AIB

Social Bonds Impact Report

Final Report

February
2022

Cambridge Econometrics
Cambridge, UK

info@camecon.com
www.camecon.com

Contact person: Shyamoli Patel (sp@camecon.com)

Authors: Xinru Lin (xl@camecon.com)
Shyamoli Patel (sp@camecon.com)

Project director: Chris Thoung (ct@camecon.com)

Cambridge Econometrics' mission is to provide clear and useful insights, based on rigorous and independent economic analysis, to address the complex challenges facing society.
www.camecon.com

Cambridge Econometrics Limited is owned by a charitable body,
the Cambridge Trust for New Thinking in Economics.
www.neweconomicthinking.org

Contents

Page

1 Introduction 5

2 Macro-category 1 – Approach 7

2.1 Approach 7

2.2 Limitations 10

3 Macro-category 1 – Summary 12

3.1 Summary results 12

4 Macro-category 1 – Education 14

4.1 Ireland 14

4.2 UK 14

4.3 OECD (excluding Ireland and the UK) 14

5 Macro-category 1 – Social Housing 15

5.1 Ireland 15

5.2 UK 15

6 Macro-category 1 – Healthcare 16

6.1 Ireland 16

6.2 UK 16

6.3 OECD (excluding Ireland and the UK) 16

7 Category 2 – Approach 18

7.1 Input-output (I-O) analysis 18

7.2 Limitations 19

7.3 Assumptions 20

8 Category 2 – Results 21

Appendices 24

Appendix A Assumptions 25

Figures

Figure 2.1: Logic framework for education service 8
Figure 2.2: Logic framework for social housing 8
Figure 2.3: Logic framework in healthcare service 10
Figure 3.1: AIB loans by type of service and country 12
Figure 8.1: Total jobs impacts of outstanding term loans by sector 22
Figure 8.2: Total jobs impact of outstanding RCFs by sector 23

Tables

Table 3.1: Summary of beneficiaries by type of service and country 13
Table 8.1: Impact of AIB's SME lending by type of loan 21

Table A.1: Average household size by number of bedrooms in England and Wales 25
Table A.2 : Average length of stay in hospital in France and Germany (days) 25
Table A.3: Hospital bed occupancy rates in France and Germany (%) 25

1 Introduction

Cambridge Econometrics (CE) was commissioned by AIB to provide (1) an impact assessment methodology, and (2) quantify the impacts of AIB's social bond portfolio in Ireland, the UK, and the OECD (excluding Ireland and the UK). This assessment follows the establishment of AIB's Social Bond Framework, which will serve as a tool to create transparency around funds targeted to provide positive societal impact and/or mitigate social problems.[1] In addition, with its Social Bond Framework, AIB strives to further its focus on economic and social inclusion and being a responsible member of society.

AIB's Social Bond Framework has been established in accordance with the International Capital Market Association (ICMA) Social Bond Principles 2021 (SBPs).[2] The Social Bond Framework also recognises the significant elements of the EU Platform on Sustainable Finance, June 2021. In alignment with its social sustainability strategy and goals, the Framework focuses on the following Use of Proceeds categories, which will serve to achieve social benefits for targeted population groups, in alignment with National Policy Frameworks, where applicable:

- **Access to Healthcare**
  - Social benefits: (i) Increase access to quality, timely and accessible healthcare; (ii) Enhance quality and accessible care for an aging population; and (iii) Increase availability of quality medical equipment to healthcare facilities and individuals
  - Target population: (i) General public; (ii) Individuals with specific physical and/or mental conditions, including cognitive deficit(s); (iii) Elderly people; and (iv) Individuals in need of rehabilitation services
- **Access to Education**
  - Social benefits: (i) Increase access to quality and accessible education and vocational training; and (ii) Increase access to quality, safe and affordable student accommodation
  - Target population: (i) Students, including low-income students; and (ii) Adults benefitting from vocational training
- **Social and Affordable Housing**
  - Social benefits: (i) Allow for universal access to decent housing; (ii) Promote the social inclusion of all, including low-income people
  - Target population: Low-income individuals and families meeting the social and/or affordable housing requirements defined by local authorities in Ireland and the UK

[1] https://aib.ie/investorrelations/debt-investor/social-bond-framework

[2] https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/social-bond-principles-sbp/

- **SME Financing**
  - Social benefits: (i) Employment generation and retention; (ii) Reduction of social and economic inequalities; and (iii) Foster economic growth in deprived areas
  - Target population: SMEs in socioeconomically disadvantaged areas in Ireland

In the context of the above Social Bond Framework, the purpose of this report is to assess, on a best-effort basis, the social impacts of AIB's loans.[3]

The scope of our assessment covers the following categories:

- Macro-category 1: Access to essential services including education, housing and healthcare. The focus of these impacts is on the estimated number of beneficiaries of these three services.
- Category 2: SME lending. The focus of these impacts is on the estimated number of jobs created and/or retained by lending to SMEs.

In performing this assessment, we considered alignment with the portfolio approach described in ICMA's *'Working Towards a Harmonized Framework for Impact Reporting for Social Bonds'*[4].

The first part of this report presents the findings for Macro-category 1, with estimates of the number of beneficiaries of projects that have been at least part-funded by AIB. Data limitations prevent us from identifying the number directly attributable to AIB loans. A description of the approach, any underlying assumptions, and limitations is provided in Chapter 2. A brief summary of the impacts is given in Chapter 3, with the subsequent chapters presenting the results for each service category.

