling on an industry level, but also a shift in the education that financial services talent receives.
Social and emotional skills	Financial professionals will spend more time on activities that require social and emotional skills, all the while leveraging on their expertise: be it technological, financial, people management, and others.
Leadership skills	Leadership skills, as well as demand for professionals who are able to take initiative, are set to increase.
Sustainability skills	Beyond their fiduciary duty to their clients, financial professionals also have a growing responsibility towards society and financing the transition towards net zero. Sustainability skills will therefore be key going forwards, not only to properly assess investments, but also to build internal ESG strategies.
Financial literacy and quantitative skills	Despite the automation drive, and the increased focus on client engaging activities, robust financial literacy and solid quantitative skills remain key to analysing, understanding and providing clients with recommendations based on financial data.
Legal, risk and compliance	The financial services landscape is becoming increasingly complex as regulations evolve and impact all areas of the sector. The functioning of legal and compliance teams is changing as well, forcing professionals in this space to become more strategically minded and tech-savvy to meet new demands.

Source: Luxembourg for Finance

Financial Literacy in the General Population

In January 2022, the European Commission and the OECD International Network on Financial Education (OECD-INFE) published their ‘Financial competence framework for adults in the European Union’⁵⁸, with a view to improving the overall financial literacy of adults in the European Union. The OECD’s PISA financial literacy assessment defines financial literacy as:

“...knowledge and understanding of financial concepts and risks, as well as the skills and attitudes to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life”.⁵⁹

The framework “**promotes a shared understanding of the financial competences adults need to make sound decisions on personal finance**”, covering four main areas: money and transactions; planning and managing finances; risks and reward; and the financial landscape. Across these four main areas, the framework also identifies key competences that are of direct relevance to digital finance and sustainable finance. The framework details a ‘checklist’ of competences (covering awareness, skills and attitudes) which can help to develop financial literacy in the population.

58. European Union/ OECD (2022). ‘Financial competence framework for adults in the European Union’. See: [Financial competence framework for adults in the European Union - OECD, 11th January 2022](#).

59. OECD (2019a). ‘PISA 2021 Financial Literacy Analytical and Assessment Framework. April 2019. P.18. See: [PISA 2021 FINANCIAL LITERACY ANALYTICAL AND ASSESSMENT FRAMEWORK \(oecd.org\)](#)

Furthermore, in September 2023, the European Commission and OECD published its 'Financial competence framework for children and youth in the European Union'⁶⁰, which likewise provides a set of outcome-based competences in financial literacy that children and youth in the EU will need, in order to make good decisions on personal finance. The framework is broken down into the same four main areas of financial literacy as in the adult version of the framework. The report has been developed with the following overarching goals⁶¹:

1. Be able to manage money effectively in the short and long-term.
2. Be able to make sound and informed financial decisions, be aware of their consequences and know where to find help.
3. Have a basic understanding of the economic and financial landscape.
4. Be adequately prepared for the economic and financial aspects of adult life.

Financially literate citizens **"can more safely and confidently participate in financial markets"** (OECD, 2019a). It follows then that an improvement in the overall financial literacy of the (current and future) Irish population, alongside increased engagement and awareness of financial markets that these competences could deliver, will have positive knock-on effects for the IFS industry. As more people become financially literate, the industry will appear less complex and become a more realistic career path for a wider portion of the population, thus broadening the talent pool for the industry.

Sustainable Finance/ ESG

As mentioned before, significant consideration was given as to whether Sustainable Finance and environmental, social, and governance (ESG) should be identified as a niche sub-sector in its own right. However, following engagement with industry experts, it was decided that issues relating to climate change, and specifically sustainable finance, were so cross-sectoral that it would be more appropriate to bring them out as a skills area itself.

The introduction of ESG standards across the IFS sector is becoming increasingly prominent, as organisations become more and more aware of the requirements of sustainable finance practices in light of Ireland's legally binding commitments to meet net-zero greenhouse gas emissions by 2050. About 69% of industry respondents indicated that 'sustainable finance' was the greatest opportunity for the Irish financial services sector.⁶²

ESG refers to a set of standards through which customers, workers and investors evaluate the sustainability and social impact of a business' operations. Meanwhile, 'sustainable finance' refers more specifically to the broad portfolio of financial products and services that take ESG standards into account.⁶³

The Irish economy continues to transition towards **"net zero"** in a bid to ensure that Ireland meets its legally binding greenhouse gas emissions reductions targets. As such, environmental, social, and governance (ESG) and related sustainable finance skills have consistently been identified as essential in addressing the IFS skills gap.

60. European Union/ OECD (2023). 'Financial competence framework for children and youth in the European Union'. See: [Financial competence framework for children and youth in the European Union - OECD, 27th September 2023](#).

61. Ibid. Pp 6-7.

62. IFS Skillnet (2022). 'Financial Services in Ireland – Skills of the Future'. Financial Services Ireland (Ibec). July 11th 2022. See: <https://www.ibec.ie/connect-and-learn/industries/financial-services-leasing-and-professional-services/financial-services-ireland/talent-and-skills/skills-of-the-future>

63. Diligent (2021). 'ESG and sustainable finance: What do you need to know?'. Published: June 4, 2021. See: <https://www.diligent.com/resources/blog/sustainable-finance>

It is difficult to overstate the impact that ESG and sustainable finance practices will have on the entire functioning of the IFS industry, including the nature of the jobs in the industry going forward. As Sustainable Finance Skillnet's 'Deep Dive Skills Report'⁶⁴ indicates, sustainable finance is quickly becoming mainstream, rapidly moving away from being a 'niche' component of the industry and necessitating a wholesale reconfiguration of the approach to international financial services.

In October 2021, Sustainable Finance Ireland published 'Ireland's Sustainable Finance Roadmap'.⁶⁵ Sustainable Finance Ireland aims to develop and promote Ireland as a world-leader in sustainable finance, through providing thought leadership, raising awareness on excellence and best practice, and building capacity in the sector. Sustainable Finance Ireland's 'Finance Green Ireland Committee' proposed the development of the roadmap as the action measure for inclusion in the Ireland for Finance Action Plan 2021. The roadmap focuses on the sustainable finance agenda through the lens of talent, innovation and building the right tools and skills in the industry. This is to be achieved through 18 roadmap actions, broadly covering five key pillars of: developing talent; industry readiness; leveraging digital; enabling environment; and promotion and communications.

The transition towards sustainable finance as a permanent fixture in the IFS industry brings with it opportunities, where Ireland can offer a world-leading, innovative financial sector in the context of a strong regulatory framework. However, these opportunities can only be realised alongside a rapid increase in ESG skills and awareness across the industry, which requires a multi-disciplinary and multi-sectoral approach.

Sustainable Finance Ireland's 'Sustainable Finance Skills Gap Report 2021' sets out a series of recommendations to ensure that the financial services industry can meet the future skills and talent needs underpinning the 'systemic shift'. These are defined across three key actions, namely:

- Increase the availability of technical training.
- Enable the right environment to share learning.
- Further research is required.⁶⁶

64. Sustainable Finance Skillnet (2019). 'Deep sector analysis of future Sustainable skills and talent requirements in Ireland'. See: <https://www.skillnetireland.ie/wp-content/uploads/2019/11/Sustainable-Finance-Skillnet-Deloitte-Report-Nov-2019.pdf>

65. Sustainable Finance Ireland (2021). 'Ireland's Sustainable Finance Roadmap'. October 2021. See: <https://www.skillnetireland.ie/wp-content/uploads/2021/10/Irelands-Sustainable-Finance-Roadmap-October-2021.pdf>

66. Sustainable Finance Ireland (2021). 'Ireland's Sustainable Finance Skills Gap Report 2021'. See: [Skills-Gap-Report.pdf \(sustainablefinance.ie\)](https://www.sustainablefinance.ie/Skills-Gap-Report.pdf)

Irish Funds published 'ESG Training Needs Analysis for the Funds Industry', which is intended to provide practical insights for the funds and asset management industry in terms of upskilling in the area of sustainable finance and ESG. It notes a number of challenges resulting in a "deficit" of ESG skills and knowledge in the IFS sector:

- Industry awareness of specific ESG requirements for roles and the awareness of relevant training courses available is very low.
- Company support for ESG training is insufficient and ESG training appears to be primarily employee-led rather than company led.
- There is a lack of available courses with shorter duration to attract "time-poor" senior and middle management levels.
- Many existing courses are not level or role-specific and it is difficult for participants to identify which courses are a fit for their role.
- Senior management in non-investment related roles tend to be much less comfortable explaining ESG concepts.

As such, a substantial amount of upskilling is required in the area of ESG and sustainable finance.

The paper sets out a number of recommendations for new, specialist courses to address these skills concerns. These include the introduction of courses in general ESG awareness; sustainable finance regulation; sustainability reporting and financial reporting; and sustainable finance risk oversight.

Some of these topics are covered by MicroCreds,⁶⁷ which, as previously discussed, is an education initiative led by the Irish Universities Association (IUA), in partnership with seven of the founding IUA universities. A micro-credential is a proof of the learning outcomes that a learner has acquired following a short learning experience. Micro-credentials provide employers with the opportunity to address workforce skills gaps, and re-skill as business and work models evolve. Table 4.3 lists relevant environmental, social, and governance courses offered by MicroCreds.

Table 4.3: IFS-Relevant MicroCreds Courses by Subject Topic - Environmental, Social and Governance
Energy Management for Organisations
Entrepreneurship for the Nature-Based Enterprise
Environmental Management for Organisations
Life Cycle Assessment
Prof Cert in Responsible and Sustainable Finance
Responsible Management and Leadership (ESG)

Source: MicroCreds.ie

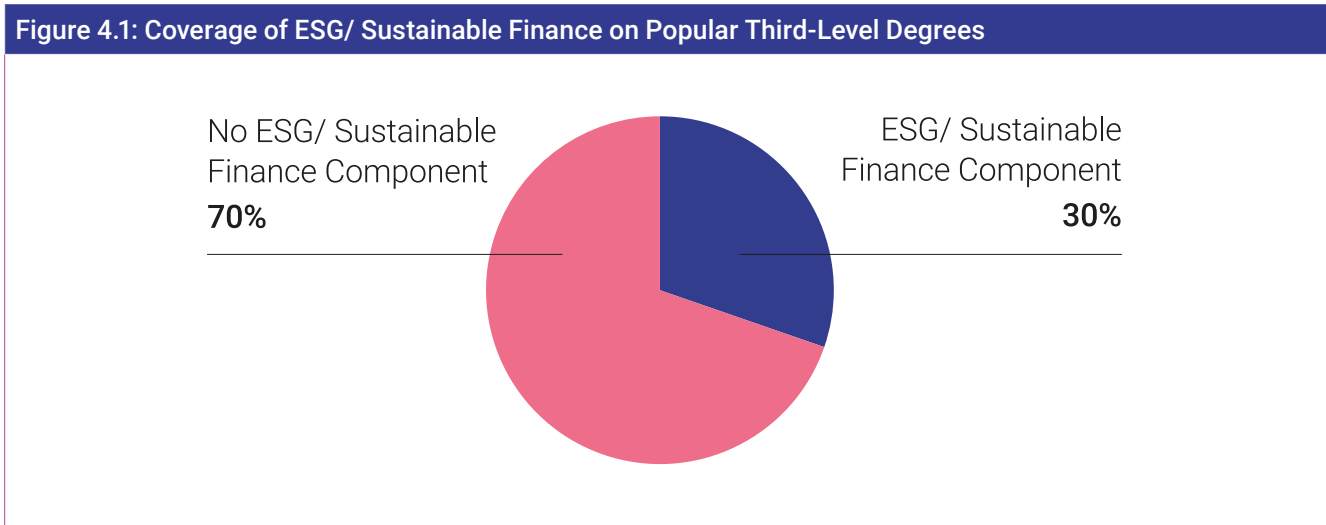
Sustainable Finance Skillnet – following engagement with various key stakeholders in the insurance industry – has recently published 'Insurance industry ESG knowledge and skills analysis 2023'⁶⁸ which aims to identify current ESG capabilities in the industry, and requirements for upskilling to meet the needs of the future. The report derived similar conclusions to the aforementioned Irish Funds paper, noting a lack of sufficient ESG expertise at senior management level. A large majority (94%) of the insurance industry were estimated to have had no formal ESG training. The report also suggested that 50% of the insurers face challenges in implementing their ESG strategy due to a lack of appropriate skills, but that an increase in the number of short, ESG-specific courses could help to bridge the skills gap.

67. See: <https://microcreds.ie/>

68. Sustainable Finance Skillnet (2023). 'Insurance industry ESG knowledge and skills analysis 2023'. See: <https://sfskillnet.sustainablefinance.ie/wp-content/uploads/2023/03/SFS-Insurance-ESG-Skills-Final-07.03.23-2.pdf>

Provision of ESG Skills Training on Third Level Courses

Despite the need for rapid progress in the development of ESG and sustainable finance competencies across the whole industry, current education and training provision within third level courses does not seem to be matching this need. A review of selected IFS-relevant higher education undergraduate degrees in Ireland shows that only around 30% of these courses have a notable ESG or sustainable finance component (Figure 4.1). The full list of third-level courses covered are outlined in Annex 4.



Source: Indecon analysis of Popular Third-Level Degree Courses

Digital Transformation

The global IFS industry has been marked by a rapid and wholesale digitalisation process, where new technologies are being integrated in to mainstream financial services. Oliver Wyman's 'State of Financial Services 2022'⁶⁹ research refers to this as a 'tectonic shift' between risk, data, and technology currently underpinning developments in the sector. This is driven by the slowing growth of more capital-intensive risk intermediation services relative to the faster growth of more capital-light services which are connected to data and value technology services. Traditional players in the industry – banks, insurance companies, and asset managers – now represent around 65% of industry value today, down from 90% 10 years ago. In response, many of the traditionally largest industry players are aiming to digitally transform their business activities in order to protect their existing customer base.

To support this digitalisation, it is increasingly essential that new staff are trained in data science and coding, and that suitable upskilling courses are available to existing staff. It was found that skills are needed at all levels across the industry – entry, competent, and advanced. These skills include basic and advanced data analysis and coding skills, but also more advanced technical skills such as cybersecurity, AI and machine learning. For example, Irish Funds has identified the most sought-after skills in cybersecurity as being:⁷⁰

- Incident Analysis;
- Network Vulnerability Analysis;
- Vulnerability Assessment Techniques; and,
- Cyber specific tools, e.g., Wireshark, Snort, Tcpdump.

69. Oliver Wyman (2022). "The Tectonic Shift Between Risk, Data, and Technology. The State of the Financial Services Industry 2022." See: <https://www.oliverwyman.com/our-expertise/journals/state-of-financial-services.html>

70. Irish Funds (2022). 'Irish Funds Sector Technology Skills Needs Analysis'. September 2022. See: <https://cdn.irishfunds.ie/x/7a1adf57d4/irish-funds-sector-technology-skills-needs-analysis-september-2022.pdf>

However, the proliferation in digital occupations in the IFS industry must also be supported by an increase in transversal skills in the industry. BCG identifies this as one of its “four big trends”⁷¹ for the modern labour market. Staff should be digitally competent, but equally adept at verbal communication, listening, and relationship building, to enable the benefits of digital technologies to be most appropriately translated to effective international financial services.

Elsewhere, a recent paper from Irish Funds⁷² explores the growing demand for cryptocurrency assets among investors, and the creation of opportunities for crypto products and services in Ireland. It notes that **“Distributed Ledger Technology (DLT) and cryptography have the potential to drive profound change across all industries and the financial services industry is no exception.”** The regulated investment funds sector is identified as potentially being an optimal vehicle through which these opportunities could be realised.

The paper sets out a series of recommendations in relation to QIAIFs (Qualifying Investor Alternative Investment Funds), RIAIFs (Retail Investor Alternative Investment Funds), UCITS (Undertakings for Collective Investment in Transferable Securities), and EU convergence through which Ireland could take advantage of the opportunities presented by crypto assets. From an industry perspective, these include:

- The continued support of the industry to the Government, Central Bank and industry stakeholders in procuring thought leadership and information notes to enable better understanding and higher levels of investor protection.
- The creation of a ‘Tokenisation Working Group’ which would assist in the work of the Department of Finance’s Fintech Steering Group.
- The inclusion of materials on crypto assets in financial literacy programmes for transition year students, which is being developed by the industry.

