

Comparison of key concepts on education expenditure between the UOE framework and National Accounts framework

2023 edition



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1

Introduction

Internationally comparable statistics on education expenditure are available through:

- The UNESCO-UIS/OECD/EUROSTAT data collection on education statistics (henceforth the UOE data collection), and
- National accounts statistics compiled according to the ESA 2010.

1.1. Purpose

The objective of this working paper is to make an inventory of the main conceptual differences between the methodology for the collection of data on expenditure on education in the UOE data collection and the national accounts methodology.

The aim of the inventory of the conceptual differences is to:

- Support statisticians to use national accounts data when compiling UOE data returns. This could increase the timeliness of UOE statistics as well as avoid duplication of work on compiling education expenditure statistics;
- Support users wishing to relate the education expenditure data from the UOE and national accounts aggregates.

1.2. Approach and structure

Each chapter of this paper starts with an examination of UOE principles before comparing them to concepts in the ESA 2010. This means that the structure of this paper partly reflects the structure of the UOE framework. For example, the fact that the UOE analytic framework (see Figure 1, Chapter 2) is centred around funding sources and educational institutions is reflected in how the

starting point of Chapter 6 is the expenditure of UOE funding sources and the starting point of Chapter 7 is the expenditure of UOE educational institutions.

Chapter 2 summarises the **main principles** of the UOE framework and the framework for national accounts compiled according to the ESA 2010. Two general concepts used in the two frameworks are compared – the geographical scope and the accounting principles. In summary, while there are differences in the geographical scope and accounting principles used in the two frameworks, these differences do not have a significant effect on the way statistics are compiled in practice. Where differences could be relevant, these are highlighted in Chapters 3-7.

Chapter 3 on the **scope of education** sets out the issues that should be considered when comparing the scope of education (which services count as educational, what counts as expenditure on those services) in the UOE framework with the scope of education in each of the six classifications used in the ESA 2010 which define education. Chapter 3 does not compare the scope of education in the UOE with each of the six classifications, but lists considerations to be made when such a comparison is made and provides comparisons with the COFOG classification as examples.

While Chapter 3 is focussed on how comparisons between the UOE framework for education expenditure and the definitions of education in the relevant classifications used in the ESA should be made, Chapters 4 – 7 provide comparisons between definitions set out in the UOE 2022 manual and the definitions set out in the ESA 2010 itself. These chapters can be used to aid the comparison of statistics on education expenditure compiled according to UOE definitions and statistics on education expenditure

compiled according to the definitions in each of the six classifications used in the ESA which define education.

Chapter 4 compares the UOE definitions of **sources of funds** (government/public sources, international sources, household sources, other private sources) with the definitions of sectors in the ESA (list of ESA sectors is provided in Section 2.2). The chapter details how: most of the sources of funds classified in the UOE as government/public sources of funds would correspond to ESA institutional units within the sector general government; most of the sources of funds classified in the UOE as international sources of funds would correspond to ESA institutional units within the rest of the world sector; most of the sources of funds classified in the UOE as household sources of funds would correspond to ESA institutional units within the sector households; most of the sources of funds classified in the UOE as other private sources of funds would correspond to ESA institutional units within the sectors non-profit institutions serving households, non-financial corporations or financial corporations. The chapter lists where exceptions would apply.

There are no definitions or groupings of ESA units that are based on the concept of **educational institutions**.

Chapter 5 explains what effect this has on the comparability of statistics on education compiled according to the two frameworks, lays out the UOE definitions for public, private government dependent and private independent educational institutions and indicates that: UOE public educational institutions would mainly correspond to ESA institutional units within the sector general government; UOE private government dependent and UOE private independent educational institutions would mainly correspond to ESA institutional units within the sectors non-profit institutions serving households and non-financial corporations.

Chapter 6 lists all the **transactions** defined in the UOE framework **from different sources of funds for education**, and provides purely theoretical analysis of how these would map to ESA transactions. It also provides some more practical comparisons between expenditure on education from different sources of funds in the UOE framework and similar national accounts aggregates. For example, there is a comparison of UOE government expenditure on education and the expenditure of the general government sector for the function education as defined in the COFOG classification.

Chapter 7 is similar to Chapter 6 in that it lists the UOE definitions for the **nature of different expenditures of educational institutions** in the UOE framework, and

provides a purely theoretical analysis of how different expenditures would map to ESA transactions. A practical comparison of the expenditure of educational institutions as defined in the UOE with the output of the industry education (as defined in the NACE classification) is also provided.

1.3. Abbreviations

UNESCO-UIS	UNESCO Institute for Statistics
ESA	The European System of National and Regional Accounts
UOE	UNESCO-UIS / OECD / EUROSTAT data collection
COFOG	Classification of the Functions of Government
COICOP	Classification of individual consumption by purpose
COPNI	Classification of the Purposes of Non-Profit Institutions Serving Households
COPP	Classification of Outlays of Producers by Purpose
NACE	Nomenclature for Economic Activities
CPA	Classification of Products by Activity
ISCED	The International Standard Classification of Education
R&D	Research and Development
SNA	The System of National Accounts
KAU	Kind-of-Activity Unit
NEA	The National Education Account
UNECE	United Nations Economic Commission for Europe
SAET	The Satellite Account for Education and Training
OPE	Other Private Entity / Other Non-educational Private Entity. The UOE manual uses the terms 'other private entity' and 'other non-educational private entity' interchangeably.
IAOFS	International and Other Foreign Sources
NPISH	Non-Profit Institutions Serving Households
GFS	Government Finance Statistics
LCU	Local Currency Units
STIK	Social Transfers in Kind

2

UOE and ESA frameworks – main principles and general comparisons

This chapter sets out the main principles of the two frameworks and compares them in terms of two general concepts within the frameworks: geographical scope and accounting principles.

2.1. The UOE framework

The objective of the UOE data collection on education statistics is to provide internationally comparable data on key aspects of education systems, specifically on the participation and completion of formal education programmes, as well as the cost and type of resources dedicated to those formal education programmes.

The concepts, definitions and classifications used for the UOE data collection are presented in: *“UOE data collection on formal education, Manual on concepts, definitions and classifications”* – This paper refers to the version dated 11 July 2022 (UOE22) ⁽¹⁾. The formal education programmes covered by the data collection are classified according to the levels of education defined in the 2011 *International Standard Classification for Education* (ISCED) ⁽²⁾.

The UOE data collection on education finance and expenditure measures expenditure from all sources, whatever financial mechanisms are in place, on goods and services related to education programmes within the scope of the UOE data collection. The data is used to answer questions such as: How much does a specific level

of education cost? Who provides funding? What are the costs for the various types of schools (public, private)? What are the unit costs per student or per class, for education programmes and for ancillary services?

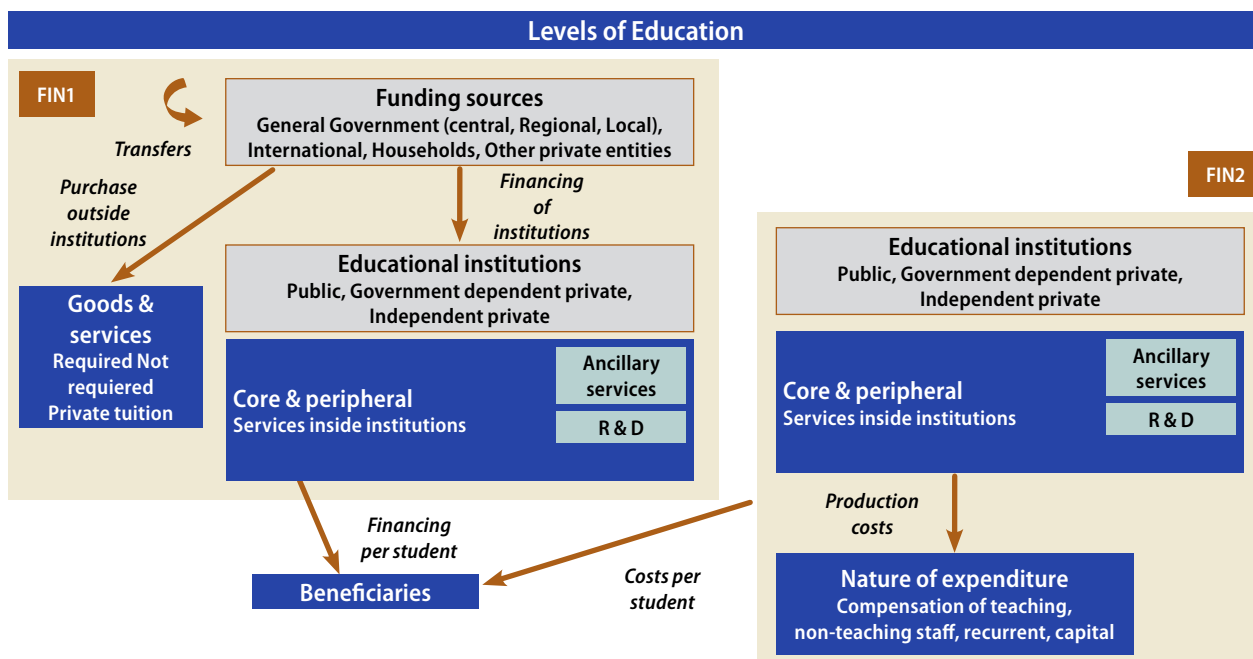
The UOE framework for educational expenditure is built on five dimensions:

1. the types of goods and services provided or purchased (core vs. peripheral educational goods and services);
2. the service providers (instructional educational institutions vs. non-instructional educational institutions; public vs government dependent vs private educational institutions);
3. the source of funds (General government (central, regional, local), international funds, households, other non-educational private entities);
4. the education level based on ISCED, which is used systematically throughout the UOE data collection. It often requires making estimates based on various assumptions to disaggregate expenditures by education level (typically for the costs of administration and supervision offices); and
5. the object/nature of expenditure (staff compensation, other current expenditure other than staff compensation, capital expenditure, expenditure on ancillary services and R&D activities).

These dimensions are illustrated in the diagram below.

⁽¹⁾ The UOE manual is updated on a yearly basis. However, updates are mostly related to adjusting small matters of wording in order to improve clarity and the underlying concepts discussed in this paper are rarely updated. The link to the UOE Manual 2022 is: <https://circabc.europa.eu/ui/group/d14c857a-601d-438a-b878-4b4cebd0e10f/library/a62e384b-0439-41ad-a891-c0e2e74ad679/details>

⁽²⁾ [international-standard-classification-of-education-isc2011-en.pdf](https://unesco.org/en/education/science/culture/education/isc2011/) (unesco.org)

FIGURE 1**UOE analytic framework**

2.2. The European System of Accounts

The System of National Accounts (SNA) is the international statistical system for measuring, monitoring, forecasting and analysing national and regional economies and groups of national economies, like the European Union (EU).

The "National Accounts" are commonly known by key-aggregates, like GDP per capita, GDP volume growth ('economic growth') and government deficit and debt as a percentage of GDP, and their role in public debate and decision-making. However, the national accounts are a multi-purpose statistical system and play many different roles for many different uses.