The second part of this report presents the findings for Category 2, with estimates of the number of jobs created and/or retained by AIB lending to SMEs. A description of the approach and limitations is provided in Chapter 7. A brief summary of the impacts is then presented in Chapter 8.

[3] As highlighted in the EU's Platform on Sustainable Finance, social impacts are more challenging to quantify than environmental impacts, as social impacts are often described in more qualitative terms (Draft Report by Subgroup 4: Social Taxonomy, July 2021: https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sf-draft-report-social-taxonomy-july2021_en.pdf).

[4] https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Harmonized-Framework-for-Impact-Reporting-for-Social-BondsJune-2020-090620.pdf

2 Macro-category 1 – Approach

2.1 Approach

Our analysis identifies the number of beneficiaries of projects to which AIB loans have contributed at least in part. In some cases, the total reported impacts may have been achieved in combination with funds from other (i.e. non-AIB) sources.

In the ideal case, the number of beneficiaries of different projects would be apportioned/scaled to the amount of finance specifically provided by AIB. However, loan applicants could seek funds for a project from multiple sources. AIB's loan information does not provide detail on the extent to which the AIB loan specifically contributes to any given project (and there are a large number of projects across the various categories considered) compared to other sources of funds contributing to that project.

Instead, what AIB's data provide is information about the current value of an outstanding loan provided by AIB (in this report, as at 31/12/2021) and the size/nature of the overall project (to which multiple financial institutions could have extended loans).

Thus, based on the available information, it is only possible to estimate the total number of beneficiaries of projects that AIB has helped to fund. That is, the AIB loan might be one of multiple sources of funds to contribute to the final impact figures, rather than solely responsible.

The approach to estimating the beneficiaries described above is based on a series of logic frameworks, each consisting of three components:

- output indicators: value of loans, purpose of loans and any borrower-specific information, provided by AIB
- assumptions: assumptions researched and developed by CE to estimate the impact in each service category
- impact indicators: estimates of impact (i.e. number of beneficiaries) in each service category based on the previous two components

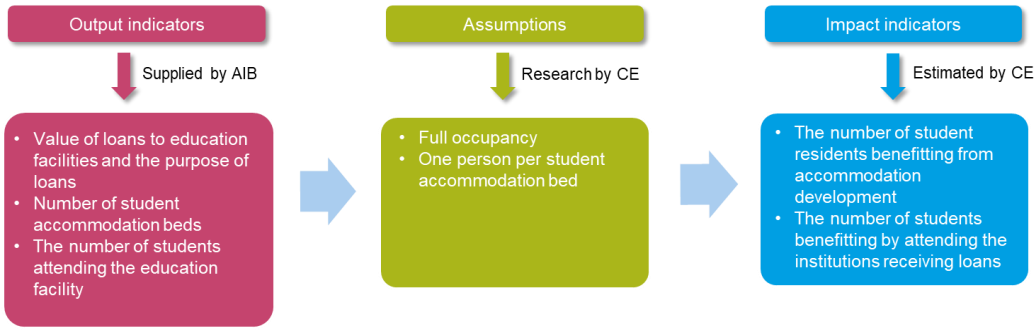
Where data are not available to estimate beneficiaries, summary figures are provided instead (as set out below, on limitations). The implication is that, depending on data availability, the numbers of beneficiaries of different projects may be estimated (and presented) in different ways in this report. This concerns, for example, the number of students benefitting from student accommodation being funded by loans compared to the number of students attending an educational institution which receives some form of loan(s). The two are not directly comparable and we make this distinction clear in the results that follow. As such, the size of the estimated impacts across different projects in different countries can vary substantially. Any comparisons will need to be done with caution.

The approach used for each category is outlined below.

Education

The logic framework used to estimate the number of beneficiaries of education services (here, students) is shown in Figure 2.1 below.

Figure 2.1: Logic framework for education service



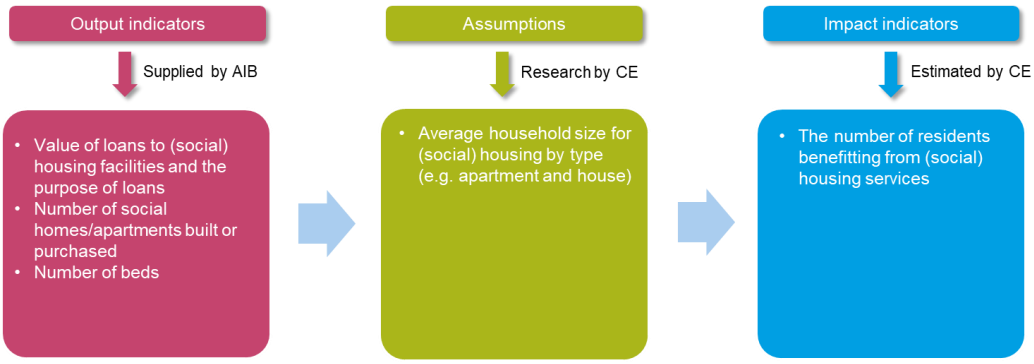
AIB's data provide the number of student accommodation beds supported by AIB loans. We assume that all new student accommodation is fully occupied, and so the number of beneficiaries is equal to the number of student accommodation beds.

In instances in which the loans were not funding a specific asset, but provided for more general purposes, the number of beneficiaries cannot be estimated in the same way. Instead, the number of students attending the institution has been provided. This is not the same as the number of beneficiaries and, instead, gives a sense of the scale of the recipient. This applies to the OECD (excluding Ireland and the UK) only.