Artificial intelligence (AI), machine learning and big data are also set to dominate the international financial services industry in the near future. These are explored in an OECD paper⁷³ which outlines some of the opportunities, challenges and implications for policy makers. AI systems are **“machine-based systems with varying levels of autonomy that can, for a given set of human defined objectives, make predictions, recommendations or decisions using massive amounts of alternative data sources and data analytics referred to as ‘big data’.”**⁷⁴ AI is increasing in prominence as a feature of the international financial services industry. It offers opportunities to streamline the industry in various ways, including, among many others, in:

- the management of portfolio strategies;
- algorithmic trading;
- robo-advice and claims management;
- chat boxes for client services;
- anti-money laundering; and,
- natural language processing (NLP) and compliance processes.

To support the advancement of AI and machine learning in the industry, competency (and expertise) with Python is one of the most sought-after skills, alongside R, JavaScript and C++, the latter being the most popular programming language required for cryptocurrency and blockchain development.

71. BCG (2022). ‘Shifting Skills, Moving Targets, and Remaking the Workforce’. May 23rd 2022. See: <https://www.bcg.com/publications/2022/shifting-skills-moving-targets-remaking-workforce>

72. Irish Funds (2022). ‘Crypto Assets: Opportunities, risks and future possibilities for regulated investment funds in Ireland’. May 2022. See: <https://cdn.irishfunds.ie/x/64e81dd414/2022-05-6824-irish-funds-crypto-assets-whitepaper.pdf>

73. OECD (2021). ‘Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges, and Implications for Policy Makers’. See: <https://www.oecd.org/finance/financial-markets/Artificial-intelligence-machine-learning-big-data-in-finance.pdf>

74. OECD (2019c). ‘Recommendation of the Council on Artificial Intelligence’. OECD/LEGAL/0449. See: <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449>

However, though the opportunities that AI, machine learning and big data bring to the financial services industry are numerous, there are a number of associated risks with their integration as well. This has resulted in a debate among industry stakeholders on how best to regulate (if at all) their deployment in the IFS industry. The key challenge to policy makers is striking the correct balance between enabling innovation through the development of modern technologies, while also ensuring the protection of consumers and investors in a transparent way.

In May 2019, 42 countries adopted the OECD's Principles on Artificial Intelligence.⁷⁵ This represented the first set of intergovernmental guidelines on AI, which aim to define the international standards which will ensure that AI systems and technologies are **"robust, safe, fair and trustworthy"**. The principles state that:⁷⁶

1. AI should benefit people and the planet by driving inclusive growth, sustainable development and well-being.
2. AI systems should be designed in a way that respects the rule of law, human rights, democratic values and diversity, and they should include appropriate safeguards – for example, enabling human intervention where necessary – to ensure a fair and just society.
3. There should be transparency and responsible disclosure around AI systems to ensure that people understand when they are engaging with them and can challenge outcomes.
4. AI systems must function in a robust, secure and safe way throughout their lifetimes, and potential risks should be continually assessed and managed.
5. Organisations and individuals developing, deploying or operating AI systems should be held accountable for their proper functioning in line with the above principles.

In conjunction with these principles, the OECD recommends that governments:

- Facilitate public and private investment in research and development to spur innovation in trustworthy AI.
- Foster accessible AI ecosystems with digital infrastructure and technologies, and mechanisms to share data and knowledge.
- Create a policy environment that will open the way to deployment of trustworthy AI systems.
- Equip people with the skills for AI and support workers to ensure a fair transition.
- Co-operate across borders and sectors to share information, develop standards and work towards responsible stewardship of AI.

As with ESG and Sustainable Finance, a number of these key subject and skills area are covered by MicroCreds courses, which are listed in the next table.

75. See: <https://oecd.ai/en/ai-principles>

76. OECD (2019b). 'Forty-two countries adopt new OECD Principles on Artificial Intelligence'. Published online 22nd May 2019. See: <https://www.oecd.org/science/forty-two-countries-adopt-new-oecd-principles-on-artificial-intelligence.htm>

Table 4.4: Examples of IFS-Relevant MicroCreds Courses by Subject Topic – Digital Skills

Advanced Data Programming with R
Advanced Data Storytelling
Advanced Practices of Classification
Artificial Intelligence and Machine Learning
Artificial Intelligence Strategy and Transformation
Bayesian Analysis
Cybersecurity Law
Data Analytics
Data Analytics with R
Data Programming with C
Data Programming with Python
Data Programming with R
Data Programming with SAS
Designing and Building Interactive Online Training
Digital Competences
Digital Literacy and Young People
Digitalisation of Process
Ethics and Law for Artificial Intelligence
Fundamentals of Programming
Introduction to Data Analytics
Introduction to Data Analytics/ Visualisation & Machine Learning
Introduction to Data Communications
Introduction to Emerging Technologies
Introduction to Scientific Computing in Artificial Intelligence
Log Files and Event Analysis
Machine Learning and Natural Language Processing
Machine Vision and Image Processing
Natural Language Processing: An Introduction
OT-ICS Networks and Protocols
Predictive Analysis 1
Statistical Machine Learning
Statistical Network Analysis
Time Series

Source: MicroCreds.

Note: this is not a comprehensive listing.

Impact of Digitalisation on IFS Occupations

The rapid digital transformation of the IFS industry is changing the landscape of skills requirements that IFS employees will need in order to navigate the challenges and opportunities facing the industry. However, this digitalisation may also impact on the types and number of jobs that are available, or required, as well. The acceleration in usage of AI and Robotic Process Automation (RPA) in financial services, which can aid in addressing issues of efficiency and productivity, is resulting in the automation of (repetitive) tasks that had hitherto been performed by humans.⁷⁷ These include, for example: account opening and management; checks and processes involved in mortgage and lending; and customer services, among many others.

A 2018 PWC report⁷⁸ categorises ‘three waves of automation’ that may unfold in the next couple of decades:

1. Early 2020s: **The ‘algorithmic’ wave.** Typified by the gradual automation of analysis, low job displacement is expected, but financial services may be more vulnerable at this stage owing to the prevalence of algorithmic assessments in financial services.
2. Late 2020s: **The ‘augmentation’ wave.** As technologies mature, they will be increasingly rolled out in autonomous form, thus steadily increasing displacement of existing jobs.
3. Mid 2030s: **The ‘autonomy’ wave.** It is estimated that up to 30% of jobs across all sectors could be automated by this stage, including the automation of vehicles and machines in manual tasks.

It remains unclear exactly how the automation of international financial services will affect demand for jobs. In the short term (i.e., the scope of this report), job displacement may be relatively low, at just 2% according to the aforementioned PWC report. However, this figure could be as high as 19% by the late 2020s.⁷⁹

Importantly too, automation and AI won’t just replace jobs, but will also **create** them. Research by KPMG suggests that 69% of companies believe that new roles will replace roles lost to automation in the short term.⁸⁰ For example, AI systems will require engineers and data analysts for their implementation, design and management. In addition, while AI may be well equipped to improve efficiencies in relation to repetitive, manual tasks, this will increase the opportunities for workers to focus on more high-value activities related to analysis, creativity, critical reasoning and design.⁸¹ While AI can complement workers when it comes to these ‘transversal’ skills, it cannot replace them. In this way, it might be more appropriate to talk about job **transformation** rather than job **displacement** when it comes to AI, and thus it is important that the labour force is suitably skilled to match this transformation.

While the overall impacts of automation challenging to predict, what is known is that automation and AI will continue to grow in prominence in the IFS industry. It is crucial, therefore, that governments and business work together to ensure that the workforce is suitably trained to adequately adjust to these new technologies, and to capitalise on the job opportunities created from this automation.

77. International Banker (2021). ‘The Impact of Robotic Process Automation on Financial Services’. January 11th 2021. See: <https://internationalbanker.com/technology/the-impact-of-robotic-process-automation-on-financial-services/>

78. PWC (2018). ‘Will robots really steal our jobs? An international analysis of the potential long term impact of automation’. See: <https://www.pwc.co.uk/economic-services/assets/international-impact-of-automation-feb-2018.pdf>

79. Ibid. P.16.

80. KPMG (2020). ‘KPMG CIO Survey 2020’. See: <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2020/10/harvey-nash-kpmg-cio-survey-2020.pdf>

81. Forbes (2023). ‘How does artificial intelligence create new jobs?’. July 26th 2023. See: <https://www.forbes.com/sites/forbesbusinesscouncil/2023/07/26/how-does-artificial-intelligence-create-new-jobs/>

The quantitative modelling in this report does not **directly** consider the occupational impacts (both in type and number) of automation in the IFS industry, particularly given the uncertainty on how automation will affect net demand for jobs in the short term. However, in asking firms to provide an estimate of their future occupational needs to 2027, it is assumed that firms have considered the impacts of automation and digital technologies on their future occupational requirements – both in terms of the **type** and **quantity** – and therefore that this is reflected in their reported figure.

Analysis of In-Demand Qualifications

As part of the survey, respondents were asked to identify current and future formal qualifications that are considered to be most in-demand in the sector. A wide range of qualifications were suggested. These ranged from specific courses and formal industry qualifications to broader qualifications including general third-level degrees. An increase in the number of employees with these qualifications will enable companies in each of the identified sub-sectors to more appropriately address the skills and knowledge gaps, as identified above.

Based on the findings of Indecon's research among companies and from our review of existing sectoral research, the most in-demand current and future qualifications relevant to the IFS sub-sectors on the whole are:

- Formal accountancy, financial, insurance and actuarial qualifications, including:
 - » ACA
 - » CPA
 - » ACCA
 - » QFA
 - » CFA
 - » CIP
 - » APA
 - » MDI
 - » ACII
- Risk and compliance qualifications (e.g., Licentiate of Association of Compliance Officers)
- Third-level, masters and PhD degrees. Qualifications most commonly cited include business, finance, economics, MBA, investment.
- IT qualifications
- Data analysis qualifications
- Project management qualifications

Annex 2 includes a more detailed breakdown of the most in-demand current and future qualifications by sub-sector.

4.3 Modelling of Future Skills Demand

To comprehensively assess the level of expected demand in the IFS sub-sectors, Indecon has modelled two alternative scenarios for projected growth in demand/employment from 2022 to 2027.

Scenario 1 is informed by an analysis of responses to survey research among IFS companies. Survey respondents were asked to provide estimates of future (2027) employment headcount, alongside their estimates of baseline (2022) employment. This allowed a direct comparison of the estimated growth rate in employment by sub-sector using survey results.

These growth rate estimates were then applied to the grossed-up, estimated baseline (2022) employment figures, to obtain estimates for additional sectoral employment over the period to 2027.

The results of this modelling process are shown in Table 4.5.

Using this approach, we estimate a total additional employment headcount of 9,310 to 2027 across the sub-sectors. The joint asset management, and investment funds and securities services sector (where these two sectors have been combined for the purposes of the modelling) is estimated to have the highest additional employment headcount to 2027, at 4,435. Inevitably, this means that these sectors are projected to remain the largest of the sub-sectors, with total future employment estimated at 23,435. The next largest sub-sector is estimated to be insurance and reinsurance, though with 8.1% growth it is also expected to have the smallest overall growth in the time period. Aircraft leasing and finance, though estimated to remain the smallest sub-sector in terms of total employment, is expected to have the largest estimated sectoral growth to 2027, at 40.3%.

Sub-sector	Estimated Sectoral Growth to 2027	Estimated Additional Employment Headcount to 2027	Estimated Future Employment Headcount – 2027
Fintech & Payments	28.7%	1,053	4,729
Asset Management, Investment Funds and Securities Services	23.3%	4,435	23,435
Wholesale Capital Markets and International Banking	12.5%	1,666	14,992
Insurance & Reinsurance	8.1%	1,205	16,042
Aircraft Leasing & Finance	40.3%	950	3,311
Total	17.5%	9,310	62,510

Source: Indecon analysis

Scenario 2 is informed by the Update to Ireland for Finance’s employment target of **“5,000 net new jobs by 2026”** for the IFS sector as a whole. At a constant annual growth, this implies a target of 6,250 new jobs for the whole IFS industry by 2027, in turn implying a target of **5,938** new jobs for our identified niche sub-sectors (when applying the 95% coverage parameter). Overall, this gives an estimated growth rate of **11.2%** for the IFS sub-sectors between 2022 and 2027.

In order to calculate additional employment demand by sub-sector, we computed the ratios of sub-sectoral growth to overall sectoral growth in Scenario 1, and then applied these same ratios to the total growth rate of 11.2% for Scenario 2, thus giving estimated growth rates per sub-sector. The results of this modelling analysis for Scenario 2 are shown in Table 4.6.

As with Scenario 1, the asset management, and investment funds and securities services sector is anticipated to have the highest level of estimated additional employment to 2027, at 2,829. This is closely followed by the wholesale capital markets and international banking, and insurance and reinsurance sub-sectors. As with Scenario 1, however, the aircraft leasing and finance sector is projected to have the highest estimated sectoral growth to 2027, at 25.7%.

Table 4.6: Skills Demand Projections – Estimated Employment Growth 2022-2027 by Sub-Sector – Scenario 2

Sub sector	Estimated Sectoral Growth to 2027	Estimated Additional Employment Headcount to 2027	Total Estimated Future Employment Headcount – 2027
Fintech & Payments	18.3%	672	4,347
Asset Management, Investment Funds and Securities Services	14.9%	2,829	21,829
Wholesale Capital Markets and International Banking	8.0%	1,062	14,389
Insurance & Reinsurance	5.2%	769	15,606
Aircraft Leasing & Finance	25.7%	606	2,967
Total	11.2%	5,938	59,138

Source: Indecon analysis

Occupational Requirements

Respondents to Indecon’s survey of IFS companies were also asked to provide an estimate of current and future employment at an **occupational level**. Occupational categories were identified by Indecon, in line with standardized occupational categories for ‘business and financial occupations’ used by SOLAS’s Skills and Labour Market Research Unit (SLMRU),⁸² and respondents provided estimates of their employment along these groupings. However, to ensure maximum coverage, there was also an open-ended section which allowed respondents to identify their own relevant occupational categories⁸³. As such, there was a wide array of occupational categories provided throughout survey responses. For the purposes of analysis and modelling, these occupations have been aggregated to provide broader occupational categories. However, a full listing of the additional future occupational categories given by survey respondents is provided in Annex 5.

To estimate the level of current employment per occupational category under both scenarios, we calculated the survey-based shares of each occupational category in terms of total employment. These shares were then applied to the baseline employment figure of 53,200, to provide estimates of how total employment is split across occupational categories. This process was repeated in our estimates of future occupational demand, applying the occupational shares to the **additional** demand estimated under both Scenario 1 and Scenario 2. A similar approach was taken to identify the occupational needs at sub-sectoral level, where occupational shares were applied to the baseline (2022) employment figures for each sub-sector.

It is important to note that, although respondents were asked to provide employment estimates for 2022 and 2027 only, the actual employment and occupational transition towards 2027 will be a steady, transformative process from the jobs that exist today (in terms of both type and quantity) to the jobs that may exist by 2027.

We present, firstly, the results of the skills demand projections by occupational grouping for the IFS sub-sectors as a whole, before highlighting specific occupational groupings for each of the niche sub-sectors. **It should be noted, however, that the level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level.**

82. See, for example, the SOLAS Labour Market Information (LMI) Portal: <https://smartchoices.ie/dashboard>

83. As discussed previously, in asking firms to provide an estimate of their future occupational needs to 2027, it is assumed that firms have considered the impacts of automation and digital technologies on the types of future occupational requirements and, therefore, have considered any associated job losses when providing estimates of future employment needs.