At EU level, the European Statistical System has developed the European System of Accounts (ESA 2010) which is "an internationally compatible accounting framework for a systematic and detailed description of a total economy (that is, a region, country or group of countries), its components and its relations with other total economies" (§1.01) ⁽³⁾. The ESA

2010 manual and regulation define the National accounts standards and concepts ⁽⁴⁾.

The ESA 2010 system uses two types of units – institutional units and local kind-of-activity units – and two corresponding ways of subdividing the economy, which are quite different and serve separate analytical purposes.

The first purpose of describing income, expenditure and financial flows, and balance sheets, is met by grouping institutional units into sectors on the basis of their principal functions, behaviour and objectives.

The second purpose of describing processes of production and for input-output analysis is met by the system grouping local kind-of-activity units (local KAUs) into industries on the basis of their type of activity. An activity is characterised by an input of products, a production process and an output of products.

The ESA 2010 defines the institutional unit in the following way (§2.12): "an institutional unit is an economic entity characterised by decision-making autonomy in the exercise of its principal function". In order to be said to have autonomy

⁽³⁾ In the remaining sections of the paper, the national accounts methodology is referred to either by the "National Accounts" or ESA 2010. ESA 2010 is consistent with the universal guidelines on national accounting (SNA2008) but are more focused on the data needs and data possibilities of the European Union.

⁽⁴⁾ Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013.

of decision in respect of its principal function, a unit must be (§2.12):

- a. "entitled to own goods or assets in its own right; it will be able to exchange the ownership of goods or assets in transactions with other institutional units;
- b. able to take economic decisions and engage in economic activities for which it is responsible and accountable at law;
- c. able to incur liabilities on its own behalf, to take on other obligations or further commitments and to enter into contracts".

Institutional units are grouped into institutional sectors and subsectors when they are similar i.e. "each sector and subsector groups together the institutional units which have a similar type of economic behaviour" (§2.32). The sectors defined in the ESA are:

- Non-financial corporations (S.11): "The non-financial corporations sector (S.11) consists of institutional units which are independent legal entities and market producers, and whose principal activity is the production of goods and non-financial services." (§2.45)
- Financial corporations (S.12): "The financial corporations sector (S.12) consists of institutional units which are independent legal entities and market producers, and whose principal activity is the production of financial services." (§2.55)
- General government (S.13): "The general government sector (S.13) consists of institutional units which are non-market producers whose output is intended for individual and collective consumption, and are financed by compulsory payments made by units belonging to other sectors, and institutional units principally engaged in the redistribution of national income and wealth." (§2.111)
- Households (S.14): "The households sector (S.14) consists of individuals or groups of individuals as consumers and as entrepreneurs producing market goods and non-financial and financial services (market producers) provided that the production of goods and services is not by separate entities treated as quasi-corporations. It also includes individuals or groups of individuals as producers of goods and non-financial services for exclusively own final use." (§2.118)
- Non-profit institutions serving households (S.15): "The non-profit institutions serving households (NPISHs) sector (S.15) consists of non-profit institutions which are separate legal entities, which serve households and which are private other non-market producers. Their principal resources are voluntary contributions in cash or in kind from households in their capacity as consumers, from payments made by general government and from property income." (§2.129)
- Rest of the world (S.2): "The rest of the world sector (S.2) is a grouping of units without any characteristic functions and

resources; it consists of non-resident units insofar as they are engaged in transactions with resident institutional units, or have other economic links with resident units. Its accounts provide an overall view of the economic relationships linking the national economy with the rest of the world. The institutions of the EU and international organisations are included." (§2.131)

The national accounts central framework consists of two main sets of tables: the institutional sector accounts and the supply and use table in an input-output framework:

- The institutional sector accounts provide, with a breakdown by institutional sector, a systematic description of the different stages of the economic process: production, generation of income, distribution of income, redistribution of income, use of income and financial and non-financial accumulation in terms of transactions, other flows and balancing items. The sector accounts also include balance sheets to describe the stocks of assets, liabilities and net worth at the beginning and at the end of the accounting period.

The institutional sector accounts do not show the relationship at any stage of the economic process, flow or stock with education. However, supplementary tables compiled using four different classifications show expenditure of different institutional sectors by the function of expenditure. In each of the four classifications, one of the functions of expenditure is education. Expenditure of the institutional sector general government is classified by function of expenditure using the COFOG classification (Classification of the Functions of Government); Individual consumption expenditure of the institutional sectors general government, households and private non-profit institutions serving households is classified by function of expenditure using COICOP (Classification of individual consumption by purpose); expenditure of the institutional sector non-profit institutions serving households is classified by function of expenditure using COPNI (Classification of the Purposes of Non-Profit Institutions Serving Households); expenditure of producers is classified by function of expenditure using the COPP classification (Classification of Outlays of Producers by Purpose).

- The input-output framework through the supply and use tables sets out in more details the production process (cost structure, income generated and employment) and the flows of goods and services (output, imports, exports, final consumption, intermediate consumption and capital formation by product group). Two accounting identities are reflected in this framework: the sum of incomes

generated in an industry is equal to the value added produced by that industry; for any product or grouping of products, supply is equal to use. The input-output framework provides an overview on the supply and use of goods and services in current and previous year's prices. The input-output framework shows the role of education in the national economy in two different ways:

- education as a service, classified by the Classification of Products by Activity;
- education as an industry whose characteristic output is education services classified by NACE, the Nomenclature for Economic Activities.

Satellite accounts elaborate or modify the tables and accounts in the central framework to serve specific data needs (see Chapter 22 on satellite accounts in ESA 2010): *"Satellite accounts can meet specific data needs by providing more detail, by rearranging concepts from the central framework or by providing supplementary information, such as non-monetary flows and stocks. They may deviate from the central concepts (...) (\$22.04). "Satellite accounts can range from simple tables to an extended set of accounts. Satellite accounts can be compiled and published on an annual or quarterly basis. For some satellite accounts, production at more extended intervals such as once every five years is appropriate."* (\$22.05).

Satellite accounts are not included in the central framework of the national accounts, but where satellite education accounts exist they can provide detailed information on the specific features of the education domain, including dimensions such as the education levels, the categories of schools, as well as a list of products that are specific to education domain. They can also make the distinction between financing units and producing units, allowing for an analysis of the financing patterns as well as the production patterns of education delivery. They can identify training activities within entities whose main activity is not education.

UNESCO (The International Institute for Educational Planning IIEP and the Unesco Institute for Statistics UIS) have developed a methodology of satellite education accounts ⁽⁵⁾, also called the National Education Account (NEA). The NEA approach is presented in the report *Methodology of national education accounts* (UNESCO-IIEP, UIS, 2016). The French Education Account was one of the earliest experiences in a national account on education and was a reference point for the development of the NEA. The UNECE Satellite Account for Education and Training

Compilation Guide (SAET 2020) was also developed to help countries construct internationally comparable satellite accounts on education and training.

2.3. Geographical scope – comparison

2.3.1. UOE – geographical scope

Section 1.7 of **the UOE manual** specifies the geographical coverage of the UOE data collection: *"The UOE data collection covers all of a reporting country's domestic educational activity (i.e. within its own territory) regardless of ownership or sponsorship of the institutions concerned and the education delivery mechanism"*.

The above definition has implications for the following special cases:

- **Distance learning/e-learning involving two countries:** *"Students from country A who are enrolled with institutions in country B but who remain residing in country A should be reported in the statistics of country B and not in the statistics of country A"*.
- **Commuting students:** *"Commuting students are students who cross a national border on a daily basis in order to follow an education programme in another country. Commuting students, as for distance learning students, who are enrolled with institutions in country B but reside in country A should be reported in the statistics of country B"*.
- **Internationally mobile students in short exchange programmes** *"(of at least 3 months but less than one academic year) who remain enrolled in their home institution (country A) and where credits for successful completion of the study abroad (country B) are awarded by the home institution. Students in such exchange programmes do not obtain their qualifications from the host institution abroad but at their home institution where they originally enrolled and should be reported by the country in which they are enrolled"*.
- **Foreign campus:** *"An institution in country A may have a campus or out-post in country B (i.e. a foreign campus). Country B should report the enrolments and finance for the foreign campus in the same manner as it reports activities of its domestic educational institutions"*.
- **European schools:** *"European schools are schools established to provide education to children of personnel of the European Institutions and leading to the European Baccalaureate. Other children may be admitted subject to*

⁽⁵⁾ <http://uis.unesco.org/en/news/national-education-accounts>

the availability of places and must pay fees. It is a unique system that implements a form of cooperation between the Member States and between them and the European Commission. Countries in which there are European schools should report the enrolments, entrants, graduates, personnel and finance data in the same manner as for foreign

campuses i.e. like activities of its domestic educational institutions “.

The following table sums up the above-mentioned situations: Country A is the country of usual residence of the pupil/student (i.e. the place where pupil/student has their daily period of rest).

TABLE 1

UOE Geographical scope – special cases

	<i>Educational activity is provided in</i>	<i>Data should be reported by:</i>
An institution in Country B has a Foreign campus in country A	Country A	Country A
Distance learning/e-learning involving two countries	Country B	Country B
Commuting students	Country B	Country B
Internationally mobile students in short exchange programmes (credit mobile students)	Country A (enrolment in a degree programme) Country B (short-term exchange)	Country A
European Schools	Country A	Country A

In line with the principles of geographical coverage in the UOE framework as described above, the situation regarding ‘tertiary degree mobile’ students should also be noted: In the UOE manual, tertiary degree mobile students are students who have obtained their upper secondary qualification in one country (Country A – in many cases this is the country in which they are usually resident and/or where they hold citizenship) but who have then physically crossed an international border between two countries in order to participate in a semester/term of a programme in another country (Country B), and have the intention of graduating from it in the ‘country of destination’ which is hosting the education programme/is the country of enrolment of the student (Country B). Such students are reported exclusively by the ‘country of destination’, which is the country of enrolment, of the student (Country B).

2.3.2. ESA – geographical scope

The ESA 2010 defines the limits of the national economy (§2.04 to §2.11) and uses the residence criterion: “The units which constitute the economy of a country and whose flows and stocks are recorded in the ESA 2010 are those which are **resident**. An institutional unit is resident in a country when it has its centre of predominant economic interest in the

economic territory of that country. Such units are known as **resident units, irrespective of nationality**, legal form or presence on the economic territory at the time they carry out a transaction”. (§2.04).

The ESA 2010 also states that “households, except in their capacity as owners of land and buildings, are resident units of the economic territory where they have a centre of predominant economic interest. They are resident irrespective of periods spent abroad of less than one year. They shall include, in particular, the following:

- border workers, defined as people who cross the frontier daily to work in a neighbouring country;
- seasonal workers, defined as people who leave the country for several months according to season, but less than a year, to work in another country;
- tourists, patients, students, visiting officials, businessmen, salesmen, artists and crew members who travel abroad;
- locally recruited staff working in the extraterritorial enclaves of foreign governments;
- the staff of the institutions of the European Union and of civilian or military international organisations which have their headquarters in extraterritorial enclaves;

- f. *the official, civilian or military representatives of the government of the country (including their households) established in territorial enclaves.*

Students are always treated as residents, irrespective of the length of their studies abroad” (§2.10).