Social Housing

Figure 2.2 shows the logic framework used to estimate the number of beneficiaries (residents) of social housing services.[5]

Figure 2.2: Logic framework for social housing



[5] There is a difference between Social and Affordable housing in the Irish context. Local authorities (or housing authorities) are the main providers of social housing for people who cannot afford their own accommodation. Local authority housing is allocated according to eligibility and need, and rents are based on the household's ability to pay. Housing organizations (associations and co-operatives) also provide social housing for people who cannot afford to buy their own homes. Affordable housing schemes are aimed to help lower-income households to buy their own homes. The schemes provide eligible first-time purchasers the chance to buy newly constructed homes and apartments at prices significantly less than their market value.

In cases in which AIB's data provide the size of a housing unit (the number of bedrooms), we apply an assumption about the average household size (differentiated by number of bedrooms). Multiplying the number of housing units by the average household size gives an estimate of the number of beneficiaries. The assumptions for average household size are based on the England and Wales Census 2011 dataset, 'Tenure by household size by number of bedrooms'. England averages are used for the UK assumption, as all the developments are based in England. In the absence of any social housing data on household size by number of bedrooms for Ireland, we again use figures from the 2011 Census, using England and Wales (combined) as a proxy.

In cases in which the size of a housing unit is not provided in AIB's data, the assumptions for average household size by bedroom are multiplied by the number of housing units of that size to estimate the number of beneficiaries, assuming that:

- all apartments provided in Ireland have two bedrooms – this is based on the size of apartments listed in the data provided by AIB
- all houses provided in Ireland have three bedrooms – this is based on the size of houses listed in the data provided by AIB
- an average household size of 2.1 for social rented apartments in Ireland
- an average household size of 3.0 for social rented houses in Ireland
- an average household size of 2.8 for all social rented accommodation in the UK – the UK housing data provided by AIB do not distinguish apartments and houses, or provide information on the number of bedrooms per unit. Therefore, an average of all household sizes by number of bedrooms from the England and Wales Census 2011 was multiplied by the number of housing units to estimate the number of beneficiaries in the UK.[6]

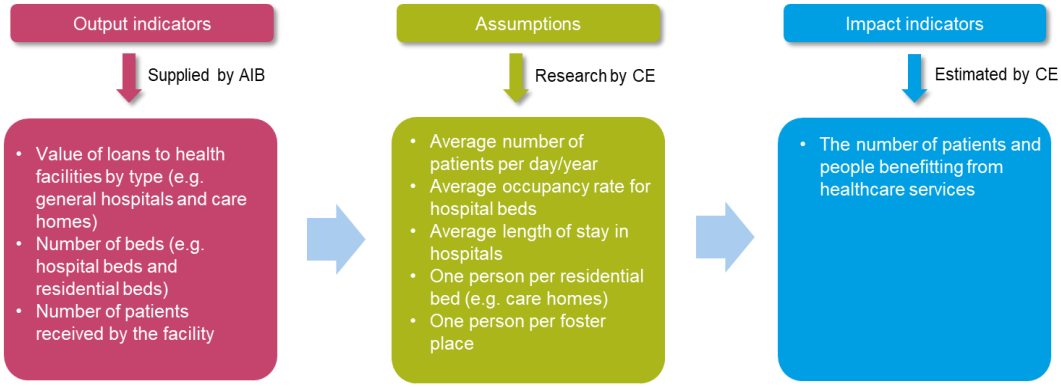
It is important to note that there is a difference in the nature of the social housing projects financed in Ireland and the UK, and AIB's overall role in those projects. In Ireland, AIB is the sole financier of a smaller number of projects whereas, in the UK, AIB's contribution is in relation to larger syndicated facilities that finance a larger number of social housing units. As a result, the ratios of beneficiaries to loan volume for social housing can seem disproportionate when comparing Ireland and the UK.

[6] See Table A.1 in Appendix A.

Healthcare

The logic framework that is used to estimate the number of beneficiaries by type of healthcare services (i.e. patients and people in specialised nursing homes and schools) is shown in Figure 2.3.

Figure 2.3: Logic framework in healthcare service



For residential and care facilities, AIB's data provide the number of beds supported by AIB loans in these facilities. In these instances, we assume that all beds are occupied such that the number of beneficiaries equals the number of beds.

For hospitals and clinics, the number of beneficiaries have been estimated as the number of patients received by these facilities. The estimates of the number of patients received by these facilities are based on a combination of patient numbers provided by AIB and published annual reports.

There are two instances (see Section 6.3) in which the number of patients treated by a hospital is estimated based on a series of assumptions (rather than based on patient numbers provided by AIB and published annual reports).[7] In these cases, the number of beds in the hospital is multiplied by 365 (the number of days in a year) to calculate the bed capacity in a year. This is divided by the average length of stay in hospitals, and then multiplied by hospital bed occupancy rates to estimate the total number of patients treated.

2.2 Limitations

As well as the aforementioned limitations in identifying the number of beneficiaries specifically attributed to AIB loans, other limitations are listed below.

We have not provided estimates of the number of beneficiaries in cases in which:

- the borrowers are pure players, and their services are not directly associated with providing services to users of facilities or creating more capacity at a facility (e.g. companies that manufacture and sell healthcare-related products or services)

[7] See Table A.2 and Table A.3 in Appendix A.