All Sub-Sectors

For both scenarios, the current largest estimated occupational employment group is accountants, tax experts, insurance underwriters and claims. This is followed by the broader sales and marketing group, and IT professionals. Table 4.7 presents the skills demand projections per occupational grouping under Scenario 1 for the combined sub-sectors, which identified an additional skills demand of 9,310 by 2027. IT professionals are expected to make up the highest proportion of **this additional demand, followed by accountants etc., and the broad investment professionals group. However, the largest percentage increase in demand (not including the 'other' category), is expected to come from the risk management and compliance professionals occupational category.**

Table 4.7: Skills Demand Projections – Estimated Employment Growth 2022-2027 by Occupational Grouping – Scenario 1 – Selected Occupations*

Occupational Groupings	Existing Employment (2022)	Estimated Additional Demand – 2022-2027	Estimated Total Demand - 2027	Percentage Change – 2022-2027
Accountants, tax experts, insurance underwriters and claims	13,155	1,013	14,168	7.7%
Sales and Marketing, Commercial, Customer Services and Product Development	8,963	937	9,901	10.5%
IT Professionals	7,426	2,069	9,495	27.9%
Investment Management Professionals, Investment Fund Specialists, Asset Management, Distribution and Oversight, Portfolio Analysts and Investor Services	6,429	1,703	8,132	26.5%
Financial accounts managers, financial managers and directors, financial admin occupations	5,085	1,070	6,156	21.0%
Management consultants, business and financial analysts and project managers	3,889	587	4,476	15.1%
Actuaries, economists and statisticians	2,699	572	3,271	21.2%
Operations, Administration, HR and Facilities	2,022	185	2,207	9.2%
Risk Management, Risk and Compliance Professionals, Money Laundering Reporting Officers (MLROs), ManCo Professionals	1,839	660	2,499	35.9%
Legal professionals and legal associates	1,378	307	1,685	22.3%
Other	313	206	519	65.8%
Total	53,200	9,310	62,510	17.5%

Source: Indecon analysis

*** Note:** The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

Table 4.8 shows the skills demand projections for the combined sub-sectors, by occupational grouping for Scenario 2. We apply the same methodology to identify how the additional 5,938 jobs demanded under this option will be spread across the various occupational categories. As before, it is anticipated that risk and compliance, IT investment, and financial roles will see the highest percentage change in demand between 2022 and 2027. It is anticipated that the broader accountancy, tax experts etc. occupational grouping will be the largest in terms of **total** employment.

Table 4.8: Skills Demand Projections – Estimated Employment Growth 2022-2027 by Occupational Grouping – Scenario 2 – Selected Occupations*

Occupational Groupings	Existing Employment (2022)	Estimated Additional Demand – 2022-2027	Estimated Total Demand – 2027	Percentage Change – 2022-2027
Accountants, tax experts, insurance underwriters and claims	13,155	646	13,801	4.9%
Sales and Marketing, Commercial, Customer Services and Product Development	8,963	598	9,561	6.7%
IT Professionals	7,426	1,319	8,745	17.8%
Investment Management Professionals, Investment Fund Specialists, Asset Management, Distribution and Oversight, Portfolio Analysts and Investor Services	6,429	1,086	7,516	16.9%
Financial accounts managers, financial managers and directors, financial admin occupations	5,085	683	5,768	13.4%
Management consultants, business and financial analysts and project managers	3,889	374	4,264	9.6%
Actuaries, economists and statisticians	2,699	365	3,064	13.5%
Operations, Administration, HR and Facilities	2,022	118	2,140	5.8%
Risk Management, Risk and Compliance Professionals, Money Laundering Reporting Officers (MLROs), ManCo Professionals	1,839	421	2,260	22.9%
Legal professionals and legal associates	1,378	196	1,574	14.2%
Other	313	131	445	42.0%
Total	53,200	5,938	59,138	11.2%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

Fintech and Payments

Table 4.9 shows that, based on our methodology, customer services professionals make up the largest occupational group. However, as before, IT professionals are expected to be in highest demand in absolute terms.

Table 4.9: Total Estimated Employment Per Occupational Category - Fintech and Payments, Scenario 1 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Customer Services	2,123	182	2,305	8.6%
Risk, Compliance, and Anti Money Laundering Professionals	637	73	710	11.4%
IT Professionals	411	381	793	92.7%
Financial accounts managers, financial managers and directors and financial admin occupations	332	163	495	49.3%
All other occupations	172	254	427	147.4%
Total	3,676	1,053	4,729	28.7%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

As shown in Table 4.10, similar conclusions can be drawn for Scenario 2. High proportionate demand is expected for financial accounts managers, financial managers, and directors. IT professionals are expected to be in highest demand in absolute terms.

Table 4.10: Total Estimated Employment Per Occupational Category - Fintech and Payments, Scenario 2 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Customer Services	2,123	116	2,239	5.5%
Risk, Compliance, and Anti Money Laundering Professionals	637	46	683	7.3%
IT Professionals	411	243	655	59.1%
Financial accounts managers, financial managers and directors and financial admin occupations	332	104	436	31.4%
All other occupations	172	162	335	94.0%
Total	3,676	672	4,347	18.3%

Source: Indecon analysis

Asset Management, Investment Funds and Securities Services

There was a wide range of relevant occupations considered for the joint asset management and investment funds and securities services sector. Table 4.11 shows the estimated employment per occupational category under Scenario 1. The wider accountants and tax experts group is the largest in terms of current employment. Investment professionals, understandably, also form a share of employment in this sector. This is closely followed by the operation, administration and HR group. The largest projected growth, however, is estimated to come in the risk and compliance professionals category, while IT professionals are also forecast to be in high demand.

Table 4.11: Total Estimated Employment Per Occupational Category - Asset Management and Investment Funds and Securities Services, Scenario 1 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Accountants, tax experts, insurance underwriters and claims	5,940	475	6,415	8.0%
Investment Management Professionals, Investment Fund Specialists, Asset Management, Distribution and Oversight, Portfolio Analysts and Investor Services	5,677	582	6,259	10.2%
Financial accounts managers, financial managers and directors and financial admin occupations	2,271	632	2,902	27.8%
IT Professionals	1,681	1,384	3,064	82.3%
Shareholder services, Client/Product Management, and Service/Development	1,257	312	1,569	24.8%
Risk Management, Risk and Compliance Professionals, Anti Money Laundering and ManCo Professionals	535	461	996	86.2%
Operations, Administration and HR	500	114	613	22.7%
All other occupations	1,141	475	1,616	41.7%
Total	19,000	4,435	23,435	23.3%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

Similar results are observed under Scenario 2, as shown in Table 4.12. Risk and compliance, and IT professionals, as above, are anticipated to be in high demand.

Table 4.12: Total Estimated Employment Per Occupational Category – Asset Management and Investment Funds and Securities Services – Scenario 2 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Accountants, tax experts, insurance underwriters and claims	5,940	303	6,243	5.1%
Investment Management Professionals, Investment Fund Specialists, Asset Management, Distribution and Oversight, Portfolio Analysts and Investor Services	5,677	371	6,048	6.5%
Financial accounts managers, financial managers and directors and financial admin occupations	2,271	403	2,674	17.7%
IT Professionals	1,681	883	2,563	52.5%
Shareholder services, Client/Product Management, and Service/Development	1,257	199	1,456	15.8%
Risk Management, Risk and Compliance Professionals, Anti Money Laundering and ManCo Professionals	535	294	829	55.0%
Operations, Administration and HR	500	72	572	14.5%
All other occupations	1,141	303	1,444	26.6%
Total	19,000	2,829	21,829	14.9%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

Insurance and Reinsurance

The insurance and reinsurance sub-sector is dominated by customer services, sales, marketing, as well as accountants, tax experts, insurance underwriters and claims professionals. Table 4.13 shows that, for Scenario 1, these broader occupational categories make up almost half of estimated employment. In terms of additional demand, IT professionals are expected to have the highest additional demand of 212, but risk and compliance professionals are expected to have the highest percentage growth in demand.

Table 4.13: Total Estimated Employment Per Occupational Category - Insurance and Reinsurance – Scenario 1 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Customer Services/Care, Sales, Marketing, Product Development	3,890	147	4,037	3.8%
Accountants, tax experts, insurance underwriters and claims	3,478	186	3,664	5.4%
IT Professionals	2,057	212	2,270	10.3%
Management consultants, business and financial analysts and project managers	1,729	161	1,890	9.3%
Actuaries, economists and statisticians	1,116	148	1,264	13.3%
Financial accounts managers, financial managers and directors and financial admin occupations	1,055	35	1,091	3.3%
Risk, Compliance, 2nd Line Defence Roles and Anti Money Laundering Professionals.	496	187	682	37.6%
All other occupations	1,015	128	1,143	12.6%
Total	14,837	1,205	16,042	8.1%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

Table 4.14 suggests that similar conclusions can be drawn for Scenario 2, though there is a more pronounced emphasis on the demand for risk and compliance professionals, relative to other groups.

Table 4.14: Total Estimated Employment Per Occupational Category - Insurance and Reinsurance – Scenario 2 – Selected Occupations*				
Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Customer Services/Care, Sales, Marketing, Product Development	3,890	94	3,984	2.4%
Accountants, tax experts, insurance underwriters and claims	3,478	119	3,597	3.4%
IT Professionals	2,057	135	2,193	6.6%
Management consultants, business and financial analysts and project managers	1,729	103	1,832	5.9%
Actuaries, economists and statisticians	1,116	94	1,210	8.5%
Financial accounts managers, financial managers and directors and financial admin occupations	1,055	23	1,078	2.1%
Risk, Compliance, 2nd Line Defence Roles and Anti Money Laundering Professionals.	496	119	615	24.0%
All other occupations	1,015	82	1,097	8.0%
Total	14,837	769	15,606	5.2%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

International Banking and Wholesale Capital Markets

Table 4.15 shows that IT professionals make up almost half of the occupational breakdown in the international banking and wholesale capital markets sub-sector. However, it is actuaries, economists, and statisticians who are projected to have the highest absolute additional demand of 943, and the highest percentage growth. There is also anticipated growth in demand for risk, compliance, treasury, and anti-money laundering (AML) professionals.

Table 4.15: Total Estimate Employment Per Occupational Category - International Banking and Wholesale Capital Markets, Scenario 1 – Selected Occupations*				
Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
IT Professionals	6,571	660	7,231	10.0%
Actuaries, economists and statisticians	2,567	943	3,510	36.7%
All other occupations	4,189	63	4,252	1.5%
Total	13,326	1,666	14,992	12.5%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

The occupational breakdowns for these sectors under Scenario 2 are shown in Table 4.16. Under this scenario, 601 additional actuaries, economists and statisticians are forecast as being required to meet the employment demands to 2027. There is also a noticeable demand for IT professionals across both scenarios.

Table 4.16: Total Estimate Employment Per Occupational Category - International Banking and Wholesale Capital Markets, Scenario 2 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
IT Professionals	6,571	421	6,992	6.4%
Actuaries, economists and statisticians	2,567	601	3,168	23.4%
All other occupations	4,189	40	4,229	1.0%
Total	13,326	1,062	14,389	8.0%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

Aircraft Leasing and Finance

Despite being the smallest of the identified niche sub-sectors, in terms of overall employment, there is a wide array of occupational requirements for the aircraft leasing and finance sector, as shown in Table 4.17. Unsurprisingly, owing to the changing regulatory environment of this sector, tax experts will be in high demand – the broad accountants, tax experts etc group forms the largest proportion of this sector. Elsewhere, sales and marketing, legal professionals, and financial professionals have prominent shares as well. The broad financial professionals group, as well as the management consultant occupational category are expected to have the highest percentage change in demand.

Table 4.17: Total Estimated Employment Per Occupational Category - Aircraft Leasing and Finance, Scenario 1 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Accountants, tax experts, insurance underwriters and claims	423	151	575	35.7%
Financial accounts managers, financial managers and directors and financial admin occupations	360	216	576	60.0%
Sales and Marketing	328	43	371	13.2%
Legal professionals and legal associates	307	115	422	37.5%
Management consultants, business and financial analysts and project managers	159	108	267	68.0%
All other occupations	783	317	1,100	40.4%
Total	2,361	950	3,311	40.3%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

The results for the occupational breakdown of employment for this sector under Scenario 2 are shown in Table 4.18. Here, we estimate that there will be an additional requirement of 138 financial professionals to meet the demands of the sector. The technical nature of this industry means that there is also a high level of demand for more 'niche' roles, including transition managers and technical employees.

Table 4.18: Total Estimated Employment Per Occupational Category - Aircraft Leasing and Finance, Scenario 2 – Selected Occupations*

Occupational Groupings	Existing Employment	Estimated Additional Demand	Estimated Total Demand	Percentage Change
Accountants, tax experts, insurance underwriters and claims	423	96	520	22.8%
Financial accounts managers, financial managers and directors and financial admin occupations	360	138	498	38.3%
Sales and Marketing	328	28	356	8.4%
Legal professionals and legal associates	307	73	381	23.9%
Management consultants, business and financial analysts and project managers	159	69	228	43.4%
All other occupations	783	202	986	25.8%
Total	2,361	606	2,967	25.7%

Source: Indecon analysis

* Note: The level of occupational detail feasible was constrained by reduced sample sizes at sub-sector level

4.4 Assessment of Potential Sources to Address Skills Demand

As discussed in the previous section, the demand for new skills can be met from three sources: education; training and recruitment; and migration. The quantitative supply modelling in this report focuses on the potential supply from the education system. Doing so enables a high-level assessment of whether the current education and training outputs will be sufficient to meet the needs of the industry, on a purely headcount basis. This means that any shortfall in headcount employment identified in our modelling would need to be filled via the other supply sources, namely migration, training, or recruitment from other non-IFS sectors.

Following the analysis of current skills supply, as outlined in Section 3, Indecon has undertaken a detailed modelling exercise to assess the extent to which the current skills supply will be sufficient to meet the skills demand for the identified high-growth IFS sub-sectors, from 2022 to 2027. We firstly estimate the number of graduate entrants to IFS sub-sectors from Irish higher education institutions, by forecasting the number of Level 7+ HEA and QQI graduates out to 2027, using the average growth rate of graduates per course. These findings are shown in Table 4.19.

Table 4.19: Graduates by Field of Study, HEA and QQI Level 7+

	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Economics	475	550	605	520	578	642	713	792	879
Accounting and taxation	1,170	1,075	1,340	1,460	1,519	1,580	1,643	1,709	1,777
Finance, banking and insurance	665	840	910	895	953	1,014	1,079	1,149	1,223
Law	1,765	1,820	2,005	2,475	2,562	2,652	2,745	2,842	2,942
Business and admin	8,565	9,659	9,888	10,186	10,844	11,559	12,338	13,187	14,112
Marketing and advertising	1,320	1,510	1,685	2,065	2,179	2,300	2,428	2,562	2,704
ICT	3,972	4,767	4,791	4,926	5,354	5,835	6,377	6,988	7,676
Database & network design & admin	260	370	450	370	397	426	456	489	525
Software and applications development and analysis	1,595	1,845	2,185	2,390	2,613	2,856	3,122	3,413	3,731
Total	19,787	22,436	23,859	25,287	26,997	28,863	30,901	33,129	35,569

Source: Indecon analysis of HEA and QQI data

*Includes Business, Administration and Law QQI

**Includes ICT QQI

Next, we applied employment percentages from the CSO's Graduate Outcomes Survey to these forecast HEA and QQI graduate numbers. The Graduate Outcomes Survey provides data on the number of graduates, by field of study, who work in the financial services industry following graduation. Table 4.20 below shows the average percentage of graduates from relevant courses, who are estimated to work in the broad financial, real estate, and professional services industry, by relevant academic discipline.

Discipline	Years Since Graduation							
	1	2	3	4	5	6	7	8
Business, Administration and Law	43%	49%	50%	48%	45%	44%	42%	41%
Social Sciences, Journalism and Information	23%	27%	27%	26%	26%	24%	24%	24%
Natural Sciences, Mathematics and Statistics	21%	23%	24%	23%	22%	21%	20%	19%
Information and Communication Technologies	20%	21%	21%	21%	21%	20%	21%	22%

Source: Indecon analysis of CSO data

Since the Graduate Outcomes Survey online provides data at a higher sectoral level than required, the graduate number figures were adjusted downwards to reflect the estimated employment coverage of IFS sub-sectors for the **broad** Financial Services and Legal industries as a whole (estimated to be 19.7%). The resulting set of figures gives us the expected number of graduates in relevant fields of study who will work in the IFS sub-sectors.