Where an institutional unit is not resident, it is considered as belonging to the rest of the world (§2.32, Table 2.1 – Sectors and subsectors and Diagram 2.1 – Allocation of units to sectors).

The ‘rest of the world’ sector in the ESA includes non-resident units that are Member States of the European Union and Institutions and bodies of the European Union and non-member countries and international organisations non-resident of EU. It means that, in the ESA, international organisations (e.g. the European institutions) are considered as ‘rest of the world’ even if they are physically based in a country while branches or subsidiaries of a foreign corporation are usually considered resident

2.3.3. Comparison – geographical scope in the UOE and ESA frameworks

This section examines whether the sources of funds and educational institutions which are considered as part of the national education system of a reporting country according to UOE definitions (see Section 2.3.1) are resident in the reporting country or not, and therefore whether they would correspond to institutional unit/s which are considered as part of a reporting country’s national economy in the ESA or not (see section 2.3.2). The ESA 2010 follows what is termed as the ‘residence criterion’, where *“The units which constitute the economy of a country and whose flows and stocks are recorded in the ESA 2010 are those which are resident”* (§2.04).

2.3.3.1. Geographical scope – educational institutions

All educational institutions which are considered as part of the national education system of a reporting country in the UOE framework correspond to institutional unit/s which are considered as part of a reporting country’s national economy in the ESA. In both frameworks, all service providers which are within a reporting country’s own territory are considered as part of the reporting country’s education system/national economy. While the UOE does not explicitly state that the residence criterion is followed for educational institutions, Section 1.7 of the **UOE manual** does state that *“The UOE data collection covers all of a*

reporting country’s domestic educational activity (i.e. within its own territory) regardless of ownership or sponsorship of the institutions concerned and the education delivery mechanism”. And the special cases outlined in section 1.7 of the manual involving educational institutions follow the residence criterion as defined in the ESA:

- Foreign campuses fall within the geographical scope of the UOE since they are resident of the reporting country;
- European schools fall within the geographical scope of the UOE since they are resident of the reporting country;
- Distance learning/e-learning providers: only resident providers of distance learning and e-learning fall in the scope of the UOE while non-resident distance learning/e-learning providers do not fall within the scope of the reporting country.

2.3.3.2. Geographical scope – sources of funds

What are defined as government sources of funds within a national education system in the UOE framework would be resident in the reporting country and therefore would correspond to institutional unit/s which are considered as part of a reporting country’s national economy in the ESA.

What are defined as international and foreign sources in the UOE framework must be situated outside the territory of the reporting country. They would therefore all correspond to institutional unit/s which are considered as outside of a reporting country’s national economy in the ESA. See Chapter 4 for further detail (Section 4.4).

The UOE framework does not specifically define that other private sources must be based within the national territory, but it is likely that data compilers interpret other private sources in the UOE framework to mean resident sources and it is therefore likely that other private sources of funds correspond to institutional unit/s which are considered as part of a reporting country’s national economy in the ESA.

What are defined as household sources of funds in the UOE framework may be either resident or non-resident in the reporting country. They could therefore correspond both to resident institutional units according to ESA definitions as well as institutional units within the rest of the world sector. This is not considered to have a significant effect on the comparability of statistics involving what the UOE framework defines as household sources of funds and the statistics involving what the ESA defines as units within the household sector. This is because a lack of data means that UOE data providers are mostly unable to exclude statistics related to students who are resident in

the reporting country but are studying abroad. They are in most cases also unable to include statistics on students who are studying in the reporting country but who are still registered as residents abroad. See Section 4.6 for further detail.

2.4. Accounting principles – comparison

2.4.1. Cash accounting

In cash accounting, expenditure is recorded when cash is paid and revenue is recorded when cash is received. This means that, under cash accounting, the transaction is recorded in the period where it results in a cash transfer, e.g. purchases made in the reference year (year t) but paid for in the following reference year (years t+1) are reported in data for reference year t+1. The accounting system may use a nominal 'month 13' to capture impending cash payments made at the very beginning of the following financial year (i.e. it allocates bills generated in year t but paid for, in cash, at the start of year t+1 to the accounts for year t) ⁽⁶⁾.

2.4.2. Accrual accounting

Accrual accounting records flows at the time economic value is created, transformed, exchanged, transferred or extinguished. It is different from cash recording and, in principle, from due-for-payment recording, defined as the latest time payments can be made without additional charges or penalties. Any period of time between the moment a payment accrues and the moment it is actually made is accounted for by recording a receivable or a payable in the financial accounts (§20.171, ESA 2010). Thus, output is recorded when produced, not when paid for by a purchaser, and the sale of an asset is recorded when the asset changes hands, not when the corresponding payment is made. Interest is recorded in the accounting period when it accrues, regardless of whether or not it is actually paid in that period. Recording on an accrual basis applies to all flows, monetary as well as non-monetary and intra-unit as well as between units.

2.4.3. UOE – accounting principles

The UOE follows the cash principle apart from the calculation of expenditure for the retirement costs of

educational personnel in completely unfunded retirement systems and in partially funded systems.

Section 1.8 of the UOE manual specifies the accounting principles of the UOE framework: *"In keeping with the system used by many countries to record government expenditures and revenues, the UOE educational expenditure data are compiled on a cash accounting rather than an accrual accounting basis. That is to say that expenditure (both capital and current) is recorded in the year in which the payments occurred. This means in particular that:*

- *Capital acquisitions are counted fully in the year in which the expenditure occurs;*
- *Depreciation of capital assets is not recorded as expenditure, though repairs and maintenance expenditure is recorded in the year it occurs*
- *Expenditure on student loans is recorded as the gross loan outlays in the year in which the loans are made, without netting-off repayments from existing borrowers.*

One noted exception to the cash accounting rules is the treatment of retirement costs of educational personnel (see section 3.7.1.1.3.8) in situations where there are no (or only partial) on-going employer contributions towards the future retirement benefits of the personnel. In these cases countries are asked to impute these expenditures in order to arrive at a more internationally comparable cost of employing the personnel".

2.4.4. ESA – accounting principles

Recording flows on an accrual basis is a fundamental principle of the national accounts methodology. The ESA 2010 instructs that (§1.101): *"Flows shall be recorded on an accrual basis; that is, when economic value is created, transformed or extinguished, or when claims and obligations arise, are transformed or are cancelled".* Thus, *"Output is recorded when produced and not when paid for by a purchaser. The sale of an asset is recorded when the asset changes hands, not when the corresponding payment is made. Interest is recorded in the accounting period when it accrues, regardless of whether or not it is paid in that period. Recording on an accrual basis applies to all flows, monetary as well as non-monetary and intra-unit as well as flows between units".* (§1.102)

However, the ESA 2010 acknowledges that the accrual basis principle might not be used for certain flows and especially those concerning the general government as noted in §1.103: *"It may be necessary to relax this approach for taxes and other flows concerning general government, which*

⁽⁶⁾ This latter situation would be considered as 'modified cash system'.

are often recorded on a cash basis in government accounts. It may be difficult to carry out an exact transformation of such flows from cash basis to accrual basis, and so an approximate method may be used”.

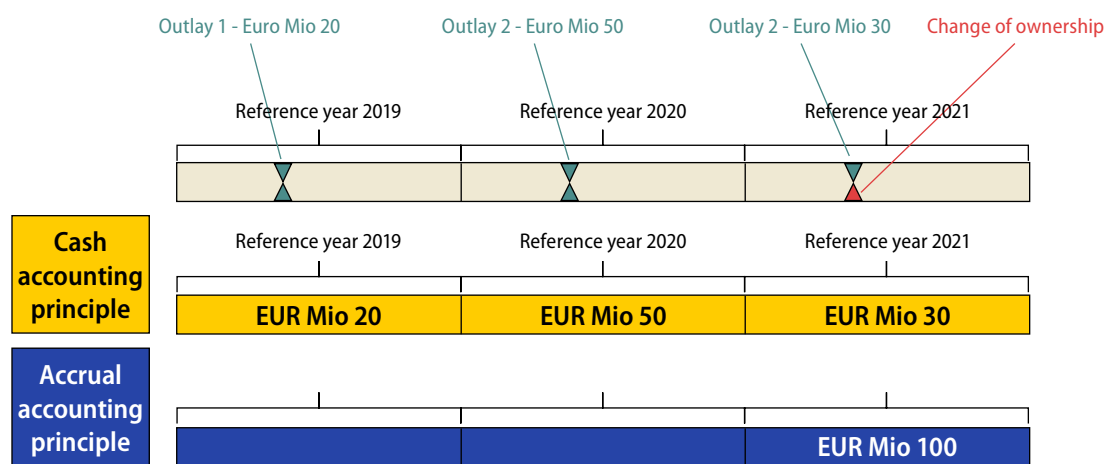
2.4.5. Comparison – accounting principles in the UOE and ESA frameworks

The differences in accounting principles in the UOE and national accounts are considered to be not very relevant or substantial in most cases because for most types of expenditure, like salaries and intermediate expenditure on goods and services (rental, electricity bill), the difference in timing between accrual and cash basis will not matter much for annual data (even though differences on a monthly basis may be substantial). The UOE data collection is an annual collection.

For some specific transactions such as gross fixed capital formation, like purchase or construction of a school building, the impact can be expected to be more significant. On an accrual basis, the time of recording should officially be linked to the transfer of ownership. On a cash basis, there may be substantial advance payments before the transfer of ownership or there may be payments with some months of delay after the transfer of ownership. The following graph provides an illustration with the example of a school building that costs 100 million Euros and which is constructed/paid for over a three-year period (outlays 1 to 3). The example in the diagram below (Figure 2) illustrates how, for one given reference year, the amount of capital expenditure of one school will differ depending on the accounting principle that is implemented, but there is a correspondence over a three year period. As there are many schools within a country, it is possible that, at the aggregate level, there is no big difference in the total capital expenditure of all schools compiled on an accrual basis and the total capital expenditure of all schools compiled on a cash basis.

FIGURE 2

Cash vs. Accrual accounting for capital expenditure



It should be noted that there may be more of an alignment in the accounting principles used in practice because the application of accounting principles in practice depends on the sources available. For example, while most UOE data providers adhere to the cash accounting principle, there are some that compile expenditure data on an accrual basis – individual country quality reports can be examined to check which accounting principle is used. The differences in the accounting principles of the two frameworks are relevant when both cash and accrual data exist for certain

transactions, so UOE compilers can easily use cash data and national accounts compilers can easily use accrual data. The difference is also relevant when the source data only exists on a cash accounting basis, but specific corrections of the source data are made by national accountants to translate the cash data into accrual data, or when the source data only exists on an accrual accounting basis but specific corrections of the source data are made by UOE compilers to translate accrual data into cash data.

3

Scope of education in the UOE and ESA frameworks – comparison

According to International Standard Classification for Education (ISCED 2011), all education can be classified into one of the four categories:

- Formal education;
- Non-formal education;
- Informal learning;
- Incidental or random learning.