- the purpose of the loan is not directly associated with providing services to users of a facility or creating more capacity at a facility (e.g. loans to fund general capital expenditure for a facility)

In these instances, we present the total value of the loans provided by AIB and, where applicable, the number of people using the services enabled, in part, by AIB financing (e.g. the number of students attending a university), based on information provided by AIB and supplemented by published information such as provider websites and reports.

3 Macro-category 1 – Summary

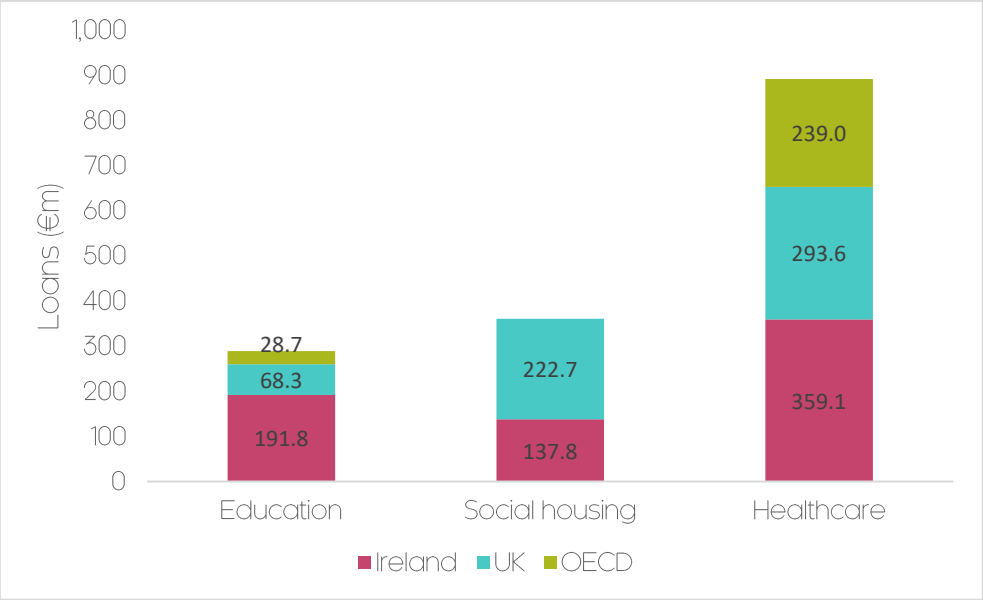
3.1 Summary results

Figure 3.1 presents the total value of outstanding loans AIB provided to support facilities in education, housing and healthcare, broken down by country. This represented the identified eligible pool as at 31/12/2021.[8]

AIB provided loans with a total value of €1.5bn across all services and countries. Of that €1.5bn, 58% (€891.7m) was provided to support facilities in healthcare, followed by 23% in social housing (€360.5m) and the rest in education services (€288.8m).

Ireland has been the largest beneficiary for education and healthcare lending, receiving €191.8m and €359.1m, respectively. Social housing lending is split between the UK and Ireland with €222.7m in the UK and €137.8m in Ireland.

Figure 3.1: AIB loans by type of service and country



Based on the information about the loans and the size/nature of the projects, Table 3.1 summarises the estimated numbers of beneficiaries of projects to which AIB loans have contributed.

[8] AIB advised that the pool of loans provided is not exhaustive, nor does it represent all eligible loans they have identified for each category.

Table 3.1: Summary of beneficiaries by type of service and country

	Education	Social housing[9]	Healthcare
Ireland	**1,817** students in student accommodation; and **4,094** students attending university	**2,676** people in social homes	**529,009** people using care services and in hospitals
UK	**5,927** students in student accommodation	**33,670** people in social homes, once fully operational	**846,764** people using care services and in hospitals
OECD (excluding Ireland and the UK)	**48,400** students attending universities	-	**>40m** patients in hospitals

Note(s): Estimated numbers of beneficiaries are for entire projects, to which AIB loans have contributed at least in part, though not necessarily in full.
The number of beneficiaries is estimated based on assumptions or taken directly from a combination of patient numbers provided by AIB and published annual reports. See later chapters for details.
The table does not include beneficiaries of AIB loans associated with i) healthcare service providers, whose services are not directly associated with providing services to the users of a healthcare facility or creating more capacity for a healthcare facility; and ii) housing association, when a loan is not directly attributable to a certain housing development.
Source(s): AIB; Cambridge Econometrics.

[9] The seemingly disproportionate ratios of beneficiaries to loan volume for social housing in Ireland and the UK is a factor of the nature of the projects financed and AIB's overall role in those projects. In Ireland, AIB is the sole financier of a smaller number of projects, whereas in the UK, AIB's contribution is in relation to larger syndicated facilities that finance a larger number of social housing units.

4 Macro-category 1 – Education

In education, as at 31/12/2021, outstanding loans provided by AIB totalled **€288.8m**, supporting multiple service providers around the world. For Ireland and the UK, we estimate the number of beneficiaries on the assumption that all new student accommodation is fully occupied.

When the loans were not funding a specific asset, but provided for more general purposes, the number of beneficiaries cannot be estimated in the same way. Instead, the number of students attending the institution has been provided. This is not the same as the number of beneficiaries and, instead, gives a sense of the scale of the recipient. This applies to the OECD (excluding Ireland and the UK) only.

4.1 Ireland

In Ireland, outstanding loans provided by AIB totalled **€132m**, as a contribution towards four new student housing developments. In their entirety, the total number of beneficiaries of these developments is estimated to be **1,817 student residents each year**.