Table 4.21 reflects the results of this modelling process, showing the total expected new graduate entrants to IFS sub-sectors over the period 2022-27. Based on current trends of graduate entry, Indecon estimates that 11,075 new graduates will enter these sub-sectors by 2027. It is expected that just over half of these graduates will come from business and administration related degrees, with law and ICT graduates making up the next highest proportion.

Academic Year	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	Estimated Total New Graduate Entrants – 2022-2027
Relevant Disciplines/Fields of Study						
Economics	30	35	38	36	40	179
Accounting and taxation	145	157	159	146	152	759
Finance, banking and insurance	91	101	104	98	105	499
Law	245	263	265	243	252	1,268
Business and administration	1,038	1,147	1,191	1,128	1,207	5,711
Marketing and advertising	113	124	129	116	123	605
ICT	226	245	268	275	303	1,317
Database and network design and administration	17	18	19	19	21	94
Software and applications development and analysis	111	120	131	134	147	643
Total	2,016	2,210	2,304	2,195	2,350	11,075

Source: Indecon analysis of HEA and QQI Awards Data

To estimate the total future supply in the industry, we combine the estimates from current employment, HEA, QQI and apprenticeships data. The current employment base is also adjusted for replacement requirements. The replacement rate is defined in the National Skills Bulletin 2015: **“The replacement rate is based on the number of identified transitions from employment to inactivity (e.g., retirement, home duties, study, etc.) and net losses from inter-occupational movements.”**⁸⁴ Based on qualitative analysis, alongside engagement with relevant industry experts, we estimate a replacement rate of 2.5% per annum.

Under this method, given current trends, we estimate a 2027 employment of 58,296 persons. This breakdown is shown in Table 4.22.

Table 4.22: Modelled Supply of Occupations – Total Estimated Expected Supply by 2027	
Retention of Current Employment Base (i.e., 2022 employment adjusted to reflect replacement demand @ 2.5% per annum)	46,874
Projected new entrants from education & training system, of which:	
Graduates from HEA and QQI-accredited courses	11,075
Apprenticeships	347
Estimated increased supply in 2027 across relevant occupations resulting from education & training	58,296

Source: Indecon analysis

4.5 Estimation of Likely Future Gap in Education and Training Supply

In this section, Indecon combines the findings from the assessment of sub-sectoral demand and the identification of potential sources to meet that demand. In doing so, we examine the extent to which current education and training provisions will be adequate to meet the skills and occupational needs of the identified high-growth and high-potential sub-sectors.

However, the degree to which the skill needs of the industry will be met is not solely based on the **number** of graduates from relevant degrees or training outputs. In this way, we also combine our qualitative research – including extensive engagement with companies and industry experts – to assess the extent to which the international financial services industry will be suitably prepared to meet the **skills and occupational** needs of the IFS sector in 2027. As such, we present a detailed analysis of the key skill and occupational gaps for the IFS industry to 2027.

Having outlined the scale and nature of the skills and occupational gaps faced by the IFS sector, Section 5 identifies a detailed set of policy recommendations in order to address the gaps identified in this section.

To assess the scale of the gap in employment needs, given current educational and training outputs, we reconcile the findings of our detailed demand modelling with our estimate of the likely supply of entrants to the IFS industry. In doing so, we obtain an estimate of the shortfall in headcount for the identified niche sub-sectors.

Combining the supply and demand modelling suggests that the expected output of graduates from third-level systems will be insufficient to meet the overall growth in demand for employees over the period to 2027, for both the Scenario 1 and Scenario 2 demand modelling.

The results of the combined supply and demand analysis, using Scenario 1 demand results are shown in Table 4.23. Under this scenario, where estimated future (2027) demand is based on Indecon’s survey results, there is estimated to be an annual shortfall of 4,214 people in terms of education and training outputs by 2027.

84. Expert Group on Future Skills Needs (2015). 'National Skills Bulletin 2015'. July 2015. See: <https://www.skillsireland.ie/all-publications/2015/national-skills-bulletin-2015-final-online.pdf>

Table 4.23: Total Estimated IFS Supply and Demand by 2027, Scenario 1	
Total Modelled Demand in 2027	62,510
Total Modelled Supply in 2027	58,296
Estimated Annual Shortfall in Education & Training Outputs by 2027	-4,214

Source: Indecon analysis

Meanwhile, the results of the combined supply and demand analysis, using the Scenario 2 results are shown in Table 4.24. The estimated shortfall in education and training outputs under this scenario would be over 840 persons annually by 2027.

Table 4.24: Total Estimated IFS Supply and Demand by 2027, Scenario 2	
Total Modelled Demand in 2027	59,138
Total Modelled Supply in 2027	58,296
Estimated Annual Shortfall in Education & Training Outputs by 2027	-842

Source: Indecon analysis

The shortfall in employment need from the education sector will mean that greater pressure will fall on upskilling and reskilling programmes within the existing workforce, as well as sources such as the attraction of professionals from overseas and from other sectors, as identified earlier in this report, and as discussed in more detail in the recommendations.

Skills and Occupational Skill Gaps

An employee headcount alone is not a sufficient indicator of the capabilities of an industry to meet current and future skills needs. As such, it is necessary to explore in more detail how the headcount gap analysis relates to overall skills and occupational shortfalls, to present a more holistic assessment of the future skills needs of the international financial services industry.

Indecon has identified the key educational, occupational and skills gaps that are common to the entire IFS industry. These have been informed by Indecon's extensive discussions with relevant industry experts and stakeholders, our survey of companies within the identified niche sub-sectors, as well as by our detailed qualitative review, most pertinently IFS Skillnet's 'Skills Needs of the Future' report and SLMRU's Recruitment Agency Survey which identifies 'difficult to fill' positions for the financial sector.

Among the gaps in skills and competencies most highlighted by firms across the high potential IFS sub-sectors of focus within this assessment were:

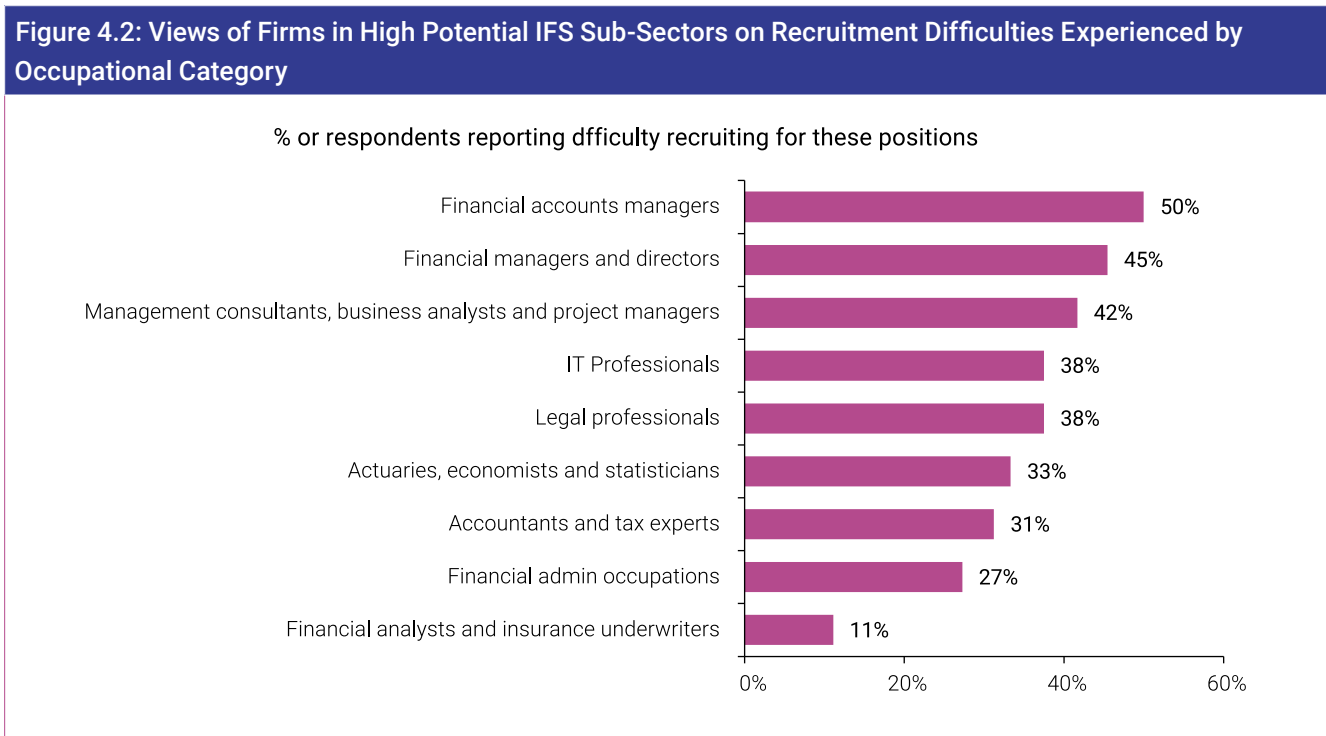
- ESG / sustainable finance.
- IT, digital and data analytics skills, including in crypto and blockchain, cybersecurity, machine learning and AI.
- Risk & compliance, regulatory and associated legal skills.
- Transversal 'human experience' skills.
- Anti-money laundering knowledge/skills.

At occupation level, the most cited professional skill gaps highlighted by firms included:

- Accountants and tax experts.
- Actuaries, economists and statisticians.
- Financial accounts managers.
- Financial analysts.

- Legal professionals and legal associates.
- IT professionals.
- Senior asset/portfolio management and investment professionals.
- Anti-money laundering professionals.

These findings are supported by Indecon’s industry research of IFS companies. Figure 4.2 reflects the views of respondent companies on the difficulties they have experienced in terms of recruiting for certain occupations. In general – and consistent with findings elsewhere in this report – senior positions were deemed to be the most difficult to fill, with 50% of respondents saying they had difficulty recruiting for financial accounts managers, and 45% indicating difficulty in recruiting financial managers and directors.



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

In addition, each of the identified sub-sectors is equally impacted by various educational, labour market and wider economic factors which contribute to the overall skills and occupational shortage across the industry. The findings from Indecon’s primary survey research in relation to each of these factors are discussed below.

Education and training related reasons for skills gaps

The findings from this survey question are consistent with other qualitative research referenced in this report, whereby a lack of specialist expertise and overall experience are deemed to be the most significant reasons for skills gaps. 69% of survey respondents said that an insufficient supply of educated and trained candidates with the required level/years of work experience to fill senior roles, and an insufficient supply of people in Ireland with appropriate specialist training required to work in the sector were significant, or very significant, reasons for the difficulties in acquiring the right skills in the sector.

Figure 4.3: Views of Firms in High Potential IFS Sub-Sectors on Education and Training Related Reasons for Skills Gaps

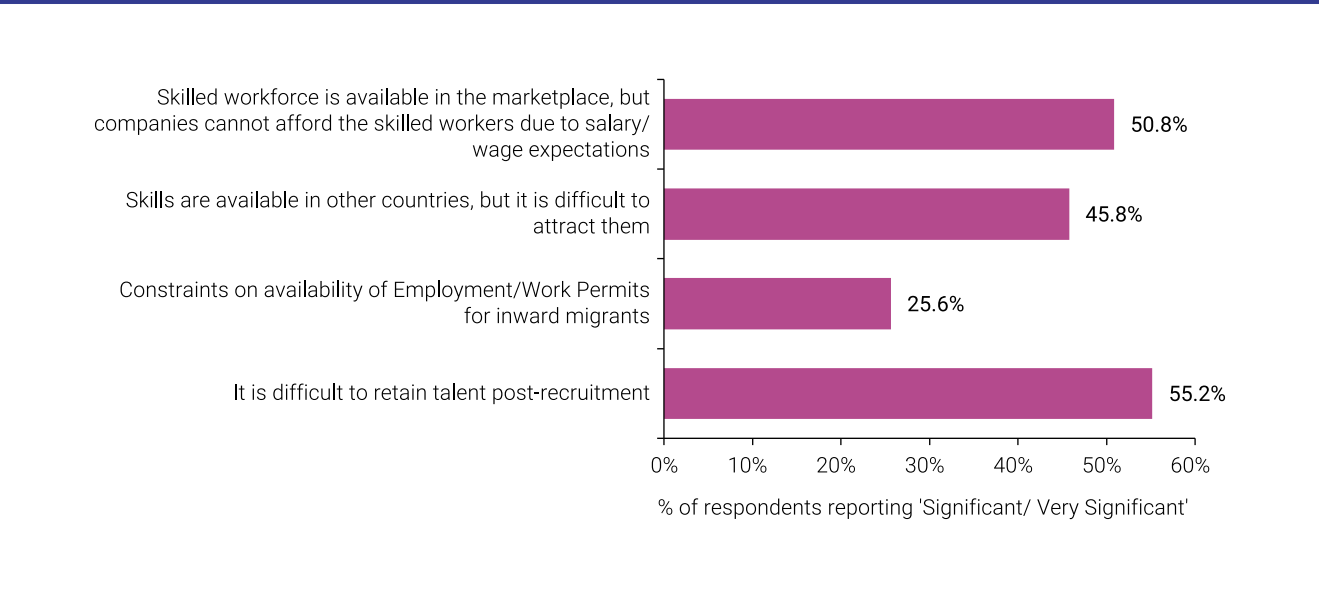


Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Labour market related reasons for skills gaps

Labour market factors were deemed to be slightly less significant on the whole, than education and training related factors. That said, over 50% of companies still deemed that salary/wage expectations, and retention of key talent, were significant contributors to skills gaps. Only 26% of respondents stated that constraints on the availability of employment/work permits for inward migrants was a significant, or very significant, barrier to acquiring the relevant sub-sectoral skills.

Figure 4.4: Views of Firms in High Potential IFS Sub-Sectors on Labour Market Related Reasons for Skills Gaps

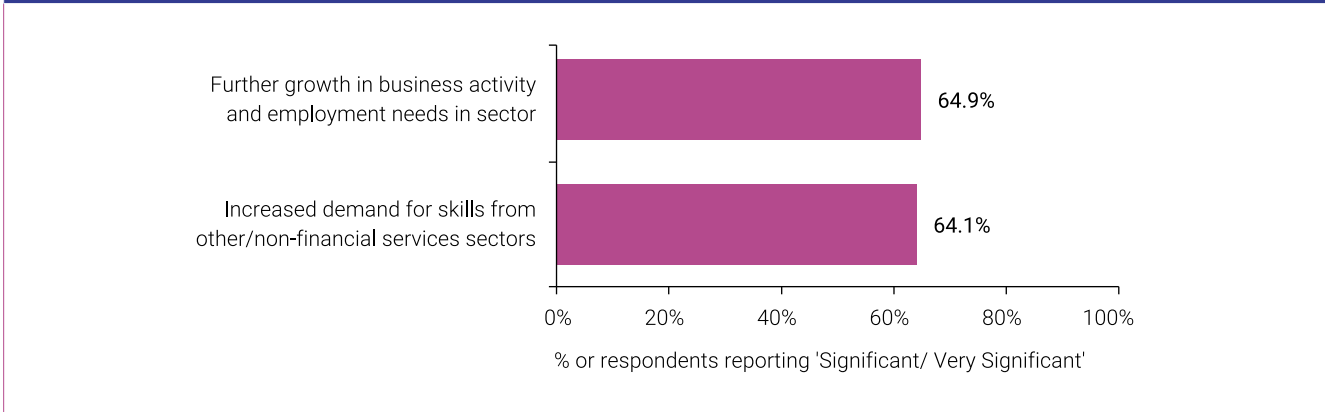


Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Wider reasons for skills gaps

Elsewhere, further growth in business activity and employment needs in the sector, as well as an increased demand for skills from other (non-financial services) sectors were also seen to be among the most significant barriers to acquiring the necessary skills.