The ISCED definitions for each of these categories of education are in Annex 1. This chapter compares the UOE and the ESA frameworks to look at which forms of education are covered in the definition for education in each framework.

Additionally, there are many different types of expenditure which could be considered as connected to these educational programmes. This chapter compares the UOE and the ESA frameworks to look at the level of correspondence in what is considered as an expenditure connected to the educational programmes covered and what is not.

3.1. UOE – scope of education

Section 3.1.1 explains the education programmes that are covered by the UOE data collection. Section 3.1.2 explains which expenditures are considered as expenditures on those education programmes. Section 3.1.3 sets out how the UOE framework defines expenditure on education in cases where the service providers delivering the education programme also deliver other services. For example, teaching hospitals would deliver healthcare services for patients as well as educational programmes for medical students; early years providers might deliver educational

programmes for young children as well as separate childcare services for young children.

3.1.1. UOE – education programmes covered

The UOE data collection only covers programmes that are defined as formal according to the ISCED 2011 classification (see Annex 1 for full ISCED 2011 definitions of formal education)

The UOE manual summarises the ISCED definition of formal education as follows: *“Formal education is institutionalised, intentional and planned and provided by public organizations and recognised private bodies. It consists primarily of initial education designed for children and young people before their first entry to the labour market. It also includes other types of education such as vocational, special needs and adult education provided they are recognised as part of the formal education system by the relevant national education authorities.”*

Additionally, in order to be covered by the UOE data collection, programmes which can be classified as formal education according to the ISCED classification must also represent at least the equivalent of one semester (or one-half of a school/academic year) of full-time study. This is so that there is a comparable interpretation of the term ‘sustained period’ from the ISCED definition of an education programme. In ISCED, an education programme is defined as *“a coherent set or sequence of educational activities or communication designed and organized to achieve pre-determined learning objectives or accomplish a specific set of educational tasks over a sustained period”*.

The domestic criterion adhered to in the UOE framework means that all qualifying formal education programmes which are provided within the reporting country's own territory are covered by the UOE data collection, regardless of ownership or sponsorship of the institutions concerned and the education delivery mechanism. This means that:

- if an institution in country A has a campus or out-post in country B (i.e. a foreign campus), then country B should report the enrolments and finance for the foreign campus in the same manner as it reports activities of its domestic educational institutions.
- Countries in which there are European schools should report the enrolments, entrants, graduates, personnel and finance data like activities of its domestic educational institutions.

Formal education programmes covered by the UOE data collection may:

- take place entirely in educational institutions or be delivered as combined school- and work-based programmes provided the school-based component represents at least 10% of the study over the whole programme. Entirely work-based training is excluded.
- Be full-time or part-time.
- Be delivered in public (or state) or in private schools, colleges, polytechnics or universities.

In the UOE data collection, education programmes must be classified according to the levels of education defined in the 2011 revision of International Standard Classification of Education (ISCED 2011).

3.1.2. UOE – expenditure on education programmes

There are various expenditures which can be considered as connected to educational programmes.

In the UOE framework, expenditure on education covers:

- Goods and Services of educational institutions (definition in Section 3.1.2.1 of this paper);
- Goods and Services purchased outside educational institutions (definition of goods and services purchased outside educational institutions is in Section 3.1.2.2 of this paper);
- Public subsidies to students for student living costs ⁽⁷⁾

And excludes:

- R&D outside of educational institutions – as this is clearly outside the scope of education;
- Private, non-subsidised expenditure on student living costs outside of educational institutions.
- Expenditure on educational activities outside the scope of the UOE data collection: Some educational institutions offer, besides the educational programmes that fall under the scope of the UOE data collection, educational activities for which neither participants nor graduates should be considered. Examples would be evening courses provided by schools or universities for adults that should be classified as leisure courses and do not fall under the scope of the UOE data collection.

3.1.2.1. UOE – Goods and services of educational institutions

In the UOE framework goods and services of educational institutions are defined as educational core goods and services plus educational peripheral goods and services.

Educational core goods and services are defined in section 3.7.1.1.1.1. of the UOE manual as:

- *"Instruction (i.e., teaching costs), including in teaching hospitals as it relates to the teaching of medical students;*
- *Educational goods (books, materials, etc.) provided by institutions;*
- *Training of apprentices and other participants in combined school and work-based educational programmes at the workplace.*
- *Administration;*
- *Capital expenditure and rent;*
- *Special educational needs;*
- *Guidance."*

Educational peripheral goods and services are defined in section 3.7.1.1.1.2 of the UOE manual as:

- *"R&D Educational research and curriculum development;*
- *Research and development performed at higher education institutions;*
- *Non-instructional goods and services (Ancillary Services)."*

The two main components of ancillary services are defined as:

- student welfare services such as student transportation, school meals, student housing, boarding, student health services. At ISCED levels 0-3 – student welfare services include, such things as meals, school health services, and transportation to and

⁽⁷⁾ As part of a review of the UOE manual, removing 'public subsidies to students for student living costs' from the coverage of expenditure on education is under consideration.

- from school. At the tertiary level, they include halls of residence (dormitories), dining halls, and health care;
- services for the general public provided by educational institutions. These include such things as museums, radio and television broadcasting, sports, and recreational or cultural programmes. ⁽⁸⁾

In another section of the UOE manual the following additional services are also listed as examples of ancillary services: vocational and psychological counselling, placement, transport administration (section 2.4.2, UOE manual), general administration (section 1.8, UOE manual).

Educational goods and services provided by educational institutions excludes:

- “Activities of public authorities (e.g. Ministries etc.) that is not directly related to education (e.g. culture, sports, youth activities etc.) **unless** it is provided as ancillary service;
- Teaching hospitals’ expenditure as it relates to patient care and other non-education related general expenditure;
- Debt servicing (i.e. payments of interest or repayments of the principal);
- Depreciation of capital assets and capital charges;
- Good and services Tax (GST);
- Research and Development outside of educational institutions.”

3.1.2.2. UOE – Goods and service purchased outside educational institutions

In the UOE framework, goods and services purchased outside educational institutions are defined as including:

- Educational goods and services purchased outside institutions, in the free market
- Student living costs if they are subsidised through financial aid to students by public or private entities.

And excluding:

- Student foregone earnings;
- Expenditure on student living costs outside educational institutions which are not subsidised through financial aid to students by public or other private entities.

Examples of educational goods and services purchased outside educational institutions are:

- Expenditure on educational goods which are requested for participation in the programmes and which are therefore imposed on the student either directly or indirectly by the educational institutions. Examples are

school uniforms, books requested for instruction, athletic equipment, and materials for arts lessons.

- Expenditure on educational goods which are not required by institutions, but which students and households choose to buy in support of their study in the programmes in scope of the data collection. Examples are additional books or computer, learning software to be used at home.
- Fees for private out of school tuition related to the educational programmes being pursued. This will be the main type of educational service purchased outside institutions. Outside school tuition is restricted to tuition intended to support the participation in programmes that fall under the scope of the data collection.
- Purchases from commercial enterprises operated or sponsored by educational institutions (e.g. university bookstores) are regarded as expenditure outside educational institutions.

3.1.3. UOE – separating educational and non-educational services

If providers of the educational programme covered by the UOE data collection also provide other services, then the UOE framework instructs that only expenditure related to the educational programme should be included as educational expenditure. For example:

“Expenditure by or on teaching hospitals (sometimes referred to as academic hospitals or university hospitals) is excluded from educational expenditure, particularly all costs of patient care and other general expenses of academic hospitals, even if such expenses are paid by the education authorities. However, expenditure by or on teaching hospital that it is directly and specifically related to the training of medical students, expenditure on R&D at teaching hospitals are included to the extent that it is included in the OECD/DSTI data collection on R&D” (section 3.7.1.1.3.2, UOE manual).

The same principles would apply to educational institutions such as police academies which provide educational programmes alongside other services.

The UOE framework acknowledges that, in practice, some expenditure on non-educational goods and services will be included in the statistics for expenditure on education because: *‘it is often difficult to neatly separate out the educational and non-educational goods and services offered by institutions’ (section 1.8, UOE manual).*

⁽⁸⁾ The exclusion of these services is under consideration as part of a review of the UOE manual.

There is one exception to this rule in the UOE framework when considering expenditure on programmes which are considered to provide both education at ISCED level 0 and childcare services. The UOE manual states that if a programme at ISCED level 0 meets the requirements set out in the UOE manual and enrolled children are expected to experience intentional educational activities for the required intensity/duration, *“the programme may in its entirety be deemed an educational programme for reporting purposes, even where the programme includes additional activities that are somewhat less educationally focussed”*. The manual further clarifies that, at ISCED level 0, *“it is acceptable to include in UOE reporting integrated programmes where the non-educational portion is greater than the educational portion, so long as the educational portion meets the criteria in this manual”*. Many high quality services for young children are considered as consistently providing both education and care at the same time in a way that they are viewed as inseparable. Such services treat all caring activities as opportunities for children’s learning and development because they involve intensive communication between children and staff, and it is suitable to consider them as educational in their entirety. However, some services provide educational activities and separate care-only activities within one early childhood programme. The result of the UOE rule for ISCED level 0 programmes means that such programmes will be considered as educational in their entirety even though the programmes include some care-only elements. Programmes providing childcare only which are distinctly separate from early childhood education programmes (i.e. separate enrolment is required) are not considered as an educational programmes according to the UOE framework and are therefore not covered by the UOE data collection.

3.2. ESA – scope of education

The ESA 2010 does not provide a definition of education, but education is defined in six different classifications used in the ESA 2010.

Education is defined in the four different functional classifications used in the ESA 2010: COFOG (Classification of the Functions of Government), COICOP (Classification of individual consumption by purpose), COPNI (Classification of the Purposes of Non-Profit Institutions Serving Households), COPPP (Classification of the Outlays of Producers According to Purpose).

Additionally, education is defined in NACE Rev.2 (Statistical classification of economic activities in the European Community) which is used in the ESA 2010 to classify economic activities, and in CPA2008 (Statistical classification

of products by activity), which is used in the ESA 2010 to classify products by economic activity.

3.3. Comparison – scope of education in the UOE and ESA frameworks

The definition of education in each of the six classifications must be carefully considered in order to assess the level of correspondence between the definition of education in the UOE framework and in each classification. The level of correspondence should be assessed in terms of the type of education covered, what is considered as expenditure on those forms of education, and in terms of how ESA transactions are treated which could fall into two categories (one educational and one non-educational) in the classification in question. Questions which should be considered when making this assessment are listed in Sections 3.3.1 to 3.3.3 of this chapter. For most questions, examples of how the assessment should be made is provided through a comparison of the UOE definition of government expenditure on education and the definition of education expenditure of the sector general government as defined in the COFOG classification. A few comparisons with other classifications are also provided as examples but the comparisons in this chapter are not exhaustive.