An additional **€59.8m** of AIB loans was also provided to support the capital requirements of a medical university, with an attendance of 4,094 students.

4.2 UK

AIB provided **€68.3m** in loans as part of wider financing to support two student housing development in the UK. The project is estimated to benefit **5,927 student residents each year**.

4.3 OECD (excluding Ireland and the UK)

A total of **€28.7m** of AIB loans was issued to fund the capital requirements of two education service providers in two other countries (not necessarily/entirely for accommodation): **€20m** in France (a university) with 41,000 students; and **€8.7m** in Spain (a university) with 7,400 students.

5 Macro-category 1 – Social Housing

As at 31/12/2021, AIB had **€360.5m** in outstanding loans extended to social housing providers across the UK and Ireland.

The assumptions described in Section 2.1 are used to estimate the overall impacts of the projects to which AIB has contributed, broken down by country.

5.1 Ireland

Operational

A total of **€121.8m** of AIB loans helped to support five social housing providers and the development of **871 social housing units** (141 apartments and 730 houses).[10] These housing projects are estimated to benefit **2,487 residents each year**.

AIB also provided **€16m** of loans to a fund to part-finance the development of **82 social housing units** (58 apartments and 24 houses). These social housing units are expected to benefit **189 residents each year**.

5.2 UK

AIB provided a total of **€222.7m** of loans to support social housing in the UK, of which:

- **€204.8m** was provided to support nine social housing providers. We estimate that the funded schemes have already benefitted **14,900 residents (by 2021)**, and will benefit an **additional 18,779 residents once all developments have been completed**.
- **€17.9m** was provided to facilitate the capital requirements of a housing association in London, which owns over 5,000 homes.

[10] The social housing providers develop social housing units for Approved Housing Bodies.

6 Macro-category 1 – Healthcare

As at 31/12/2021, **€891.7m** in outstanding loans had been provided by AIB to support healthcare service providers around the world, supporting site developments and corporate expansions, as well as providing refinancing support. Based on the type of healthcare facilities and information available (i.e. number of beds), different assumptions were applied to estimate the number of beneficiaries (see Section 2.1 for more detail). The total estimated impacts (to which AIB's loans will have contributed in part) are reported by country and type of service.

6.1 Ireland

Residential and care facilities

AIB provided a total of **€135.5m** of loans which helped to support residential and care providers in Ireland. AIB's data show that there are 5,119 beds in these providers' facilities. Under the assumption of one bed per person per year, these providers will have supported an estimated **5,119 people per year**.

Hospitals, clinics, and patient care

A total of **€223.6m** of AIB loans was provided in support of eight organisations operating private hospitals and clinics including Primary Care Centres (PCCs).[11] The estimated total number of patients received by these facilities is **523,890 per year**. In contrast to the logic framework set out in Figure 2.3, the number of patients received has been calculated directly, from a combination of patient numbers provided by AIB and published annual reports (e.g. in the case of hospitals).

6.2 UK

Residential and care facilities

AIB provided **€279.1m** of loans, which supported 13 residential and care service providers across the UK. AIB's data show that there are 36,764 beds available in these providers' facilities. In combination with funding from other sources and under the assumption of one person per bed per year, the projects are estimated to support **36,764 people (elderly, children and adults under specialist care) per year**.

General hospitals

A total of **€14.5m** of loans was provided to support a leading hospital group in the UK. This group receives a reported **810,000 patients a year**. The number of patients is taken from a combination of patient numbers provided by AIB and published annual reports. This figure has not been calculated based on assumptions listed in Figure 2.3.

6.3 OECD (excluding Ireland and the UK)

General hospitals

AIB provided a total of **€121.8m** of loans to support six hospitals around the world, of which:

- **€37.3m** was provided to two US hospitals that treat **over 31m patients per year –** the number of patients is taken from a combination of patient

[11] The private hospitals are part of the public treatment procurement schemes.

numbers provided by AIB and published annual reports. It has not been calculated based on assumptions listed in Figure 2.3.

- **€63m** was provided to two French hospitals that treat **over 9m patients per year** – the number of patients is taken from patient numbers provided by AIB. It has not been calculated based on assumptions listed in Figure 2.3.
- **€12.5m** was provided to a French hospital that is estimated to treat **209,510 inpatients per year**, based on the number of beds in the hospital and assumptions about the average length of stay in hospitals, and hospital bed occupancy rates[12]
- **€9m** was provided to a German hospital that is estimated to treat **334,080 inpatients per year**, based on the number of beds in the hospital and assumptions about the average length of stay in hospitals, and hospital bed occupancy rates[13]

Others

AIB also provided **€117.3m** of loans to support seven other healthcare service provider, whose services are not directly associated with providing services to the users of a healthcare facility or creating more capacity for a healthcare facility.[14] Examples include: a US-based manufacturer that makes and distributes wheelchairs and an Italian company that specialises in management and maintenance of medical devices. The loans were provided to those based in the US (€107.4m) and Italy (€9.9m). Beneficiaries from these service providers have not been estimated

While it is not straightforward to measure the beneficiaries, it is still important to recognise the importance of these services to the healthcare system as a whole, especially in terms of improving the efficiency and quality of healthcare services.

[12] See Table A.2 and Table A.3 in Appendix A.

[13] See Table A.2 and Table A.3 in Appendix A.