Figure 4.5: Views of Firms in High Potential IFS Sub-Sectors on Reasons for Skills Gaps



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Industry views on potential responses to addressing skills gaps

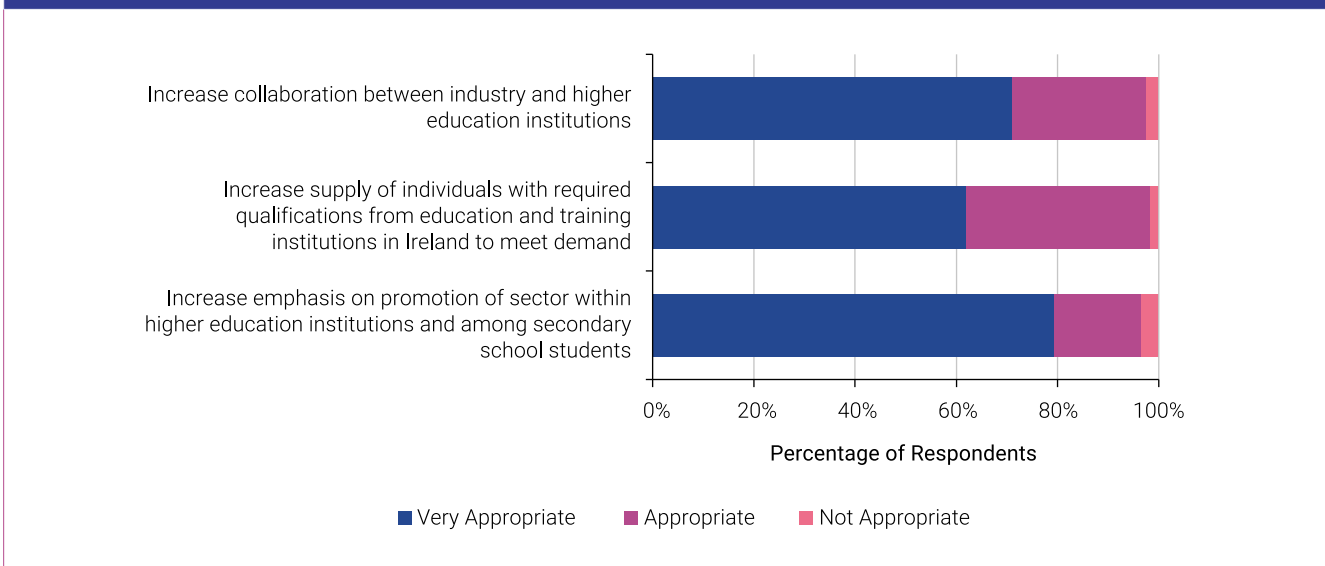
Indecon’s research survey also sought the views of companies in the high potential IFS sub-sectors on potential approaches to addressing identified skills gaps. These responses/approaches can be divided into three broad categories:

- Education-based responses;
- In-company based responses; and,
- Wider responses.

Education-based responses to skills gaps

There was a strong emphasis on the importance of supply side education-based responses, as shown in Figure 4.6. 79% of respondents said that promoting the sector within higher education institutions and among secondary schools was very important (the highest response of all prompts). There was similarly positive support for increasing collaboration between industry and higher education institutions; and, increasing the supply of individuals with required qualifications from education and training institutions, at 71% and 62%, respectively. Overall support for these initiatives – that is, respondents who indicated they were either important or very important – was over 97% in all cases.

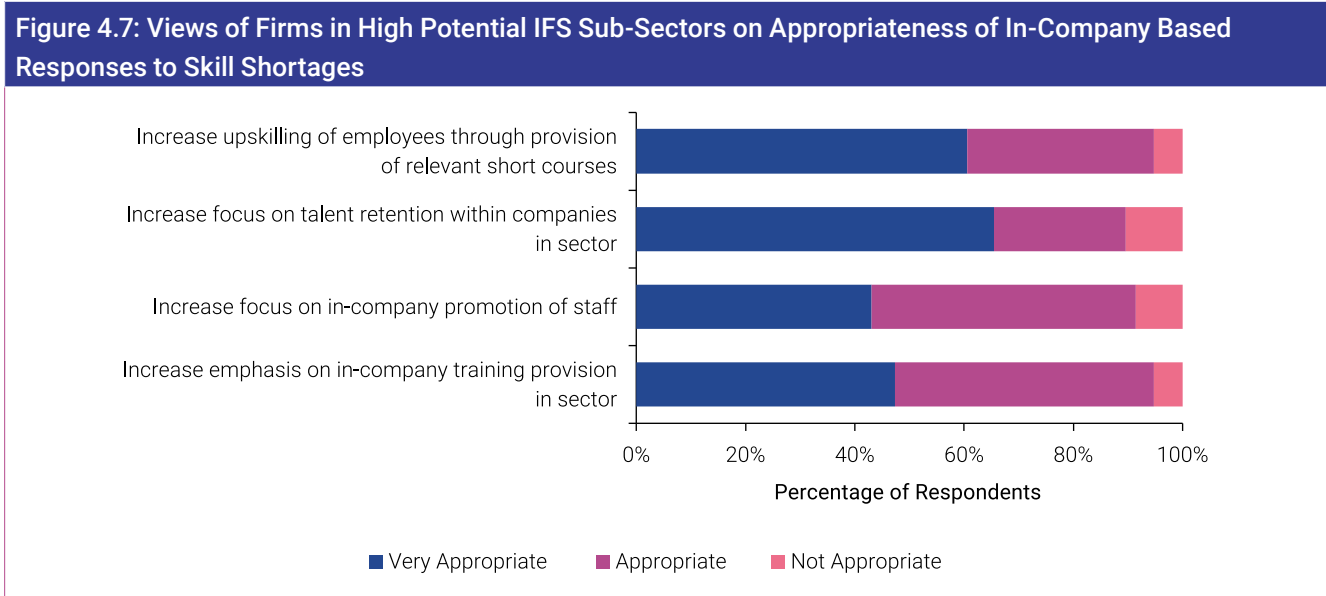
Figure 4.6: Views of Firms in High Potential IFS Sub-Sectors on Appropriateness of Education-Based Potential Responses to Skill Shortages



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

In-company responses to skills gaps

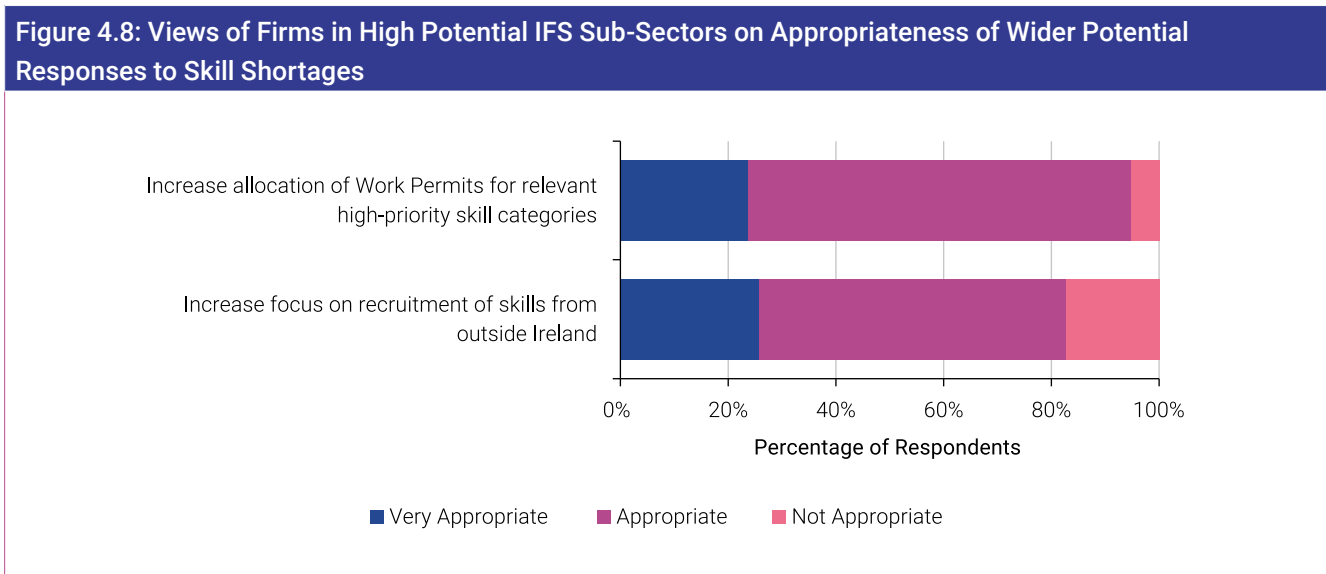
Other proposed potential responses focused on the ability of companies to address skills gaps issues internally, most pertinently through the use of upskilling and reskilling programmes. Figure 4.7 shows the feedback to these responses. As above, there was a broad support for these initiatives, with over 90% of respondents expressing support for the proposed response. About 66% of respondents agreed that it was 'very important' to increase the focus on talent retention within companies in sector, while the most popular initiative overall was to increase the upskilling of employees through the provision of short courses.



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Wider responses to skills gaps

Figure 4.8 shows the response of companies to other, wider potential responses to skill shortages. While these were less strongly supported than aforementioned education-based and in-company based responses, there was still a strong positive response on the whole. A large majority (95%) of respondents agreed that increasing the allocation of work permits for relevant high-priority skill categories would help to address skill shortages, with the equivalent figure of 83% agreeing on the important of increasing focus on recruitment of skills outside of Ireland.

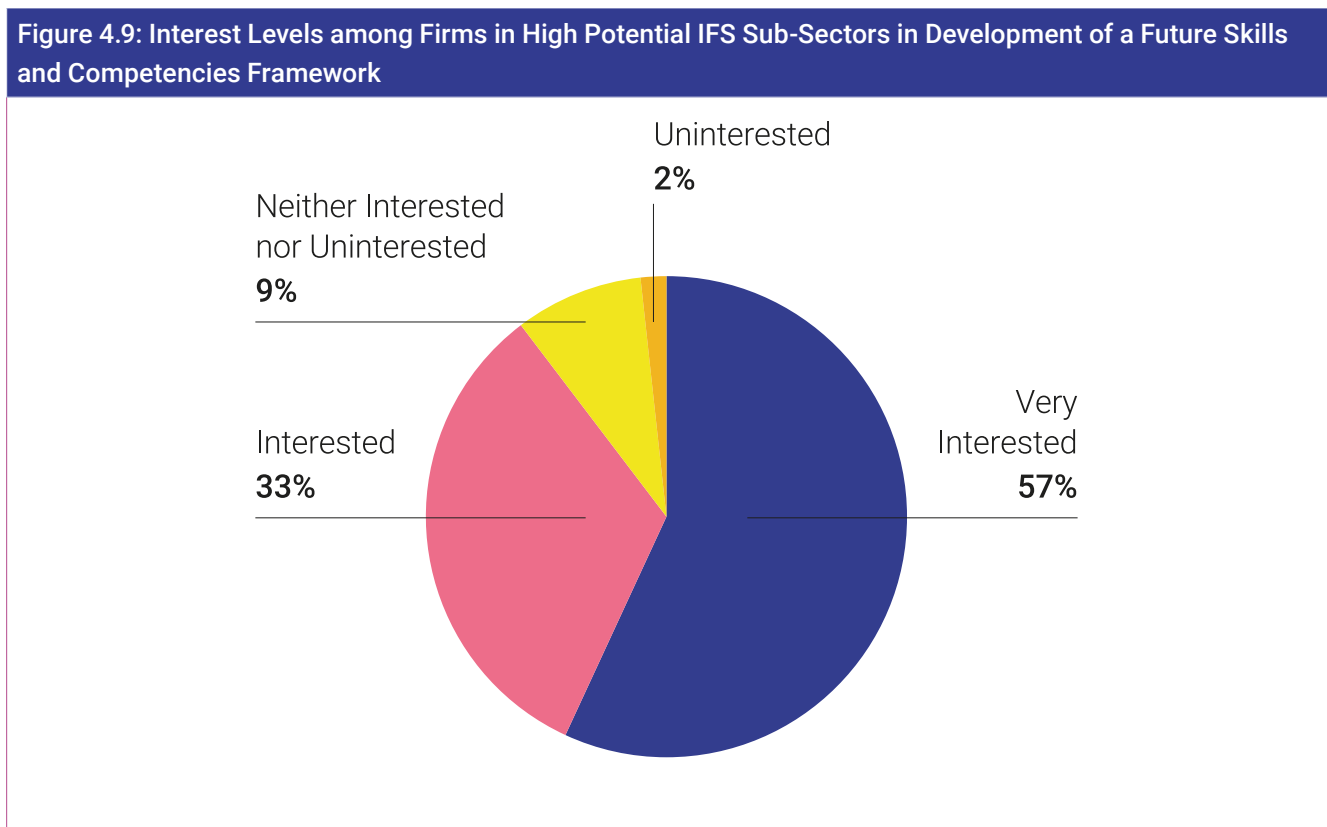


Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Additionally, Figure 4.9 shows the level of interest among survey respondents to the establishment of a Future Skills Framework for the IFS industry. The objectives of a Future Skills Framework would be to build skills and competencies in the IFS industry that:

- Enables the identification of current and emerging skills gaps.
- Enables the retention and recruitment of talented individuals to the industry.
- Supports employers in strategic skills planning, including re-skilling and skills upgrading.
- Supports education and training providers in designing programmes to respond to the emerging skills needs of the industry; and that
- Assists industry professional bodies and Government in analysing skills gaps and initiatives appropriate to address them.

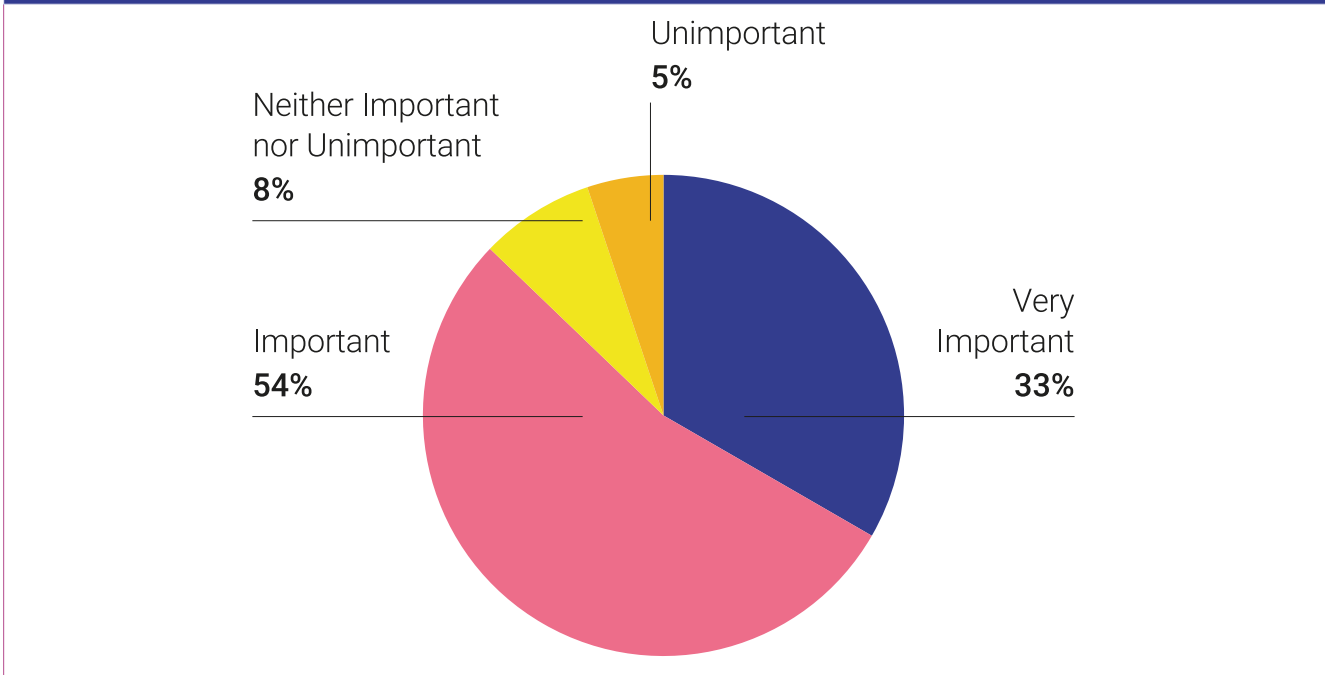
With this in mind, 90% of respondents expressed interest in the establishment of a Future Skills Framework, with 57% stating that they would be very interested. Only 2% of survey respondents stated they would be uninterested in this initiative.