3.3.1. Comparison – type of education covered

3.3.1.1. ISCED 2011 or ISCED 1997

Does the classification use the ISCED classification to define the types of education that are covered, and the different levels of education programmes? If so, does the classification refer to ISCED 1997 or ISCED 2011? The UOE references to ISCED definitions will correspond to the references to ISCED definitions in the classification in question only if the classification in question refers to ISCED 2011. If the classification refers to the older ISCED 1997 classification, then some references to ISCED terms will not correspond. Section 10 of the 2011 ISCED Classification describes the correspondence between ISCED 1997 and ISCED 2011 in detail. The main differences are that:

ISCED level 0 in the UOE framework includes the subcategories ISCED 01 (early childhood educational development programmes generally designed for children younger than 3 years), and ISCED 02 (pre-primary

education programmes), while ISCED level 0 in the COFOG classification includes only the subcategory ISCED 02, pre-primary education programmes. This means that the UOE subcategory ISCED 02 corresponds to the COFOG category ISCED level 0. The UOE category ISCED level 0 corresponds to the COFOG category ISCED level 0 and some expenditures assigned to the COFOG group 10.4 Family and children.

ISCED 2011 has four levels of tertiary education compared to two levels in ISCED 1997. Levels 5, 6 and 7 in ISCED 2011 together correspond to level 5 in ISCED 1997. Level 8 in ISCED 2011 corresponds to level 6 in ISCED 1997.

Updated clarifications in ISCED 2011 will also mean that classification of education programmes by level may be implemented differently if this latest classification is used instead of the older 1997 version.

3.3.1.2. Formal or non-formal

Does the classification provide explicit instruction on the types of education that should be included, and at which levels, where the different types are: formal, non-formal, a combination of the two, other (informal, incidental and random learning)? If no explicit instruction is provided, could there be differing interpretations across (and, where relevant, within) countries around where to classify different types of education? Where there are explicit instructions, is the wording of the classification unclear in a way that would still allow for different interpretations across countries around where to classify different types of education? For example, the classification could say that only formal programmes are included at a particular level and then include programmes that could be considered as non-formal such as out of school education in the description of that level.

The level of correspondence with the UOE can be well assessed if the classification provides explicit instruction around where to include different types of education (formal, non-formal), and the descriptions for each category support this categorisation.

3.3.1.3. Breakdown of levels of education

If the classification names levels of education using the ISCED classification, which ISCED levels are included under each category? It may not be obvious from the name of the category alone which ISCED levels are included. For example, the terms 'higher education' and 'tertiary education' might sound similar but the term 'higher education' is likely refer to the aggregate of ISCED levels 4-8

while the term 'tertiary education' is likely to refer to the aggregate of ISCED levels 5-8.

3.3.1.4. Treatment of special needs, adult and vocational education, as well as combined school and work-based programmes

Does the classification specify how formal education should be treated which is: special needs education, adult education, vocational education, education delivered within combined school and work-based programmes. The UOE framework specifies that all of these types of formal education are covered, and education expenditure statistics are disaggregated by expenditure on vocational programmes and expenditure on general programmes.

3.3.2. Comparison – expenditure on types of education covered

3.3.2.1. Transactions

Chapter 6 provides a theoretical analysis of how expenditure from different sources of funds on education as defined in the UOE could be mapped to ESA transactions. The theoretical mappings in Chapter 6 may be used to answer questions such as: Does the classification take into account all ESA transactions which are relevant to the UOE definitions for expenditure on education? Or are some relevant transactions excluded? Are some ESA transactions taken into account in the classification which are not part of what the UOE defines as education expenditure? The practical analysis in Chapter 6 provides examples of how to use the theoretical mappings to answer such questions. The following sections use the theoretical mappings in Chapter 6 to compare UOE education expenditure transactions with the expenditure items classified by various classifications used in the ESA:

- 6.2.2 UOE government direct expenditure on education and national accounts aggregates;
- 6.2.7 UOE total government expenditure on education compared to expenditure of the ESA sector general government for the COFOG function education;
- 6.3.2 UOE household expenditure on education with final consumption expenditure of the ESA sector households for the COICOP function education;
- 7.7 UOE total expenditure of educational institutions compared to output of the industry education as classified in NACE.

3.3.2.2. R&D expenditure

Is expenditure included which is relevant to what the UOE defines as research and development (R&D) expenditure? As presented in Section 3.1.2.1, the UOE framework defines education expenditure as including R&D expenditure. The UOE manual states that education expenditure includes:

- *Educational research and curriculum development;*
- *Research and development performed at higher education institutions.*

To clarify further, this means that all expenditure on research and development performed at universities and other institutions of tertiary education (R&D expenditure would normally only be included in the amounts for tertiary education expenditure) would be counted as education expenditure. This is regardless of whether the research and development performed in these educational institutions is connected to the educational programmes that those institutions deliver. All research institutes and experimental stations operating under the direct control of, or administered by, or associated with, higher education institutions are included. The UOE definition of educational institutions is in Chapter 5 of this paper.

The UOE framework instructs that expenditure related to research and development performed outside educational institutions should not be included in the measure for expenditure on education. Expenditure on independent, organisationally separate, government research institutions is also excluded in cases where the connection between universities and research institutions is purely administrative.

The ESA does not include a definition for category of units which would correspond to what the UOE defines as educational institutions (detail in Chapter 5 of this paper), and none of the classifications used by the ESA make the differentiation between R&D performed within educational institutions as defined in the UOE and R&D performed outside UOE educational institutions. In all classifications, R&D refers to all research and development regardless of whether it is performed within what the UOE defines as an educational institution or outside of what the UOE defines as an educational institution. The result is that total R&D expenditure in each classification will be higher than what is reported in the UOE data collection because it includes R&D performed outside what the UOE defines as educational institutions in addition to R&D performed within what the UOE defines as educational institutions.

In some classifications, it may be the case that it is possible to disaggregate R&D based on the domain of the research

and development being performed. In COFOG for example, the group 09 Education includes the category 09.7 R&D which is applied research and experimental development related to education, while the group 10 social protection includes the category 10.8 R&D social protection which is applied research and experimental development related to social protection. The same kinds of categories are in all COFOG groups, and there is a category 01.4 Basic Research for experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view. Where such a disaggregation is available, what the classification defines as R&D in the domain of education would correspond to what the UOE defines as educational research and curriculum development.

3.3.2.3. Expenditure on non-instructional educational goods and services/ ancillary services

Is expenditure included which is relevant to what the UOE defines as: non-instructional educational goods and services? As can be seen in Section 3.1.2 of this chapter, the UOE framework disaggregates such goods and services into 'ancillary services' when they are provided by what the UOE defines as educational institutions, and non-instructional educational goods and services purchased outside educational institutions when they are not. The UOE definitions of educational institutions are in Chapter 5 of this paper.

The UOE definition of ancillary services does not correspond to the ESA definition of ancillary activities (see subsection 3.3.2.3.1) and classifications must be checked carefully to see exactly how the classification refers to goods and services that correspond to what the UOE defines as ancillary services as well as how the classification makes use of the ESA definition of ancillary activities.

COFOG and other functional classifications are concerned with institutional units as defined in the ESA rather than the local kind-of-activity units which are the units that can be engaged in principal, secondary and ancillary activities according to ESA definitions. There is therefore no reference to ancillary activities as defined in the ESA in COFOG. The goods and services which correspond to what the UOE defines as ancillary services are referred to as 'subsidiary services to education' in COFOG. The examples listed for ancillary services in the UOE framework and for subsidiary services to education in COFOG correspond: UOE framework lists the examples of transportation,

school meals/dining halls, housing/boarding/halls of residence and student health services/health care; COFOG lists the examples of subsidiary services to education as transportation, food, lodging, medical and dental care. The UOE framework provides the example of transport administration, and likewise COFOG specifies that the administration, inspection, operation and support of subsidiary services to education should also be classified as subsidiary services to education. There is a difference in that the UOE framework currently includes services for the general public provided by educational institutions in the definition of ancillary services. These include such things as museums, radio and television broadcasting, sports, and recreational or cultural programmes when provided by educational institutions. Data compilers using COFOG might classify such services as either in the category 09.5 education not definable by level or in the category 09.6 subsidiary services to education. This is because such education is mentioned in the main description of the division 09. Education but then it is not specified where such education should be included. The main description of the division 09. Education states that *'the provision of education by radio and television broadcasting'* is included in this division.

Such education is not definable by level according to ISCED and so could be classified as 09.5 education not definable by level, but data compilers familiar with the UOE framework may classify such services into 09.6 subsidiary services to education. In practice UOE data compilers do not often include expenditure related to services for the general public in UOE data returns as it is widely considered that such expenditures should not fall within the scope of education, or it does not exist.

Many of what the UOE defines as educational non-instructional goods and services purchased outside educational institutions will likely not be included in what the classification defines as 'education'. Where institutional units are classified by purpose in the functional accounts, it is likely that the institutional unit/s responsible for producing the non-instructional educational goods and services will be classified into a group that is outside what is classified as education. This is because goods and services such as computers or arts materials may be purchased to support education but may also be purchased to support other functions.

In COICOP for example, expenditures which correspond to what the UOE defines as education are included in: Division 3, Clothing and footwear; Division 7, Transport; Division 9, Recreation, sport and culture; and Division 11, Restaurants and accommodation services; as well as in Division 10,

Education. Goods and services classified outside Division 10 are: 03.1.2.4 (School uniforms), 07.3.2.3 (Passenger transport for students to and from school), 09.7.1.1 (Educational books), 11.1.2.1 (Canteens, cafeterias of universities, schools, and kindergartens), and 11.2.0.3 (Accommodation services of boarding schools, universities and other educational establishments).

3.3.2.3.1. UOE ancillary services vs. ESA ancillary activities

In the ESA 2010 definitions of ancillary activities, an activity must, as well as existing solely to support the principal or secondary economic activities of a unit, be *"integrated with the local KAU they serve"* (3.13). *"Ancillary services are not isolated to form distinct entities or separated from the principal or secondary activities or entities they serve"* (ESA 2010, 3.13). While the definitions of ancillary services in the UOE framework do correspond with the ESA definitions in that ancillary services must exist solely to support educational programmes, they do not correspond in that UOE ancillary services do not have to be administratively or otherwise integrated with the educational programme they are supporting. In terms of the correspondence: the UOE manual does not explicitly state that ancillary services are those that exist solely to support educational programmes as defined in the UOE, but, as explained in Section 5.1.1 of this paper, the examples provided in the UOE manual for services which are not ancillary are based on the concept that they are not considered as ancillary because they can be used as peripheral goods and services of educational programmes as defined in the UOE but may also be used more generally for purposes unrelated to those educational programmes. In terms of the lack of correspondence: in the UOE framework, *all* services which may be used as non-instructional, peripheral educational goods and services as defined in the UOE and not for any other purposes are considered as ancillary services, regardless of how they are organised or whether they are administratively integrated with the educational programme or they are supporting. The UOE manual even gives the example of entities providing ancillary services as *"separate organisations"* such as general purpose units of public authorities (UOE 2021, 2.4.2).