[14] These are pure player companies as defined by AIB's Social Bond Framework.

7 Category 2 – Approach

The purpose of the Category 2: SME lending analysis is to estimate the impact of AIB's SME loans on the economy in terms of jobs created and/or retained.[15] This chapter outlines the approach used to estimate these jobs, accounting for jobs in the SMEs themselves (direct jobs) as well as the wider economy (indirect and induced jobs; explained below). The process via which the geographical location of these loans to areas of economic dis-advantage was addressed separately by AIB.

7.1 Input-output (I-O) analysis

An input-output (I-O) analysis approach was used to estimate the impacts (employment and gross value added [GVA]) on the Irish economy of SMEs' (that are supported by AIB loans) operational activities (i.e. the expenditure of the SMEs). The SMEs contribute to the Irish economy through these expenditures. The companies' payments to other organisations for goods and services generate receipts for other Irish organisations which, in turn, generate a requirement for (further spending on) inputs further up the supply chain. The I-O approach captures these expenditures in order to quantify the total operational economic impacts on the Irish economy (in terms of GVA) of the SMEs supported by AIB loans. Employment impacts were then consistently estimated using the same data and sources by applying assumptions about productivity (the ratio of output to employment). This gives a measure of the SMEs' economic footprint, and reflects the 'multiplier effect' by which an initial set of purchases generates further purchases elsewhere in the economy to support production.

I-O analysis is a standard technique in economic impact work to understand the relationships between different sectors of the economy and how activity in one sector might generate activity elsewhere, through supply-chain effects. It is frequently applied to shed light on how interventions in one sector can have wider economic implications.

An I-O economic impact tool was developed based on the 2015 Ireland Input-Output table produced by the Central Statistics Office. This table captures the linkages between 58 sectors and between different agents in the Irish economy and the rest of the world. The sectoral detail is important because different sectors have different supply-chain requirements and productivity assumptions (which were used to calculate the employment impacts). The tool was used to calculate the employment and GVA impacts from providing loans to SMEs, identifying:

- the direct impact as that arising specifically from the lending to SMEs by sector. These data were provided by AIB in the form of the balance of loan by company and an associated sector code of the sector the SME operates in, based on AIB's sector classifications. Each SME was mapped

[15] AIB advised that the pool of loans provided represents a portion of those loans extended to SMEs in economically disadvantaged (as defined for Social Bond Framework purposes) areas of Ireland.

to an I-O sector (of which there are 58) and the balance of loan figures were used as the inputs to the I-O tool

- indirect impacts as those generated when suppliers of goods and services must themselves purchase inputs from other sectors of the economy – these follow from the I-O tool (so-called Type I impacts)
- induced impacts as the impacts of people working in sectors where the direct and indirect impacts take place, spending their additional wages and salaries on consumer products and services – these also follow from the I-O tool (Type II impacts)

7.2 Limitations

The limitations of the approach for the SME analysis are listed below.

- Jobs retained (safeguarded) versus jobs created – there is a distinction between the new jobs created by new (additional) activity supported by AIB's loans and any existing jobs retained (safeguarded) by the financial support provided by AIB's loans. In cases in which the SMEs would not have been able to survive in the absence of AIB financing, all the existing jobs would have been lost. The importance of AIB's loans is further highlighted as, in general, SMEs are financed by just one bank. AIB is unlikely to be one of multiple banks financing an SME, and so AIB is more likely to be the sole, significant provider of finance to SMEs relying on loans.

  By the above logic, we estimate the number of jobs supported by the value of AIB loans, distinguishing whether the loans are term funding (capital investment), which are assumed to create jobs; or the loans provide revolving credit, which is assumed to safeguard existing jobs.

  In the absence of access to SMEs' employment data (the number of jobs in each SME), we are unable to comment on the total number of people employed by the SMEs. Our approach can only estimate the number of jobs implied by the value of the loans themselves, and so cannot estimate the total number of jobs safeguarded in instances in which AIB's loans are keeping an SME afloat. The number of retained jobs could therefore be higher than that implied by the approach.
- Interpreting what the loans represent – in the absence of more detailed information on the purpose of the loan and a breakdown of how the loan is used (e.g. expenditure categories), the analysis assumes that the loan value equals the direct impact. The value of each loan was applied to the relevant sector to form the inputs to the I-O tool. The tool then estimates the total impacts of the loan based on how firms in that sector operate on average. In reality, the SME's expenditure could differ from the sector average, but this cannot be reflected in the analysis without having access to more detailed expenditure data. This limitation applies to other similar I-O exercises.
- The impact of the location of the SME – the location of an SME can affect the size of the employment impact its operational activities are likely to have. Average incomes are known to be lower in more deprived areas, and so SMEs located in these areas are likely to have different

employment impacts than would otherwise be implied by using national averages for the productivity assumptions.

In addition, the social impacts of an SME are known to be greater in more deprived areas (money invested in a more deprived area can have more of an impact than the same amount of money being invested in a less deprived area). This could not be captured in the approach within the scope of this project, owing to a need for highly detailed data (which are unlikely to be available). It is however worth noting the issue and that the impacts estimated and reported here are likely to represent a lower-bound estimate.