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Elsewhere, Figure 4.10 indicates the views of survey respondents on the importance of short courses with stackable qualifications (e.g., “micro-credentials”) for upskilling and reskilling. As above, there was a significant positive response to this initiative, with 87% of respondents indicating that they felt short courses with stackable qualifications were either important or very important. Only 5% of respondents felt that these were unimportant.

Figure 4.10: Views of Firms in High Potential IFS Sub-Sectors on Importance of Short Education and Training Courses with Stackable Qualifications



Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Survey respondents were also asked to provide any other suggestions concerning the reasons for skills gaps within their sub-sector(s). A sample of these additional comments are provided in Figure 4.11, where many respondents pointed to living and renting conditions as being a burden to attracting talent to Dublin.

Figure 4.11: Additional Views of IFS Companies on Reasons for Skills Gaps

“Gender diversity an issue especially for fund management roles - especially limited ‘pipeline’ of female candidates.”

“Significant expectation gap between employer and recently qualified applicants with regard to remuneration and other softer benefits such as remote working.”

“Macroeconomic factors particular to Ireland have a negative impact on talent pools. I am thinking particularly of rent.”

“The biggest gap is the understanding of cross border business at a number of levels within an organisation (operations, product development, risk & compliance), the understanding of international regulation and legislation and language skills to manage the business and clients.”

“Our current experience is that the skills are broadly available but more competitive to attract top talent. The cost-of-living crisis has been a factor in contributing to this.”

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Finally, Figure 4.12 shows anonymised responses from survey respondents, when asked to provide any other responses for addressing these skills gaps, and for ensuring an adequate skills supply to 2027.

Figure 4.12: Additional Views of IFS Companies on Responses to Skills Gaps

“Greater provision of practical training courses to deepen the pool of talent in areas such as “Designated Persons”, Controlled Functions and Pre-Approval Controlled Functions.”

“Addressing the housing / cost of living issues. Rolling out high speed accessible broadband to the entire island of Ireland.”

“Improved public transport infrastructure in Ireland. Maintaining affordable transport links within the EU, to the UK and to the US.”

“Enhance industry image and credentials to appeal to younger population and redefine itself.”

“Engage with social media more/ build networks.”

“Potential opportunities for more apprenticeships or trainees type schemes perhaps or have a stronger presence in college placement programmes.”

“Internal Recruitment focus – Upskilling with micro credentials to enhance technical capabilities.”

“Ensure the voice of the employee is considered and acted upon collaboratively from employee satisfaction surveys.”

“Even more emphasis on individual development plans, needs and solutions.”

“Focus on diversity and more women in a very male dominated industry.”

“Generally marketing the industry as an industry people want to work in (purpose, values, work/life).”

“Apprenticeships in Ireland, for some reason unknown to me, have little traction in the so-called professional workplace. Increased emphasis should be placed on them.”

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Implications of hybrid and remote working

Earlier in this report, it was noted that access to remote/hybrid working conditions could facilitate increased regional diversity in the industry, but it can also have positive benefits in terms of making the sector more attractive and inclusive to certain groups for whom standard in-person office hours may not be attractive, nor indeed feasible at all. As well as those who are unable to find suitable living arrangements in Dublin, this act will be particularly advantageous to parents and those with caring responsibilities. On the latter, this may greatly help in the IFS industry's attempts to increase the number of women in the IFS industry, by signifying that one can more readily balance work with caring responsibilities. Hence, in establishing this right to flexible working conditions, the IFS industry may be able to make the sector much more inclusive to a broader talent pool.

The recent Work Life Balance and Miscellaneous Provisions Act 2023 ('WLB Act')⁸⁵, certain elements of which came into effect on 3rd July 2023, should go some way in helping to address some of the industry feedback which indicated that greater use of hybrid and remote working conditions can make the IFS industry more attractive to a wider talent pool. The WLB act, introduced as part of the EU's broader commitments to diversity and inclusion in the workplace, establishes new rights to workers to support their work, caring and family responsibilities.

Among other things, the act covers the following⁸⁶:

- The right to request flexible working hours for parents and carers who provide care and support for children and persons who need significant care and support for serious medical reasons.
- Five days of unpaid leave for medical care purposes for carers and parents who meet the above criteria.
- The right to request remote working for any employee.

Sub-Sectoral Skills and Occupational Gaps

Each of the seven identified high-growth sub-sectors will be affected by the issues and opportunities facing the industry as a whole, and there is a high degree of transferability in some of the skills required to succeed in the industry. However, the sub-sectors will also face individual challenges and issues which will require an adequate talent pool in order to ensure the continued growth of the sub-sector. These individual sub-sectoral issues were introduced in the sub-sectoral profiles presented in Section 2 of this report. In the following set of tables, we build on this research by identifying specific skills and knowledge gaps, as well as specific occupational needs highlighted by firms responding to Indecon's survey research in each of the identified high potential sub-sectors.

Fintech and Payments

Table 4.25 summarises the specific skills and knowledge requirements, occupational needs, and relevant occupational categories highlighted by firms within the fintech and payments sub-sector.

85. Government of Ireland (2023). 'Work Life Balance and Miscellaneous Provisions Act 2023'. Number 8 of 2023. See: <https://www.irishstatutebook.ie/eli/2023/act/8/enacted/en/html>

86. Sage.com (2023). 'What is the Work Life Balance and Miscellaneous Provisions Act?'. 6th July 2023. See: <https://www.sage.com/en-ie/blog/work-life-balance-and-miscellaneous-provisions-act/>

Table 4.25: Skills and Occupational Gaps Highlighted by Firms in Fintech & Payments Sub-sector

Skills & Knowledge Requirements/Gaps	High-Level Occupational Categories	Specific Occupational Needs
Risk/ compliance/ regulatory	IT professionals	Blockchain developer
Specialist knowledge	Actuaries, economists and statisticians	Quantitative analyst
Data science and analytics	Legal professionals and legal associates	Machine learning engineers
Programming	Financial analysts	Software developers
Cybersecurity	Financial accounts managers	Data scientists
AI and machine learning	Financial managers and directors	Compliance and risk specialists and analysts
Automation		Customer services
Business and financial literacy		Anti-Money Laundering professionals
Crypto and Blockchain		Accountants and tax experts
ESG/ sustainable finance		

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Asset Management

Table 4.26 summarises the specific skills and knowledge requirements, occupational needs, and occupational category gaps within the asset management sub-sector.

Table 4.26: Skills and Occupational Gaps Highlighted by Firms in Asset Management Sub-sector

Skills & Knowledge Requirements/ Gaps	High-Level Occupational Categories	Specific Occupational Needs
Data analysis	Accountants and tax experts	Trust officers
Risk and compliance	Financial managers and directors	Investment analyst
Customer service skills	Financial analysts	Custody associates
Cybersecurity	Financial accounts managers	Sustainable wealth managers
Brexit and EU Regulations	Actuaries, economists and statisticians	Information management
Specialist database management knowledge	Other business associate professionals	Investment manager
Digital skills: Crypto and Blockchain	IT professionals	Asset manager
ESG/ sustainable finance	Legal professionals and legal associates	Portfolio management
Front-line asset management		General ledger accountant
Specialist custody services for digital assets		Investment oversight and management professionals
		Operations, administration and HR
		Shareholder services

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Investment Funds and Securities Services

Table 4.27 summarises the specific skills and knowledge requirements, occupational needs, and occupational category gaps within the investment funds and securities services sub-sector. Understandably, there is a large degree of transferability between these skills, and those required in the asset management and wholesale capital markets sub-sectors.

Skills & Knowledge Requirements/ Gaps	High-Level Occupational Categories	Specific Occupational Needs
Risk and compliance	Financial managers and directors	Product management
Relationship management	Financial analysts	Portfolio management
Fund oversight and management	Financial accounts managers	Corporate Services and Legal
Private equity real estate	Actuaries, economists and statisticians	Investment oversight and management professionals
Private debt	Legal professionals and legal associates	Operations, administration and HR
ESG/ sustainable finance		Shareholder services
Customer services skills		Sustainable wealth managers
Brexit and EU Regulations		Information management
Digital skills: Crypto and Blockchain		Investment manager
Specialist custody services for digital assets		

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Insurance and Reinsurance

Table 4.28 summarises the specific skills and knowledge requirements, occupational needs, and occupational category gaps within the insurance and reinsurance sub-sector.

Skills & Knowledge Requirements/ Gaps	High-Level Occupational Categories	Specific Occupational Needs
Data analysis	Accountants and tax experts	Claims handlers
Software development	Financial managers and directors	Audit operations
Cybersecurity	Financial analysts and insurance underwriters	Data analysts/ scientists
ESG/ sustainable finance	Financial accounts managers	Software engineers
Complex data modelling	Actuaries, economists and statisticians	Actuaries
Risk/ compliance/ regulatory	Other business associate professionals	Risk and compliance
Specialist knowledge (e.g. cyber; climate change)	IT professionals	Underwriting
Financial literacy	Legal professionals and legal associates	Customer services

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

International Banking

Table 4.29 summarises the specific skills and knowledge requirements, occupational needs, and occupational category gaps within the international banking sub-sector.

Table 4.29: Skills and Occupational Gaps Highlighted by Firms in International Banking Sub-Sector		
Skills & Knowledge Requirements/ Gaps	High-Level Occupational Categories	Specific Occupational Needs
Governance/risk/compliance (GRC)	Financial managers and directors	Credit operations
Cybersecurity	Financial analysts	Lending
ESG/ Sustainable Finance	Financial accounts managers	Accounts and payments
Trading	Actuaries, economists & statisticians	Agency operations
Portfolio management	Other business associate professionals	Trading
Specialist operational and technical knowledge	IT professionals	Portfolio management
Business analysis	Legal professionals and legal associates	Financial control
Data analytics and coding	Financial admin occupations	Compliance and risk
Customer engagement (digital & human interaction)		Regulatory reporting
		Anti-Money Laundering professionals

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Wholesale Capital Markets

Table 4.30 summarises the specific skills and knowledge requirements, occupational needs, and occupational category gaps within the wholesale capital markets sub-sector.

Table 4.30: Skills and Occupational Gaps Highlighted by Firms in Wholesale Capital Markets Sub-Sector		
Skills & Knowledge Requirements/ Gaps	High-Level Occupational Categories	Specific Occupational Needs
Digital skills	Financial analysts	Risk managers
Data analysis	Legal professionals and legal associates	Credit analysts
Deep regulatory knowledge	IT professionals	Trader/dealers
Cybersecurity	Actuaries, economists & statisticians	Underwriters
Sector & market knowledge		Programmers
Banks Loans		
Financial Accounting and Reporting		
Fund Accounting		
ESG/ sustainable finance		
Risk and compliance		

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

Aircraft Leasing and Finance

Table 4.31 below summarises the skills and knowledge gaps, occupational needs, and high-level occupational categories which are most in demand for this sector.

Table 4.31: Skills and Occupational Gaps Highlighted by Firms in Aircraft Leasing and Finance Sub-Sector		
Skills & Knowledge Requirements/ Gaps	High-Level Occupational Categories	Specific Occupational Needs
Specialist engineering knowledge	Accountants and tax experts	Accountants
Specialist financial knowledge	Financial analysts	Aviation legal and tax advisers
Risk and compliance	Auditors	Auditors
Marketing	Other business associate professionals	Financial analysts
Financial modelling	Legal professionals and legal associates	Leasing marketing specialists
Contract management		Business development pricing specialists
Tax expertise		Corporate services providers
ESG/ sustainable finance		Sales and marketing experts
		Technical employees and engineers

Source: Indecon Survey Research among Companies in High Potential IFS Sub-sectors

4.6 Summary of Key Findings

This section presented the results of Indecon’s detailed economic analysis and modelling of the future skills needs and identification of skills gaps for our identified niche sub-sectors.

- Though the exact outlook of the international financial services industry to 2027 is uncertain, it is evident that there will a gradual transition away from the ‘status quo’, as current job and skills requirements evolve to meet the needs of the industry in the next five years and beyond.
- The integration of sustainable finance practices and environmental, social and governance (ESG) standards across all areas of financials services is transforming the industry and has led to a key new horizontal skill requirement requiring increased focus. However, analysis of the most popular relevant third-level courses in Ireland suggests that only 30% currently have some ESG or sustainable finance component.
- The global IFS industry has been marked by a rapid and wholesale digitalisation process, where new technologies are being integrated in to mainstream financial services. To support this digitalisation, it is increasingly essential that new staff are trained in data science and coding, and that suitable upskilling courses are available to existing to staff. It was found that skills are needed at all levels across the industry – entry, competent, and advanced. These skills include basic and advanced data analysis and coding skills, but also more advanced technical skills such as cybersecurity, AI, and machine learning.

- While the exact net impacts of automation on jobs are unknown, what is known is that automation and AI will continue to grow in prominence in the IFS industry. It is crucial, therefore, that governments and business work together to ensure that the workforce is suitably trained to adequately adjust to these new technologies, and to capitalise on the job opportunities created from this automation.
- While any such market projections are subject to considerable uncertainty, under two separate scenarios examined by Indecon, it is estimated that employment across the seven high potential IFS sub-sectors within the focus of this assessment will expand by between 5,900 and 9,300 persons, reaching between 59,000 and 62,500 persons by 2027.
- This additional occupational demand will be spread across a range of occupations, varying between each of the sub-sectors.
- Based on indicative supply scenarios modelled by Indecon, an annual shortage of graduates in relevant disciplines from the education system estimated at between 800 and 4,300 persons could arise by 2027.
- As well as an anticipated shortfall in employment headcount, there are skill and occupational needs that may not directly be addressed by current education and training provision. Among the gaps in skills and competencies most highlighted by firms across the high potential IFS sub-sectors of focus within this assessment were:
 - » ESG / sustainable finance.
 - » IT, digital and data analytics skills, including in crypto and blockchain, cybersecurity and AI.
 - » Risk & compliance, regulatory and associated legal skills.
 - » Soft 'human experience' skills.
 - » Anti-money laundering knowledge/skills.
- At occupation level, the most cited professional skill gaps highlighted by firms included:
 - » Accountants and tax experts.
 - » Actuaries, economists and statisticians.
 - » Financial accounts managers.
 - » Financial analysts.
 - » Legal professionals and legal associates.
 - » IT professionals.
 - » Senior asset/portfolio management and investment professionals.
 - » Anti-money laundering professionals.

5

Overall Conclusions and Recommendations

5.1 Key Findings and Conclusions

The key findings and conclusions from the assessment are set out below.

Identification of High Potential IFS Sub-Sectors

Informed by desk-based research and the completion of structured survey-based interviews with experts in the IFS sector, the following group of seven high growth-potential IFS sub-sectors was identified and agreed with the Steering Group as representing the key areas of focus for the study:

- Fintech and Payments;
- Asset Management;
- Investment Funds and Securities Services;
- Insurance and Reinsurance;
- International Banking;
- Wholesale Capital Markets; and
- Aircraft Leasing and Finance.

It is estimated that these sub-sectors employed approximately 53,000 persons as of end-2022 and accounted for 95% of the overall level of employment in the wider IFS sector. The main concentrations of employment within the sub-sectors are in asset management, investment funds and securities services, insurance and reinsurance, and international banking and whole capital markets.

Current Skills Supply

Among relevant disciplines/fields of study, business and administration-related courses consistently produce the highest annual output of higher education graduates, with this figure being 5,195 in 2021 (an increase of over 600 compared to 2016). Overall, all fields of study relevant to the IFS sector have seen an increase in the number of graduates compared with five years ago. However, of greater importance is whether the number of graduates in relevant areas is sufficient to meet current and future levels of skills demand, not only from the IFS sector but also the wider financial services sector and other sectors of the economy.