3.3.2.4. Expenditures relevant to: mobile students, private tutoring

In the classification, are any expenditures apart from non-instructional and R&D expenditures considered to be linked to the programmes which are defined in the education categories?

- Does the classification specify how expenditure related to students from abroad enrolled in short exchange programmes in the reporting country should be classified?
- Is private tutoring included in the definition of education expenditure or elsewhere? As the UOE data collection measures only private tutoring which is related to the educational programmes being pursued, there should be a check of whether the classification disaggregates private tutoring expenditures into expenditures on private tuition related to particular educational programmes (and which programmes) from other expenditures on private tuition.

3.3.2.5. Categories not defined as education in the classification, but which correspond to UOE education expenditure

Does some of the UOE expenditure correspond to expenditures in categories in the classification in question which are not described as educational? In COFOG for example, the UOE expenditures on ISCED 01 programmes would be included within the expenditures classified in the group 10.4 Family and Children. In COICOP, while Division 10 covers exclusively education services, *“other expenditures linked with education have been separately identified across other divisions to enable the calculation of all education-related expenditures. These education-related expenditures include 03.1.2.4 (School uniforms), 07.3.2.3 (Passenger transport for students to and from school), 09.7.1.1 (Educational books), 11.1.2.1 (Canteens, cafeterias of universities, schools, and kindergartens), and 11.2.0.3 (Accommodation*

services of boarding schools, universities and other educational establishments)” (COICOP 2018, Annex 2)

3.3.2.6. Accounting principles

Do the accounting principles used in the classification follow the accounting principles set out in the ESA 2010? If so, see Section 2.4 for an examination of the correspondence between the UOE and ESA accounting principles in theory and in practice.

3.3.3. Comparison – treatment of providers who offer both educational and non-educational goods and services

How does the classification in question treat providers of a combination of services, where some services could be categorised as educational in the classification and some could be categorised as non-educational? Is there advice aimed at enabling the classification of different types of services into different categories even when they are provided by the same provider, or are there instructions around how to make a decision for each provider as one entity based on the good/service which produces the most output? In the first case, there would be correspondence with how the UOE framework advises that education expenditure is calculated (apart from for some ISCED 01 programmes), and in the second case there would be a lack of correspondence with how the UOE framework advises that education expenditure is calculated (apart from for some ISCED 01 programmes).

4

UOE sources of funds and corresponding ESA sectors

This chapter examines how the definitions of each UOE source of funds correspond to the definitions of different sectors in the ESA.

Section 4.1 outlines the definitions of different sources of funds in the UOE framework, Section 4.2 presents the ESA rules for allocating units into different ESA sectors, and Sections 4.3 – 4.6 provide a comparison of the two groupings.

The analysis in this chapter can support a comparison of expenditure on education (as it is defined in the UOE) from a UOE source of funds with expenditure on education (as it is defined in the relevant functional classification) of an ESA sector.

4.1. UOE – sources of funds

The **UOE framework** defines four sources of funds (Section 3.7.2.1, UOE manual) for education:

- Government sources;
- International agencies and other foreign sources (IAOFS);
- Other private entities (OPE);
- Households.

Sources of funds are defined in order to support the collection of statistics on expenditure on education from

different sources of funds, and answer questions such as: Who provides funding for education? What kind of education are they funding (payments to public institutions, payments to private institutions, payments for ancillary services, payments outside educational institutions)?

4.2. ESA – sectors

As listed in Section 2.2, the **ESA sectors** are:

- Non-financial corporations (S.11);
- Financial corporations (S.12);
- General government (S.13);
- Households (S.14);
- Non-profit institutions serving households (S.15);
- Rest of the world (S.2).

The following two illustrations (Diagram 2.1 from the ESA 2010 – Allocation of units to sectors and Diagram 20.1 from the ESA 2010 – Decision tree) illustrate how units are allocated into different sectors based on various characteristics, including whether they are market or non-market producers, or whether they are controlled by government. Sections 4.2.1 to 4.2.2 detail how the decisions are made around whether a unit is a market or non-market producer, or whether it is controlled by government or not.

DIAGRAM 1

Allocations of units to sector

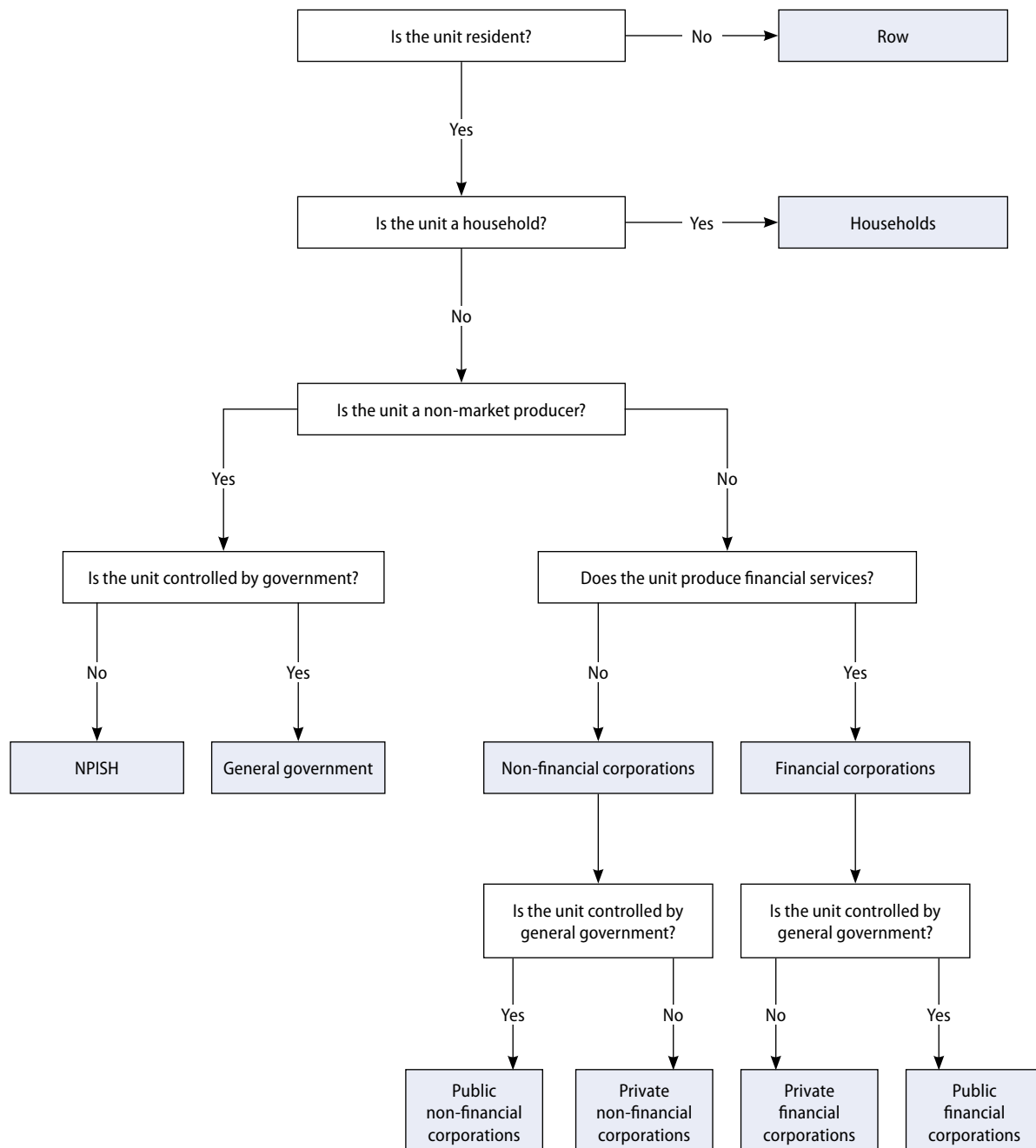
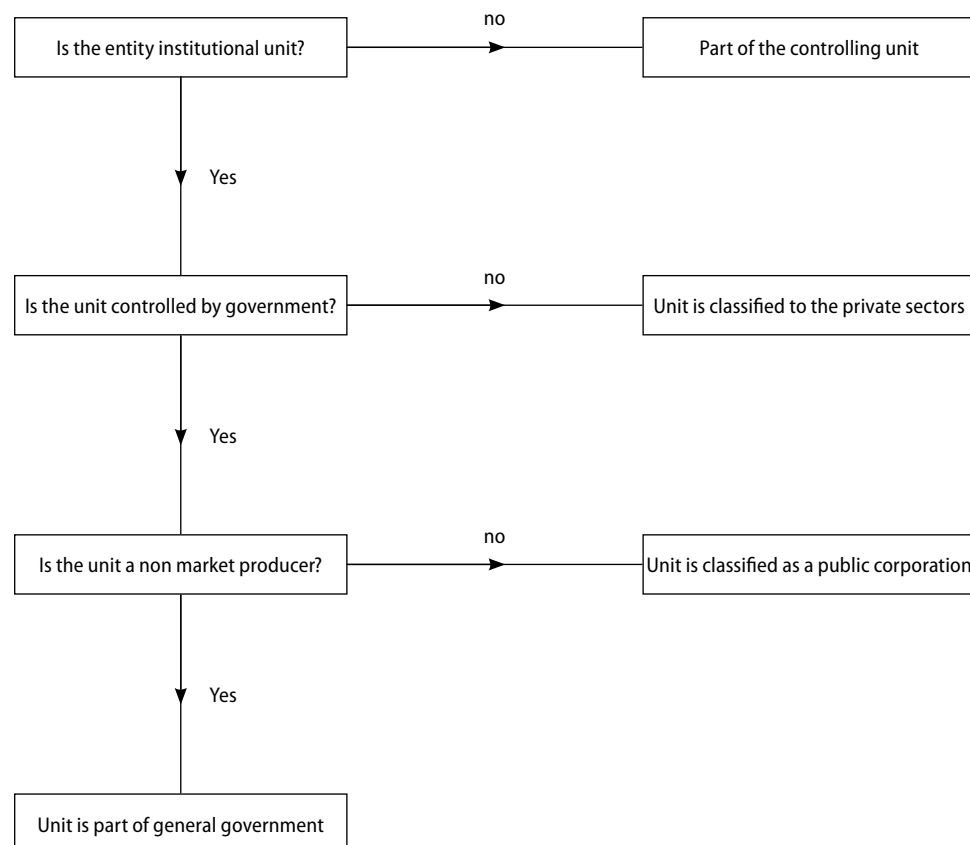


DIAGRAM 2**Decision tree****4.2.1. ESA – market - non market test**

In the ESA, differentiating units between market and non-market is decided by the following rule (§1.37):

“an activity is considered as a market activity when the corresponding goods and services are traded under the following conditions:

1. *sellers act to maximise their profits in the long term, and do so by selling goods and services freely on the market to whoever is prepared to pay the asking price;*
2. *buyers act to maximise their utility given their limited resources, by buying according to which products best meet their needs at the offered price;*
3. *effective markets exist where sellers and buyers have access to, and information on, the market. An effective market can operate even if these conditions are not met perfectly.”*

For all units which are considered to be controlled by government (indicators of government control in the ESA are detailed in Section 4.1.2) and therefore classified as

‘public’, there are further instructions on deciding whether the unit should be classified as ‘market’ or ‘non-market’. Sections 20.19 – 20.55 of the ESA detail the additional considerations to be made when classifying public units, including that *“to be a market producer, the unit shall cover at least 50 % of its costs by its sales over a sustained multi-year period”* (3.19, ESA 2010).