7.3 Assumptions

Type of loan

The economic and employment impacts of AIB's SME lending on the economy were estimated separately by type of loan to distinguish the impacts in terms of jobs created and/or retained. Specifically, AIB's financing can be classified into:

- Term Loans – loans which support SME's capital investments, which are taken to finance new activities and thus generate new jobs
- Revolving Credit Facilities (RCFs) – loans typically associated with Working Capital-type credit facilities, and assumed to retain existing jobs

Inflation and productivity

The I-O economic impact tool was developed based on the most recent detailed Ireland Input-Output table, for 2015. The table describes the structure of the Irish economy in that year in terms of supply chains (links between industries) and final expenditure (e.g. households, government, trade etc) as well as aspects of income (notably employees' wages and salaries).

Given the 2015 vintage of the economic data that underpins the tool, it is necessary to account for two factors which may have changed in the intervening period (between then and now): inflation and productivity (the ratio of output to employment).

For the purpose of this analysis, adjustments for inflation and changes in productivity over time are based on the following assumptions:

- Inflation – a GVA deflator (for 2020) by sector was calculated using the latest data from Eurostat[16]. The balance of loans provided by AIB was then converted to constant 2015 prices using this deflator, to match the year of the input-output table.
- Productivity – the relevant productivity figures were estimated based on the latest (2020) GVA and employment data by sector from the Central Statistics Office. After deflating GVA to constant 2015 prices, productivity was then calculated based on the deflated GVA and 2020 employment.

[16] National accounts aggregates by industry, Eurostat
https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_a64&lang=en

8 Category 2 – Results

As at 31/12/2021, with reference to the selection of AIB loans provided, €152.7m were term loans and €15.0m were RCFs provided to SMEs.

Table 8.1 shows the estimated direct, indirect and induced impacts of AIB's SME lending in Ireland, by type of loan.

Table 8.1: Impact of AIB's SME lending by type of loan

	Term loans	RCFs
Gross output (€m)		
Direct	152.7	15.0
Indirect	155.9	15.6
Induced	161.4	14.7
Total	**469.9**	**45.3**
GVA (€m)		
Direct	75.6	7.3
Indirect	72.2	7.3
Induced	42.6	3.9
Total	**190.4**	**18.4**
GDP (€m)		
Direct	79.9	7.7
Indirect	76.3	7.7
Induced	45.1	4.1
Total	**201.4**	**19.5**
Employment (FTEs)		
Direct	1,524	116
Indirect	629	63
Induced	451	41
Total	**2,604**	**220**

Note(s): Final impacts are reported in current (nominal) prices.
Sum of direct, indirect and induced results may not precisely match reported totals due to rounding.
GDP impacts have been calculated by applying a (fixed) ratio of GDP to GVA to account for taxes less subsidies on products. This isn't usually measurable on an industry basis so the ratio of economy-wide GVA to GDP is applied to the GVA estimates. This ratio has been calculated from the latest (2020) annual GDP and GVA data from the Central Statistics Office (CSO)[17].

Definition(s): Gross output: total goods and services produced in an economy i.e. the total sales value/revenue.
Gross Value Added (GVA): value of goods and services produced in an economy (i.e. gross output) minus the cost of inputs and raw materials that are attributable to that production. Out of GVA, firms pay wages/salaries and other employment costs; as well as taxes. The remainder is gross operating surplus (broadly, profit/loss).
Gross Domestic Product (GDP): market value of the finished goods and services produced in an economy, or GVA plus taxes less subsidies on products.
Full-time equivalent (FTE) jobs: a measure of employment that accounts for differences in working hours i.e. a full-time job counts as one FTE whereas a part-time job counts as a fraction of an FTE based on the ratio of average part- to full-

[17] National Income and Expenditure 2020: https://www.cso.ie/en/releasesandpublications/ep/p-nie/nie2020/

time hours worked in the CSO data.

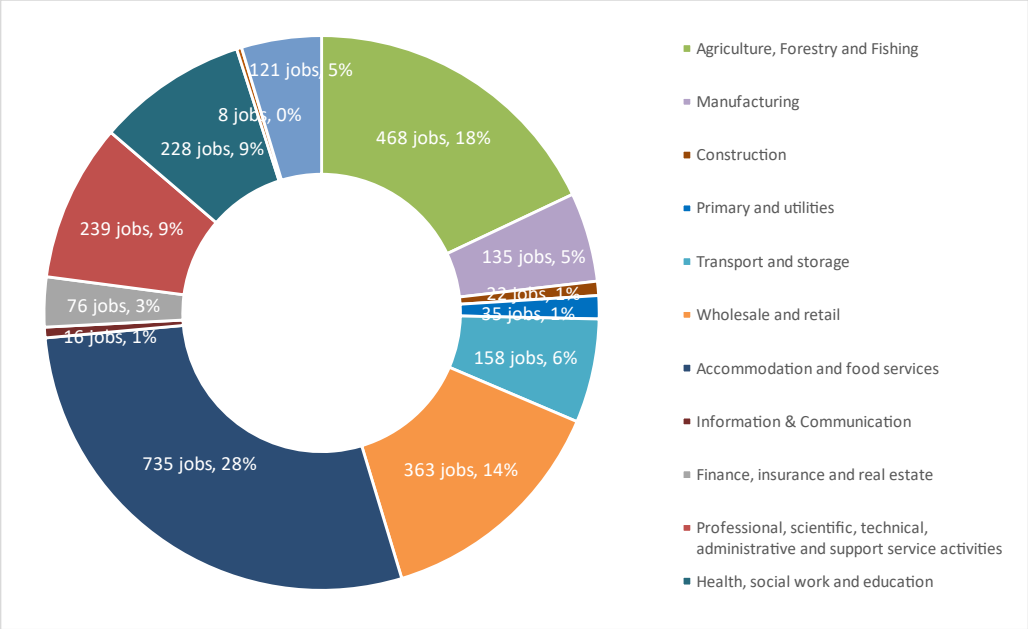
Term loans

An estimated €469.9m in (economy-wide) Gross Output is attributed to these loans. The corresponding Gross Value Added (GVA) amount totalled €190.4m, of which **€75.6m** is directly attributable to outstanding term loans provided by AIB (as above, €152.7m as at 31/12/2021). Through supply chains and higher incomes (paid to employees) this generates a further **€114.8m** of (indirect and induced) GVA elsewhere in the economy.