Most IFS-related higher education courses tend to be male-dominated, with computer/IT-related courses overwhelmingly male-dominated (over 80% male). Law, and marketing and advertising are the only relevant courses which are majority female, though there is a slightly more even split in the most popular course (business and administration). Building awareness of career opportunities and boosting the appeal of the IFS sector among female second- and third-level students will be important to improving diversity and inclusion and unlocking additional supply of skills for the sector.

Indecon's industry survey research suggests that the current level of supply of candidates at various qualification levels will be insufficient to meet the skills needs of the industry. For both current and future skills, doctoral-level degrees (i.e., NFQ Level 10) were deemed to have the most significant skills shortage, with 34% of respondents anticipating a significant skills shortage of these qualifications by 2027. Firms also judge that future skills shortage will be more pronounced than currently across all levels from Level 7 upwards, with NFQ Level 8 qualifications (i.e., honours bachelor's degree or equivalent) anticipated to have the biggest absolute increase in significant skills shortage.

Overall, the establishment and recent growth of the IFS Associate and IFS Specialist apprenticeships and of other IFS-relevant specialist apprenticeships has been a very important development in relation to creating new pathways for individuals who wish to establish new careers or develop specialist training in new areas in the IFS sector. However, while registrations have increased, this has been from a small or zero base and overall numbers undertaking these apprenticeships remains low when considered against existing employment levels in the IFS sector and across the wider financial services sector. This suggests that the apprenticeship route remains relatively under-valued as a career pathway within the sector and further work will be needed to promote this route and to develop further specialist programmes.

Further work is needed as a priority to develop a comprehensive listing of all IFS-relevant third-level courses delivered and under development and to establish details on course capacity and content. This is critical to establishing a definitive view on whether existing and planned capacity within the third level system is sufficient to meet the requirements of the IFS sector, including high potential sub-sectors.

Respondents to Indecon's survey of IFS companies were supportive to the role that upskilling and reskilling can play in meeting the IFS sector's skills needs. Several industry bodies are currently, or are planning to, provide training to the sector. Increasing attention is being given to the potential for micro-credentials to provide employers with the opportunity to address workforce skills gaps, and re-skill as business and work models evolve.

In relation to inward migration as a source of skills supply, Indecon's research among firms in the high potential IFS sub-sectors suggests that the attraction of suitably qualified migrants is proving difficult. In particular, the research found that 45% of responding firms indicated that difficulty in attracting skilled talent from abroad was a 'very significant' or 'significant' contributing factor to skills gaps.

The integration of sustainable finance practices and environmental, social, and governance (ESG) standards across all areas of financial services is transforming the industry and has led to a key new horizontal skill requirement requiring increased focus. However, analysis of the most popular relevant third-level courses in Ireland suggests that only 30% currently have some ESG or sustainable finance component.

Future Skill Needs and Scenarios for Demand

While any such market projections are subject to considerable uncertainty, under two separate scenarios examined by Indecon, it is estimated that employment across the seven high growth-potential IFS sub-sectors within the focus of this assessment will expand by between 5,900 and 9,300 persons, reaching between 59,000 and 62,500 persons by 2027.

Based on indicative supply scenarios modelled by Indecon, an annual shortage of graduates in relevant disciplines from the education system estimated at between 800 and 4,300 persons could arise by 2027.

As well as an anticipated shortfall in employment headcount, there are skill and occupational needs that may not directly be addressed by current education and training provision. Among the gaps in skills and competencies most highlighted by firms across the high potential IFS sub-sectors of focus within this assessment were:

- ESG / sustainable finance.
- IT, digital and data analytics skills, including in crypto and blockchain, cybersecurity and AI.
- Risk & compliance, regulatory and associated legal skills.
- Soft 'human experience' skills.
- Anti-Money Laundering knowledge/skills.

At occupation level, the most cited professional skill gaps highlighted by firms included:

- Accountants and tax experts.
- Actuaries, economists and statisticians.
- Financial accounts managers.
- Financial analysts.
- Legal professionals.

- IT professionals.
- Senior asset/portfolio management and investment professionals.
- Anti-Money Laundering professionals.

The Ireland for Finance Action Plan 2023 outlines a range of specialist educational and training programmes to be developed or delivered for the IFS industry. These include accredited programmes in sustainable finance regulation for compliance professionals; masters-level programmes in blockchain, fintech, and compliance; and various professional certificate and diploma programmes in a broad range of IFS-relevant specialist topic areas. Though not within the scope of research for this assessment, Indecon also prepared an indicative examination of a sample of popular courses to ascertain content. However, further work will be needed as a priority to complete a comprehensive listing of all IFS-relevant third-level courses delivered and under development and to establish details on course capacity and content. This is critical to establishing a definitive view on whether existing and planned capacity within the third level system is sufficient to meet the requirements of the IFS sector, including high potential sub-sectors.

5.2 Recommendations

Based on the detailed assessment undertaken in this study, a set of policy recommendations has been identified, which are summarised in Table 5.1. These are designed to address the identified skills requirements of the international financial services industry over the period to 2027. The recommendations build on measures and programmes that are already underway, or which are currently under development. The level of success ultimately achieved in addressing the future skills requirements identified in this study will, however, be dependent on industry, education/training and government stakeholders working on a collaborative basis to achieve the goals of ensuring a sufficient quantity and quality of skills.

Table 5.1: Recommendations and Supporting Actions

1	<p>A National Oversight and Implementation Group should be established as a high priority by the EGFSN secretariat/Department of Enterprise, Trade and Employment, to oversee and coordinate implementation of the recommendations and actions to support skills development and promotion in the IFS and wider Financial Services sector.</p> <ul style="list-style-type: none"> • The group should be comprised of the organisations responsible for carrying out the recommendations (as indicated under each recommendation below) and should also coordinate with the Department of Further and Higher Education, Research, Innovation and Science (DFHERIS) (incl. the Regional Skills Fora) and the Department of Education and the Department of Finance, as required. • The group will be supported for two years to ensure that the relevant actions are delivered. • The Group should be chaired initially by Kevin Gallen (ex-IOB), with chair rotating on an annual basis. • Each recommendation/supporting action should be led by one organisation, where possible; or a sub-group should be established to coordinate implementation of supporting actions. • The implementation group should report on progress to the EGFSN/DETE on an annual basis, or as requested. <p>Implementation Timeframe: Group to be established with first meeting held by Q2 2024 Implementation Lead: EGFSN secretariat/Department of Enterprise, Trade and Employment</p>
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2

Priority should be given by all stakeholders in the IFS sector to collaborate in the development of a world class Skills Framework for the Irish financial services industry, with IFS included as a key sector.

The Skills Framework is envisioned as a valuable resource for the Irish financial services industry. It will ensure consistency of education, qualifications, and skills standards. It will assist in attracting and retaining talent, reduce recruitment costs, and, as a national Framework, it will facilitate and simplify talent flow between sub-sectors, supporting further regionalisation of the industry. It will support upskilling, reskilling, and overall skills development, including the skills required for the industry's pivotal role in sustainable finance and the green transition. The ambition is that the Framework will be renowned internationally for its innovation in skills development at an industry and systems level, enhancing Ireland's reputation as a hub for people talent in financial services. The Framework should, inter alia:

- Be collaboratively developed by the project lead with the firms, sectoral bodies and representative bodies encompassing the high potential IFS sub-sectors.
- Be aligned, as appropriate, with best practice development of standards-based skills frameworks within the international financial services sector.
- Identify the technical skills and professional competencies required to work in different functions and at different levels of seniority within each IFS sub-sector.
- Identify alternative learning programmes and pathways, including access to micro-credentials to acquire specialist/advanced and other specific skillsets.
- Devise a system to recognise employers' and individuals' investment in education, training, prior learning, on the job learning and experience, which will further incentivise lifelong learning.
- Utilise appropriate digital/online tools/platforms to facilitate accessibility for users.
- Relate this to ongoing work on apprenticeships.
- Complete a comprehensive listing and database of current IFS-relevant courses offered by further and higher education providers in Ireland. This should include details on course modules.
- Identify gaps in course provision and content relative to current and emerging skill requirements.

Implementation Timeframe: This is a multi-year project with milestones to be agreed.

A progress report to be delivered by IOB – 31 December 2024.

Implementation Lead: IOB

- » Responsibilities: Design, develop, build and deliver the Framework in line with agreed outcomes and timelines.
- » As a first step, establish a governance structure.

Implementation Support: Industry Bodies*, HEA, SOLAS, Skillnet Ireland, IFS Skillnet.

3	<p>The effective implementation of the Irish Financial Services Skills Framework should be co-ordinated within the context of a single National Portal for Careers and Skills Development, which it is intended will provide information in relation to career pathways across all sectors.</p> <ul style="list-style-type: none"> • This will mean enhanced coordination between government, industry and education and training providers to ensure that course design and capacity are reflected within a National Portal and aligned with required skills and competencies. • This coordination should ensure that identified gaps in course provision and content are addressed effectively by the education and training system. • Priority should be given to aligning IFS-relevant further and higher education courses and qualifications available from Irish providers within a single National Portal on Careers and Skills Development. <p>Implementation Timeframe: Q4 2025 Coordination Lead: DFHERIS, Skillnet Ireland Implementation Support: IUA, THEA and SOLAS, HEA, and IOB (allowing for coordination with Recommendation 2)</p>
4	<p>Enhanced provision and promotion of, and supports for accessing, upskilling and reskilling opportunities is required for the IFS sector.</p> <p>Priority actions include:</p> <ul style="list-style-type: none"> • Continue promotion and provision of incentives for employees and employers to participate in professional designations, continuing professional development, lifelong learning and upskilling. <ul style="list-style-type: none"> » Implementation Lead: DFHERIS. Implementation Support: HEA, SOLAS, Skillnet Ireland, IOB, IDA, EI, Industry Bodies* • Promotion of different career pathways and transitioning opportunities to enter IFS sector. <ul style="list-style-type: none"> » Implementation Lead: IFS Skillnet. Implementation Support: FSI, IOB, Industry Bodies* <p>Implementation Timeframe: By Q1 2025</p>

5	<p>Further develop government and industry-led initiatives to promote and achieve broader diversity and inclusion with IFS sector workplaces and enhance the attractiveness of the sector for women and minority groups.</p> <p>Specific actions which should be prioritised include:</p> <ul style="list-style-type: none"> • List and collate initiatives such as the Women in Finance Charter and the Trinity Centre for People with Intellectual Disabilities (TCPID) to enhance the attractiveness of the sector. <ul style="list-style-type: none"> » Implementation Lead: FSI. Implementation Support: IOB, Industry Bodies*, DFHERIS, HEA, SOLAS, HEIs, ETBs, Skillnet Ireland, IFS Skillnet, IDA, EI • Further develop 'Women in Leadership' programmes designed for IFS sector executives. <ul style="list-style-type: none"> » Implementation Lead: IFS Skillnet. Implementation Support: IDA, EI, DFHERIS, HEA, SOLAS, HEIs, ETBs, Skillnet Ireland, RSFs, IOB, Industry Bodies* • Develop and promote 'Return to Work' programmes for individuals returning to the workforce after extended periods. <ul style="list-style-type: none"> » Implementation Lead: IFS Skillnet. Implementation Support: Industry Bodies*, IDA, EI, DFHERIS, HEA, SOLAS, HEIs, ETBs, Skillnet Ireland, RSFs, other education providers • Expanding promotional and marketing/branding initiatives, including use of social media, to increase awareness and show case IFS sector as a great place to work for younger people and among individuals with diverse qualifications in other sectors who could be attracted into IFS careers. <ul style="list-style-type: none"> » Implementation Lead: FSI. Implementation Support: IOB, Industry Bodies* <p>Implementation Timeframe: By Q1 2025</p>
6	<p>Continue to develop and strengthen promotion of Apprenticeship programmes as a career pathway in the IFS sector.</p> <ul style="list-style-type: none"> • The IFS sector will collaborate with NAO and academic institutions to design curricula and delivery models for apprenticeships that are aligned with industry needs. A working group will be established to engage with the National Apprenticeship Office (NAO) to explore opportunities to enhance the marketing, administration, and quality aspects of apprenticeships for the FC sector. <p>Implementation Lead: Insurance Institute. Implementation support: NAO, NCI, FSI, IOB, Industry Bodies* Implementation Timeframe: Medium term</p>

7	<p>IFS industry to collaborate with education providers to ensure that relevant courses are put in place.</p> <p>Specific actions include:</p> <ul style="list-style-type: none"> • Industry bodies and major sectoral employers to collaborate with education and training providers to develop and promote new upskilling opportunities using micro-credentials, which are stackable towards larger academic awards through identified pathways. To ease the financial costs of acquiring micro-credentials, the potential to utilise existing workforce development funding channels such as HCI/ SpringBoard+, Skills to Advance and Skillnet Ireland supports should be explored. <ul style="list-style-type: none"> » Implementation Lead: RSFs. Implementation Support: Industry Bodies*, IUA, HEA, SOLAS, Skillnet Ireland. • Third-level education organisations to collaborate with industry bodies to expand IFS as an elective topic in business degrees and facilitate paid internships in IFS firms as part of the qualification. <ul style="list-style-type: none"> » Implementation Lead: IUA, THEA, SOLAS, HEIs, ETBs. Implementation Support: Industry Bodies*, HEA, RSFs, other education and training providers. • Industry bodies to provide information to Guidance counsellors, Careers Portal, and other career guidance sources, in relation the industry and career types, etc. <ul style="list-style-type: none"> » Implementation Lead: Implementation Group. Implementation Support: Industry Bodies* <p>Implementation Timeframe: Q1 2025</p>
8	<p>In addition to increasing domestic skills supply, measures to access skilled individuals from outside Ireland should be enhanced.</p> <ul style="list-style-type: none"> • Industry bodies to collaborate with international talent specialists to develop and implement targeted campaigns to attract specialist talent from overseas, particularly for difficult-to-fill opportunities. <ul style="list-style-type: none"> » Implementation Lead: IDA. Implementation Support: Industry Bodies*. <p>Implementation Timeframe: Q2 2025</p>
9	<p>CSO and other State agencies to collaborate on enhancement of Labour Market Information at sub-sectoral level in the IFS sector.</p> <p>Implementation Lead: CSO. Implementation Support: SLMRU, HEA, IDA, EI, DETE, D Finance. Implementation Timeframe: Scoping work to be completed by Q3 2024</p>

Notes:

***Industry Bodies:** Aircraft Leasing Ireland, BPF, FSI, Insurance Ireland, The Insurance Institute, IAIM, Irish Funds, LIA, FSU

Acronyms Used Above

BPFI	Banking and Payments Federation Ireland
CSO	Central Statistics Office
DETE	Department of Enterprise, Trade and Employment
DFHERIS	Department of Further and Higher Education, Research, Innovation and Science
EI	Enterprise Ireland
ETBs	Education and Training Boards
FSI	Financial Services Ireland (Ibec)
FSU	Financial Services Union
HEA	Higher Education Authority
HEIs	Higher Education Institutes
IAIM	Irish Association of Investment Managers
Ibec	Irish Business and Employers Confederation
IDA	Industrial Development Authority
IOB	Institute of Bankers
IUA	Irish Universities Association
LIA	Life Insurance Association
NAO	National Apprenticeship Office
NCI	National College of Ireland
RSFs	Regional Skills Fora
SLMRU	Skills and Labour Market Research Unit (SOLAS)
THEA	Technological Higher Education Association

5.3 Overall Conclusion

The International Financial Services industry has significant potential for future growth, particularly in the high potential sub-sectors identified in this report. However, assuming the levels of growth projected by firms in the sector come to fruition, significant existing skills shortfalls are likely to intensify and/or new gaps emerge in key areas if appropriately targeted and focused actions are not prioritised by government, industry and education and training providers. The successful implementation of the recommendations set out in this report will, however, enable the potential of the IFS niche sectors to be unlocked and their increased contribution to the Irish economy to be realised.