4.2.2. ESA – determining government control

In the ESA, a unit is part of the ‘public sector’ if it is controlled by government (§1.35). Control is defined as the ability to determine the general policy or programme of an institutional unit (§1.36).

The ESA gives a list of indicators which can be used to help define government control. The list of indicators is different depending on whether the unit is a corporation or a non-profit institution (see Diagram 2.1 from the ESA

2010, presented at the start of Section 4.2, for details on how units are classified as corporations or non-profit institutions).

The ESA instructs that the following indicators help define if the government secures control over a 'corporation':

"government ownership of the majority of the voting interest;

- a. government control of the board or governing body;*
- b. government control of the appointment and removal of key personnel;*
- c. government control of key committees in the entity;*
- d. government possession of a golden share;*
- e. special regulations;*
- f. government as a dominant customer;*
- g. borrowing from government"* (§2.38).

The ESA instructs that following indicators help define if the general government secures control over a 'non-profit institution':

- a. "the appointment of officers;*
- b. the provisions of enabling instruments;*
- c. contractual agreements;*
- d. the degree of financing;*
- e. the degree of government risk exposure"* (§2.39).

In both cases, the ESA details how *"a single indicator may be sufficient to establish control, but, in other cases, a number of separate indicators may collectively indicate control"* (§2.38, §2.39, ESA 2010).

4.3. Correspondence – UOE government sources and the ESA sector general government

Expenditure on education from government sources is referred to as public expenditure in the UOE manual. The UOE manual defines public expenditure (Section 3.7.2.2, UOE manual) as the *"spending of public authorities at all levels. Expenditure on education by other ministries or equivalent institutions, for example Health and Agriculture is included."*

Most of the transactions that the UOE manual defines as 'public expenditure' on education will be found in the

transactions of the sector the ESA defines as 'general government' (S13). The general government (S.13) sector includes all institutional units which are non-market producers controlled by government ⁽⁹⁾. A marginal number of transactions that the UOE manual defines as 'public expenditure' on education will be found in the transactions of the sector the ESA defines as the 'public non-financial corporations' (S.11001, subsector of 'non-financial corporations' S.11 – see ESA 2010 § 2.51) or public financial corporations (S.12401, S.12501, S.12601, S.12701, all subsectors of 'financial corporations' S.12 – see ESA 2010 § 2.71 and Table 2.3).

The transactions that the UOE manual defines as public expenditure from government sources will be in the transactions of what the ESA defines as 'public corporations' in cases where the UOE's government sources would count as 'market producers' according to ESA definitions (definition in Section 4.2.1). In the ESA, units need to be considered as 'non-market producers' in order to be included in the sector 'general government'.

4.3.1. Correspondence – levels of government in the UOE and ESA frameworks

The UOE framework defines levels of government into the following categories (without more explicit definitions):

- Central (national) government;
- Regional government;
- Local government.

The split between the three levels of government in the UOE corresponds to the way the ESA 2010 (2.113) defines different levels of government as (if the UOE government source is considered a non-market producer according to ESA definitions):

- Central government (S.1311);
- State government (S.1312);
- Local government (S.1313).

The level of correspondence between the split of levels of government may be hindered by the lack of explicit definitions of the three government categories in the

⁽⁹⁾ This is a partial definition from the [2022 Manual on Government Deficit And Debt](#). The full definition in the manual is: *"The general government (S.13) sector includes all institutional units which are non-market producers controlled by government, whose output is intended for individual and collective consumption, and are financed by compulsory payments made by units belonging to other sectors; it also includes institutional units principally engaged in the redistribution of national income and wealth, which is an activity mainly carried out by government."* Section 1.2 of the manual provides a detailed account of how to decide whether to classify different entities into the general government sector, taking into account qualitative criteria as well as some specific government controlled entities for which the market/non-market test is not relevant. This paper does not consider how these details affect a comparison between the definitions of ESA sectors and UOE sources of funds.

UOE because there may be differing interpretations of the categories across countries.

There may be an additional difference in that countries that have more than three levels of government, some sources of funds will be classified as 'local' in the UOE which would be considered to be "state" units in the ESA. The UOE specifies that "If there are four or more levels [of government], the second level usually must be designated regional and the third (and following ones), local." This differs to the ESA 2010 which says that "In countries that have more than three levels, the various units should all be classified to one of the levels above" (§20.56).

4.4. Correspondence – UOE international agencies and other foreign sources (IAOFS) and the ESA rest of the world sector

There is a good correspondence between what the UOE defines as IAOFS and what the ESA defines as the 'rest of the world'. Both the UOE and ESA frameworks instruct that international organisations and agencies should be considered as outside the geographical scope of national economies even if they are based within the geographical territory of a reporting country, and define such entities as being part of IAOFS (UOE) and the 'Rest of the world' (ESA).

The UOE manual defines international agencies and other foreign sources (IAOFS, Section 3.7.2.3, UOE manual) as follows ⁽¹⁰⁾:

"International funds consist of funds from public multilateral organisations for development aid to education. These organisations include multilateral development banks (the World Bank and regional development banks), the United Nations agencies and other intergovernmental organisations, bilateral development co-operation government agencies and international NGO agencies established in the receiving country."

The transactions which the UOE manual defines as IAOFS expenditure on education will be found in the transactions of what the ESA defines as the 'Rest of the world' sector (S2).

In the ESA:

"The rest of the world ... is a grouping of units without any characteristic functions and resources; it consists of non-resident units insofar as they are engaged in transactions with resident institutional units, or have other economic links

with resident units. Its accounts provide an overall view of the economic relationships linking the national economy with the rest of the world". (§2.131)

"The rest of the world sector (S.2) is subdivided into:

- a. *Member States and institutions and bodies of the European Union (S.21):*
 - 1. *Member States of the European Union (S.211);*
 - 2. *Institutions and bodies of the European Union (S.212);*
- b. *non-member countries and international organisations non-resident of EU (S.22)." Additionally, ESA instructions on deciding which units should be considered as part of the national economy state that:*

"excluded are the parts of the country's own geographic territory used by the following organisations:

- a. *general government agencies of other countries;*
- b. *institutions and bodies of the European Union; and*
- c. *international organisations under international treaties between states."* (§2.06).

There is a small difference in the definitions of IAOFS in the UOE and the 'rest of the world' in the ESA. In the ESA, branches or subsidiaries of a foreign corporation which are resident in the reporting country are usually considered as resident in the reporting country rather than as part of the 'rest of the world'. The UOE manual does not specify directly how to treat such entities, but the manual does state that "a research grant from a foreign corporation to a public university" is an example of funds from IAOFS (section 3.7.2.3, UOE manual).

4.5. Correspondence – UOE other private entities and ESA sectors

The UOE manual defines other private entities (Section 3.7.2.4.1, UOE manual) as:

"including private businesses and non-profit organisations, including religious organisations, charitable organisations, and business and labour associations. It also includes expenditure by private companies on the work-based element of school and work-based training of apprentices and students".

The part of the UOE's other private entities which consists of 'private business' corresponds to what is defined in the ESA as the non-financial corporations sector (S11) as well as the financial corporations sector (S12):

"The non-financial corporations sector (S.11) consists of institutional units which are independent legal entities

⁽¹⁰⁾ As part of a review of the UOE Manual, changing the terminology and the definition of IAOFS is under consideration.

and market producers, and whose principal activity is the production of goods and non-financial services.” (§2.45)

“The financial corporations sector (S.12) institutional units which are independent legal entities and market producers, and whose principal activity is the production of financial services.” (§2.55)

The part of the UOE’s ‘other private entities’ which consists of “non-profit organisations, including religious organisations, charitable organisations, and business and labour associations” corresponds to what is defined in the ESA as the non-profit institutions serving households sector (S15). The ESA defines this sector as:

“The non-profit institutions serving households (NPISHs) sector (S.15) consists of non-profit institutions which are separate legal entities, which serve households and which are private non-market producers. Their principal resources are voluntary contributions in cash or in kind from households in their capacity as consumers, from payments made by general government and from property income.” (§ 2.129).

Some of the sources of funds considered as other private entities in the UOE would be considered to be in ESA sectors that include units classified as ‘public corporations’ in the ESA (see Section 4.2). These are sources of funds which would not be considered as controlled by government by UOE data compilers, and therefore they are classified as private in the UOE and included in the category ‘other private entities’, but which would be considered as units controlled by government according to ESA guidelines and therefore classified in the ESA public sector. For example, some banks providing student loans which are considered as a source of funds in the category other private entities in the UOE framework would be considered as public corporations in the ESA. The differences arise because of the differences between the way the ESA provides guidelines about whether a unit should be considered as part of the ESA’s ‘public’ sector or not, and the way that the UOE manual can be interpreted to decide whether a funding entity is a government source or not.

The ESA indicators for determining whether a unit is controlled by government or not are listed in Section 4.2.2.

While the UOE framework does not provide instructions on how to classify sources of funds as either public (government) or private (other private entities), data compilers may classify UOE sources of funds as either public or private based on the UOE rules for classifying educational institutions as either public or private.

The differences between the way the ESA provides guidelines about whether an ESA unit should be considered

as part of the ESA’s public sector or not, and the way that the UOE manual defines whether UOE educational institutions are public or private can be summarised as follows:

- both the ESA and the UOE list a number of indicators that can be used to establish whether a unit is controlled by government/part of the public sector (ESA) or whether an educational institution is public or private (UOE)
- both methodologies acknowledge that a single indicator may in some cases be sufficient to establish whether a unit is controlled by government/part of the public sector (ESA) or whether an educational institution is public or private (UOE).
- In the ESA, the level of borrowing from government is one of the indicators that can be used to determine if a market producer is public or not. For non-market producers, the degree of financing from government can be used to determine if a non-market producer is public or not. However, the UOE manual explicitly states that *‘The extent to which an [educational] institution receives its funding from public or private sources does not determine the classification status of the institution between public and private. It is possible, for example, for a privately managed school to obtain all of its funding from public sources and for a publicly controlled institution to derive most of its funds from tuition fees paid by households’.*
- Because the ESA framework uses the indicator related to the level of borrowing from government/ the degree of financing from government in order to determine whether government has overall control of an institutional unit, but the UOE framework does not take into account such indicators when classifying educational institutions as either public or private, there may be cases where an institutional unit is classified as public units by ESA data compilers looking at the level of borrowing/ degree of financing while that corresponding educational institution will be classified as a private institution by UOE data compilers who are not taking such indicators into account. This may be particularly important for Universities and other tertiary education institutions.
- UOE data compilers are likely to utilise the indicators listed in the UOE manual for deciding whether an educational institution is public or private in order to determine whether a funding source is a government or a private source of funds.
- As with educational institutions, there will likely be cases where an institutional unit is classified as a public unit by ESA data compilers looking at the level of borrowing/ degree of financing while the corresponding source of funds will be classified as a private source of funds (in the

category other private entities) by UOE data compilers who are not taking such indicators into account.