By our approach, these outstanding term loans have **directly created over 1,500 jobs** and **supported almost 1,100 additional jobs**, resulting in **a total of some 2,600** jobs created across the economy. This implies that, for every **€1m** loans provided to SMEs, approximately **17 jobs** are created, economy-wide.

As shown in Figure 8.1, the largest jobs impacts are in accommodation and food services (accounting for around 30% of total jobs created), agriculture, forestry and fishing (18%) and wholesale and retail (14%).

Figure 8.1: Total jobs impacts of outstanding term loans by sector



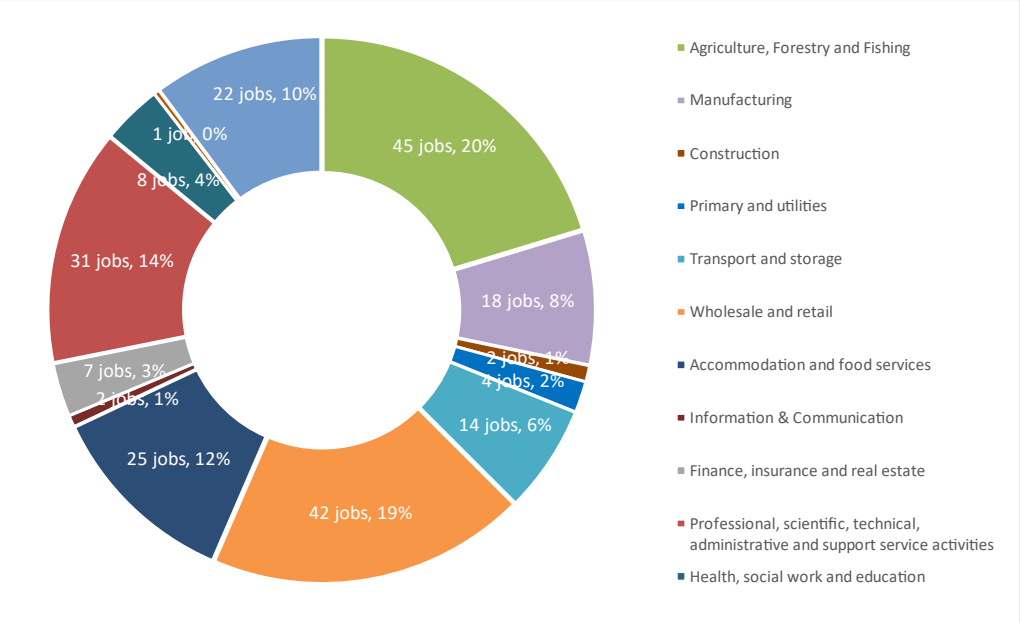
RCFs

Following a similar approach, an estimated €45.3m in Gross Output, and €18.4m of GVA is attributable to RCFs (€15m as at 31/12/2021). Of the €18.4m of GVA, **€7.3m** is directly attributable to the loans, with a further **€11.1m** of (indirect and induced) GVA supported elsewhere in the local economy. In this case, our approach interprets the jobs as being safeguarded by outstanding RCFs provided by AIB, with **some 115 jobs retained directly** and **just over 100 further jobs supported**: **a total of 220 safeguarded jobs in the economy**. This implies that, for the selection of loans we assessed, for every **€1m in RCFs** provided by AIB to SMEs, approximately **15 jobs** are retained across the economy.

Figure 8.2 shows the sectors with the most safeguarded jobs to be: agriculture, forestry and fishing (accounting for 20% of the total number of jobs

retained), wholesale and retail (19%) and professional, scientific, technical, administrative and support service activities (14%).

Figure 8.2: Total jobs impact of outstanding RCFs by sector



Appendices

Appendix A Assumptions

Table A.1: Average household size by number of bedrooms in England and Wales

	1 bed	2 beds	3 beds	4 beds	5 beds	Average
Tenure - Social rented	1.3	2.1	3.0	3.9	3.8	2.8

Note(s): Figures are calculated by dividing the reported number of people by the reported number of households.
Source(s): Census 2011: Tenure by household size by number of bedrooms.

Table A.2 : Average length of stay in hospital in France and Germany (days)

	Average length of stay in hospital
France (2019)	5.4
Germany (2019)	7.5

Source(s): OECD, 2021 (https://data.oecd.org/healthcare/length-of-hospital-stay.htm).

Table A.3: Hospital bed occupancy rates in France and Germany (%)

	Hospital bed occupancy rate
France (2017)	75.6
Germany (2019)	77.2

Source(s): France – Statista (https://www.statista.com/statistics/1116612/oecd-hospital-acute-care-occupancy-rates-select-countries-worldwide/).
Germany – CEIC Data (https://www.ceicdata.com/en/germany/health-care-statistics/patients-average-bed-occupancy-rate).