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Annex 2: In-Demand Qualifications

The tables below list those in-demand qualifications, by sub-sector, which had multiple citations in the responses to Indecon's survey research among companies in each sub-sector.

In-Demand Qualifications, Asset Management	
Formal qualifications – current	Formal qualifications – future
ACCA	Grad/ postgrad degree in business/finance/economics (e.g., MBA, MBS in Finance, Treasury and Banking)
CFA	CFA
ESG CFA	Risk, Compliance, Governance
Legal	CIMA
Accounting	Cyber/IT/Digital/Blockchain
	Data Science
	Sustainability/ESG
	Accounting
	ACCA
	Legal

Source: Indecon Survey of IFS Companies

In-Demand Qualifications, Asset Management	
Formal qualifications – current	Formal qualifications – future
Compliance skills	Risk and Compliance, including "The Regulatory Reporting in the ROI"
Undertaking ACCAs for junior and senior Finance roles	
Finance	

Source: Indecon Survey of IFS Companies

In-Demand Qualifications, Asset Management	
Formal qualifications – current	Formal qualifications – future
Bachelor’s degree Finance/Business with investment focus	IT/ Cyber/ Software/ Coding for Accountancy and Finance
Accountancy qualifications (CA, CPA, ACA)	Investment qualifications
CFA	Accountancy Qualified
CFA Certificate in ESG Investing	CFA
Coding/Digital/Maths	CFA Certificate in ESG Investing
Risk and Compliance courses/specialism	Business/ Finance degrees
Project Management	Digital/ Data Analysis/ Maths degrees
Front office/ general experience	ESG/ Sustainable Finance
ACCA	Risk, compliance
Postgraduate (business/ finance) degree	Professional/ Financial risk manager by PRMIA/ GARP
Qualified fund specialist and accountant	IOB Designated Persons in a Fund Management Company

Source: Indecon Survey of IFS Companies

In-Demand Qualifications, Asset Management	
Formal qualifications – current	Formal qualifications – future
Technical/Engineering qualifications (aircraft specific, with business acumen)	
Solicitor qualifications	

Source: Indecon Survey of IFS Companies

In-Demand Qualifications, Asset Management	
Formal qualifications – current	Formal qualifications – future
Qualified Actuaries	Compliance & Risk Qualifications (e.g. Licentiate of Association of Compliance Officers)
Accounting	Engineering/ IT/ Computer Science
Risk and Compliance qualifications	IT Security Certifications
Insurance qualifications	.Net/IT Qualification
Certified Insurance Practitioner (CIP)	NFQ Level 8 In IT or Data Analytics
Ordinary Bachelor's Degree or equivalent NFQ Level 7 Qualifications	Systems interfaces
Master's Degree, Postgraduate Diploma or equivalent NFQ Level 9 Qualifications	Digital Strategy Innovation
Minimum APA (Commercial General Insurance)	RPA
ACII	Data Analytics/ Maths
Diploma in Risk Management	Part and Qualified Actuaries
Internal audit	Accounting qualifications (institute of chartered accountants)
Legal and Product Development	Economics/ Business degrees with insurance focus
	APA
	CIP
	Legal
	Finance
	Risk management
	ACII
	NFQ Level 8 in Sustainability/ESG
	Project / Programme Management

Source: Indecon Survey of IFS Companies

In-Demand Qualifications, Asset Management	
Formal qualifications – current	Formal qualifications – future
	PhDs in engineering and Tech
Risk Management: Quantitative Finance, Maths, GARP	Risk Management: Quantitative Finance, Maths, GARP
Accounting: Finance, ACCA, CIMA Compliance/AML: Finance/Commerce,	Accounting: Finance, ACCA, CIMA Compliance/AML: Finance/Commerce,
LCOI Credit: Finance/Commerce	LCOI Credit: Finance/Commerce
CFA Treasury: Finance/Commerce, Quantitative Finance, CFA	CFA Treasury: Finance/Commerce, Quantitative Finance, CFA

Source: Indecon Survey of IFS Companies

In-Demand Qualifications, Asset Management	
Formal qualifications – current	Formal qualifications – future
Formal qualifications – current	Formal qualifications – future
BSc / MSc/ PhD in Science, Technology, Engineering or Maths	BSc / MSc/ PhD in Science, Technology, Engineering or Maths.

Source: Indecon Survey of IFS Companies

Annex 3: Selected Examples of Micro-Credential Courses

IFS-Relevant Micro-credential Courses by Subject Topic – Business and Management
Business and Business Administration
Aircraft Leasing
Artificial Intelligence Strategy and Transformation
Creating Value with ESG
Design Research
Export in the Context of Global Supply Chain
Finance for Non-Finance Executives
Foundations in Lean OPS Excellence
Introduction to Lean Skills
Leading Business Analytics and Big Data
Leading People
Leading Teams
Life Cycle Assessment
Negotiating for Value
Organisational Behaviour 1
Principles 2: Custom Control
Principles and Practices of Business and Human Rights
Psychology of Human Behaviour
Public Procurement Compliance and Support Systems
Responsible Management and Leadership (ESG)
Selling for Founders
Strategic People Management
Supply Chain Management and CRM
Business Ethics
Principles and Practices of Business and Human Rights
Digital, Data and Analytics
Data Analysis and Visualisation
Digital Disruption and Transformation
Enhancing Critical and Innovative Thinking and Problem Solving
Future of Artificial Intelligence
Leading Business Analytics and Big Data
Leading Digital Marketing Strategy
Leading Digital Transformation in Organisations
Prof Cert in Digital Financial Services and Data Analysis
Prof Cert in Digital Risk, AML and Financial Crime Prevention

Entrepreneurship and Innovation
Enhancing Critical and Innovative Thinking and Problem Solving
Entrepreneurship for the Nature-Based Enterprise
Selling for Founders
Environmental, Social and Governance
Energy Management for Organisations
Entrepreneurship for the Nature-Based Enterprise
Environmental Management for Organisations
Life Cycle Assessment
Prof Cert in Responsible and Sustainable Finance
Responsible Management and Leadership (ESG)
Finance and Accounting
Aircraft Leasing
Corporate Airline Finances
Finance for Non-Finance Executives
Finance for Non-Financial Managers
Integrated Risk Management
Prof Cert for Designated Persons in a Fund Management Company
Prof Cert in Asset Management
Prof Cert in Capital Markets, Investments and Funds
Prof Cert in Complex Financial Instruments in International Financial Services
Prof Cert in Conduct Risk, Culture and Operational Risk Management
Prof Cert in Consumer Protection Risk, Culture and Ethical Behaviour in Financial Services
Prof Cert in Digital Financial Services and Data Analysis
Prof Cert in Digital Risk, AML and Financial Crime Prevention
Prof Cert in Financial Advice
Prof Cert in Fintech
Prof Cert in International Investment Funds Services
Prof Cert in Pensions and Retirement Advice
Prof Cert in Personal Debt Management and Personal Insolvency
Prof Cert in Responsible and Sustainable Finance
Prof Cert in Retirement Planning
Prof Cert in Stockbroking
Leadership and Management
Advanced Negotiation Skills
Entrepreneurship for the Nature-Based Enterprise
Finance for Non-Finance Executives
Finance for Non-Financial Managers
Foundations in Lean OPS Excellence
Leading Business Analytics and Big Data
Leading Digital Marketing Strategy
Leading Digital Transformation in Organisations
Leading People
Leading Teams

Management
Management and Leadership
Management of Change
Managing Change and Conflict
Mentoring for Equality, Diversity and Inclusion
Negotiating for Value
Principles and Practices of Business and Human Rights
Responsible Management and Leadership (ESG)
Strategic Management
Strategic People Management
Marketing and Advertising
Business Communications
Leading Digital Marketing Strategy
Marketing Communications in a Digital Age
Marketing Technology Products
Psychology of Consumer Behaviour
Selling for Founders
Operations and Quality Management
Fleet Planning
Foundations in Lean OPS Excellence
Introduction to Lean Skills
Procurement
Public Procurement Compliance and Support Systems
Project Management
Fleet Planning
Regulation and Compliance
Principles 2: Custom Control
Product Development, Validation and Authorisation
Prof Cert in Compliance
Prof Cert in Consumer Credit
Prof Cert in Data Protection
Prof Cert in Digital Policy
Prof Cert in Financial Crime Prevention
Prof Cert in Stockbroking
Prof Diploma in Compliance
Public Procurement Compliance and Support Systems
Regulatory Compliance
Regulatory Investigations

Strategy
Artificial Intelligence Strategy and Transformation
Foundations in Lean OPS Excellence
Leading Digital Marketing Strategy
Principles and Practices of Business and Human Rights
Strategic Management
Supply Chain Management
Export in the Context of Global Supply Chain
Import in the Context of Global Supply Chain
Introduction to Supply Chain Management
Life Cycle Assessment
Supply Chain Management and CRM
Workplace Skills
CPD in Workplace Change: Practice and Skills

Source: MicroCreds.ie

IFS-Relevant Micro-credential Courses by Subject Topic – IT and Computer Science
Automation and AI
Advanced Data Storytelling
Artificial Intelligence and Machine Learning
Artificial Intelligence Strategy and Transformation
Data Analytics
Data Analytics with R
Digitalisation of Process
Ethics and Law for Artificial Intelligence
Future of Artificial Intelligence
Introduction to Artificial Intelligence
Introduction to Cyber-Physical Systems and Internet of Things
Introduction to Data Analytics/ Visualisation & Machine Learning
Introduction to Data Communications
Introduction to Scientific Computing in Artificial Intelligence
Machine Learning and Natural Language Processing
Machine Vision and Image Processing
Natural Language Processing: An Introduction
Computing and IT Skills
Digital Competences
Introduction to Artificial Intelligence
Law and Analytics

Data Science
Advanced Data Programming with R
Advanced Data Storytelling
Advanced Practices of Classification
Artificial Intelligence and Machine Learning
Bayesian Analysis
Cybersecurity Law
Data Analytics
Data Analytics with R
Data Programming with C
Data Programming with Python
Data Programming with R
Data Programming with SAS
Digitalisation of Process
Future of Artificial Intelligence
Introduction to Cyber-Physical Systems and internet of Things
Introduction to Data Analytics
Introduction to Data Analytics/ Visualisation & Machine Learning
Introduction to Data Communications
Introduction to Scientific Computing in Artificial Intelligence
Law and Analytics
Machine Vision and Image Processing
Monte Carlo
Multivariate Analysis
Natural Language Processing: An Introduction
Predictive Analysis 1
Statistical Machine Learning
Statistical Network Analysis
Stochastic Models
Time Series

ICT
Advanced Practices of Classification
Artificial Intelligence Strategy and Transformation
Designing and Building Interactive Online Training
Digital Literacy and Young People
Lawyering, Technology and innovation
Introduction to Emerging Technologies
Leading Digital Transformation in Organisations
Log Files and Event Analysis
OT-ICS Networks and Protocols
Secure OT/ICS Networks
Software and Applications Development
Fundamentals of Programming
Introduction to Artificial Intelligence
Lawyering, Technology and innovation

Source: MicroCreds.ie

IFS-Relevant Micro-credential Courses by Subject Topic - Maths, Economics and Statistics
Financial Mathematics
Measurement Theory
PDES for Financial Mathematics

Source: MicroCreds.ie

Annex 4: ESG / Sustainable Finance Coverage on HE Courses

Coverage of ESG or Sustainable Finance Content on Selected Undergraduate HE Courses			
Course Title	College	ESG or Sustainable Finance Module	Title of Module
Economics and Finance	UCD	No	
Finance	UCC	No	
Bachelor of Commerce	UCD	No	
Bachelor of Commerce International	UCD	Yes	Sustainable Finance
Accounting and Finance	Dublin City University	No	
Quantitative Finance	Maynooth University	No	
Economics and Finance	Technological University Dublin	No	
Accounting and Finance	Maynooth University	No	
Accounting and Finance	Technological University of the Shannon	No	
Economics and Finance	Maynooth University	No	
Finance	Maynooth University	No	
Accounting and Finance	National College Ireland	No	
Economics and Finance	ATU Galway	No	
Accounting and Finance	Griffith College	No	
Accounting and Finance	Technological University Dublin	No	
Accounting and Finance	Dundalk Institute of Technology - DKIT	No	
Accounting and Finance	Dublin Business School	No	
International Economics	Maynooth University	No	
Finance and Investment Management	Ulster University	No	
Business Studies	UCD	No	
Law and Business	Trinity College Dublin	Yes	Sustainability Entrepreneurship
Commerce	UCD	Yes	Sustainable Finance

Business, Economics and Social Studies (BESS)	Trinity College Dublin	Yes	International Governance and Sustainable Business
Actuarial and Financial Studies	UCD	No	
Commerce	University of Galway	Yes	Introduction to Sustainability
International Business	University of Limerick	No	
Business Studies	Dublin City University	Yes	Responsible Mgmt. & Lship for Sustainable Bus.
Digital Business and Innovation	Dublin City University	No	
Commerce	UCC	Yes	Sustainability in Modern Businesses
Economics	UCC	No	
International Business	UCC	Yes	Sustainability in International Businesses
International Business	Maynooth University	Yes	Sustainable Business and Responsible Management
Business and Management	Maynooth University	Yes	Sustainable Business and Responsible Management

Source: Indecon review of selected higher education courses

Annex 5: Detailed Future Occupational Requirements

Additional Occupational Categories for Future Employment Provided by Survey Respondents
Fintech and Payments
Compliance and MLRO
Sales/ Client Managers
Asset Management, Investment Funds and Securities Services
Compliance and risk
Operations
Distribution
Business Development/Client Service
Investment oversight professionals
Distribution oversight professionals
Operations
Middle Office - Portfolio Analysts
Investor Services
AML / KYC
Administrators and Specialists
Client Development & Product
Fund accounting
CEO
Shareholder services
Financial reporting and new business
Risk manager(operational)

Insurance and Reinsurance
Team Leads
Claims Handlers
Digital
Operations, Admin and Other
Data scientist
Customer Service Agents
Risk and compliance
Data analysts
Customer care operations
Sustainability, ESG related roles
2nd Line Defence Roles including Data protection, Risk Management and Compliance
Sales, distribution, marketing, comms, propdev
Marketing
HR/Org Dev
Commercial
International Banking and Wholesale Capital Markets
Compliance
Aircraft Leasing and Finance
Marketing executives
Engineers
Investor Relations professionals
Technical employees
Data Analysts
HR specialists

Source: Indecon survey of IFS companies

Annex 6: Members of the Steering Group

Martina Kelly (Chair)	Institute of Bankers
Alan Zambra/Heather Cuddy	Department of Finance
Karen Cohalan	Enterprise Ireland
Kieran McNally	Higher Education Authority
Maeve McConnon/Conall Dee	IDA Ireland
Hilary McPartland	Regional Skills Fora
Donna Noonan	IFS Skillnet
Dermot Hardy/Gavin Purtill	Banking & Payments Federation Ireland
Ruth NicGinneá	Insurance Ireland
Michael D'Arcy	Irish Association of Investment Managers
Michael Blighe	Irish Funds
Alex Fisher	State Street
Don O'Connor (Project Manager)	EGFSN Secretariat, Department of Enterprise, Trade and Employment
Rhodri Lloyd	EGFSN Secretariat, Department of Enterprise, Trade and Employment

Annex 7: Members of the Expert Group on Future Skills Needs

Tony Donohoe (Chair)	Formerly Ibec
Marcus Breathnach	Head of Secretariat and Principal Officer, Labour Market and Skills Unit, Department of Enterprise, Trade and Employment
Gary Tobin	Assistant Secretary, Department of Enterprise, Trade and Employment
William Beausang	Assistant Secretary, Department of Further Education and Training and Higher Education, Research, Innovation and Science
Stephanie O'Brien	Principal Officer, Department of Further and Higher Education, Research, Innovation and Science
Donal Leahy	Enterprise Ireland
Dr Vivienne Patterson	Higher Education Authority
Breda O'Toole	IDA Ireland
Dr Laura Bambrick	Irish Congress of Trade Unions
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