- It is therefore likely that a number of funding entities which are categorised as 'other private sources' in the UOE would actually be considered as either part of the 'general government' sector or the 'public non financial corporations' sector in the ESA.

4.6. Correspondence – UOE households and the ESA household sector

The UOE manual defines "households" as students and their families (Section 3.7.2.4.1, UOE manual).

In the ESA 2010:

"The households sector (S.14) consists of individuals or groups of individuals as consumers and as entrepreneurs producing market goods and non-financial and financial services (market producers) provided that the production of goods and services is not by separate entities treated as quasicorporations. It also includes individuals or groups of individuals as producers of goods and nonfinancial services for exclusively own final use." (S2.118)

Most of the sources of funds which are considered as households according to UOE definitions will correspond to ESA institutional units within the sector 'households' (S14). However, some of the sources of funds that are considered as households according to UOE definitions will correspond to ESA institutional units within the 'rest of the world' sector (see Section 4.6.1 for further details). Additionally, there are some institutional units which would be defined as part of the 'households' sector and part of the national economy according to ESA definitions would be excluded from the reporting country's statistics (see Section 4.6.2 for further details).

4.6.1. Comparison – treatment of non resident students studying in the reporting country

4.6.1.1. Non-resident students who are enrolled in and will graduate from programmes based in the reporting country

In the ESA framework, no students who are foreign/non-resident in a reporting country would be included as institutional units within the households sector of that

country even if they are enrolled in programmes within the reporting country. In the UOE framework, all students who will graduate from educational programmes within the national territory of a reporting country would be considered as household sources of funds in that country, regardless of their residence status.

This means that the following groups of students would be considered as household sources of funds within the reporting country by UOE framework definitions but as part of the sector rest of the world by the definitions in the ESA framework:

- Students who reside abroad but who are involved in distance learning/e-learning programmes delivered from the reporting country.
- Students who reside abroad but who commute i.e. they cross a national border on a daily basis in order to follow an education programme in the reporting country.
- Degree mobile students who are still registered as residents in their country of origin. According to ESA definitions, it is possible that many of what the UOE defines as degree mobile students (see Section 2.3.1 on geographical scope in the UOE) would be considered as non-resident in the reporting country. In the ESA 2010 *"Students are always treated as residents, irrespective of the length of their studies abroad"* (see Section 2.3.2 on ESA geographical scope).

In practice, because of frequent lack of data related to non-resident households, the expenditures of and on non-resident students are often not covered in the UOE transmissions. This means that, in practice, the difference in the treatment of non-resident students studying in programmes within the reporting country does not always affect the correspondence between the education expenditure statistics compiled according to UOE or ESA principles.

4.6.1.2. Non-resident students who are on short-term mobility programmes in educational institutions within the reporting country, but who will return to their home institutions to graduate

According to the definitions in both frameworks, statistics related to students who are residents in foreign countries but who are on short mobility programmes which operate from the reporting country should be excluded from the coverage (UOE)/considered as part of the rest of the world sector (ESA).

4.6.2. Comparison – treatment OF residents of the reporting country studying abroad

The ESA definition of the household sector includes students who remain members of the households in the reporting country but who are enrolled in degree programmes outside of the reporting country. However, the UOE framework definition for household sources of funds excludes students who are still resident in the reporting

country but who are enrolled in programmes outside of the reporting country's territory. In practice it is hard for UOE data compilers to exclude residents of the reporting country who are studying abroad from the statistics relevant to household sources of funds. This means that, in practice, the different treatment of students who remain members of households within the reporting country but who are enrolled in degree programmes abroad will not affect education expenditure statistics compiled according to UOE or ESA principles.

5

UOE educational institutions and corresponding ESA units and sectors

The UOE conceptual framework is centred around the concept of educational institutions, which are regarded as service providers delivering programmes classified as educational in ISCED (Section 2 of the UOE manual). The UOE framework allows for an analysis of the amount of funds spent directly to educational institutions, as well as how these funds are spent (the nature of expenditure) ⁽¹⁾.

This chapter examines how what are defined as educational institutions in the UOE framework correspond to different units in the ESA (institutional units, local KAUs).

This chapter also examines how the UOE subcategories of educational institutions – public; private but government dependent; and private independent institutions – correspond to the ESA definitions for different sectors.

The chapter begins with the UOE definitions of educational institutions and their categorisation as either public, private government dependent and private independent before providing a comparison with the ESA units and sectors.

5.1. UOE – educational institutions

The UOE framework defines educational institutions and:

- differentiates between expenditure from different sources of funds on educational goods and services

provided by educational institutions and expenditure from different sources of funds on educational goods and services provided outside educational institutions.

- differentiates between expenditure from different sources of funds on educational goods and services provided by educational institutions and expenditure from different sources of funds to another source of funding.
- defines different expenditures of educational institutions (current and capital expenditure). The expenditures of services providers which provide educational goods and services but which are not considered to be educational institutions according to UOE definitions are not defined.
- disaggregates educational institutions into public, private government dependent and private independent institutions.
- defines educational institutions into instructional and non-instructional institutions.
- uses the definition of educational institutions to delineate the scope of R&D. In the UOE framework, R&D is defined as all research and development which is performed inside tertiary educational institutions.

The UOE framework defines educational institutions as:

“entities that provide either educational core or peripheral goods and services to individuals and other educational institutions”

⁽¹⁾ In the UOE framework, direct expenditure on educational institutions includes both expenditure which is transferred to the accounts of educational institutions, and also expenditure which is spent directly on the programme delivered by the educational institution but does not actually pass through the account of the educational institution. For example, teachers' salaries which are paid for directly by government without passing through the account of an educational institutions delivering the programme which employs those teachers will still count as expenditure from government directly on educational institutions. Expenditure of educational institutions also includes both expenditure coming from the accounts of educational institutions, as well as expenditure on the programme provided by the educational institution which has not passed through the accounts of educational institution. This is why the nature of expenditure of educational institutions is referred to as the expenditure of/on educational institutions.

Examples of what are considered in the UOE framework to constitute educational core goods and services are listed in Section 3.7.1.1.1 of the UOE manual:

- *Instruction (i.e., teaching costs), including in teaching hospitals as it relates to the teaching of medical students;*
- *Educational goods (books, materials, etc.) provided by institutions;*
- *Training of apprentices and other participants in combined school and work-based educational programmes at the workplace.*
- *Administration;*
- *Capital expenditure and rent;*
- *Special educational needs; guidance;*

Examples of what are considered in the UOE framework to constitute educational peripheral goods and services are also listed in Section 3.7.1.1.1 of the UOE manual:

- *Educational research and curriculum development (including in teaching hospitals- but see below);*
- *Research and development performed at higher education institutions;*
- *Non-instructional goods and services (Ancillary Services):*
- *Student transportation, school meals, student housing, boarding, student health services;*
- *Services for the general public provided by educational institutions*

Some service providers are considered to be 'outside education' even if they provide core or peripheral educational goods and services. The UOE manual does not provide direct guidelines on how to differentiate between educational institutions and entities which provide educational goods and services but which are not considered to be educational institutions according to the UOE framework. However, the examples in the manual are based on the concept that if the goods and services provided which can be used as core or peripheral educational goods and services may also be used more generally for purposes unrelated to educational programme, then the providers of those goods and services would be considered as 'outside education' and not as educational institutions. For example, if students are provided with free tickets to use local transport in order to travel to school then the local transport companies would be considered as 'educational institutions'. However, if the students are provided with free tickets for general use of the local transport system then the local transport companies would be considered as outside education and not considered as an educational institution according to UOE guidelines. Examples of educational goods and services purchased outside educational institutions are:

- *Expenditure on educational goods which are requested for participation in the programmes and which are therefore imposed on the student either directly or indirectly by the educational institutions. Examples are school uniforms, books requested for instruction, athletic equipment, and materials for arts lessons.*

- *Expenditure on educational goods which are not required by institutions, but which students and households choose to buy in support of their study in the programmes in scope of the data collection. Examples are additional books or computer, learning software to be used at home.*

- *Fees for private out of school tuition related to the educational programmes being pursued. This will be the main type of educational service purchased outside institutions. Outside school tuition is restricted to tuition intended to support the participation in programmes that fall under the scope of the data collection.*

- *Purchases from commercial enterprises operated or sponsored by educational institutions (e.g. university bookstores) are regarded as expenditure outside educational institution. (Section 3.7.1.2.1, UOE manual)*

- *Student living costs if they are subsidised through financial aid to students."*

All educational institutions are defined as resident in the reporting country, in line with the UOE instructions on geographical scope (see Section 2.3.1).

5.1.1. UOE – instructional and non-instructional educational institutions

The UOE framework differentiates between instructional and non-instructional educational institutions.

Instructional educational institutions are those that provide educational programmes for students as their main purpose (e.g. schools, colleges, universities) that fall within the scope of education statistics.

Non-instructional educational institutions are educational institutions that provide education-related administrative, advisory or professional services for individuals or other educational institutions, although they do not enrol students themselves.

5.1.2. UOE – classifying UOE educational institutions as public, private government dependent, private independent

In the UOE framework, what are defined as ‘educational institutions’ are classified as public or private by determining whether government has ‘overall control’ of an institution as follows:

*“The classification between public and private is made according to whether a public agency or a private entity has the **overall control** of the institution and not according to which sector provides the majority of the funding. Overall control is decided with reference to who has the power to determine the general policies and activities of the institution including the appointment the staff and officers managing the school and, where relevant, the majority of members of the governing body. Overall control will usually also extend to the decision to open or close the institution. As many institutions are under the operational control of a governing body, the constitution of that body will also have a bearing on the classification. (Section 2.4.3.1 of the UOE manual)*

An institution is classified as public if it is controlled and managed:

- *Directly by a public education authority or agency of the country where it is located or,*
- *Either by a government agency directly or by a governing body (council, committee etc.), most of whose members are either appointed by a public authority of the country where it is located or elected by public franchise.*

An institution is classified as private if:

It is controlled and managed by a non-governmental organisation (e.g. a church, a trade union or a business enterprise, foreign or international agency), or

Its Governing Board consists mostly of members not selected by a public agency.” (Section 2.4.3.1 of the UOE manual)

The manual stresses that:

“The extent to which an institution receives its funding from public or private sources does not determine the classification status of the institution between public and private. It is possible, for example, for a privately managed school to obtain all of its funding from public sources and for a publicly controlled institution to derive most of its funds from tuition fees paid by households.”

Private institutions are further classified between ‘government dependent private’ and ‘independent private institutions’.

Private government dependent institutions are all those institutions which are classified as private and which also either receive at least 50 per cent of ‘core funding’ from government agencies or whose teaching personnel are paid by a government agency – either directly or through government. (Section 2.4.3.3, UOE manual)

In the UOE framework, core funding “refers to the funds that support the basic educational services of the institutions. It therefore EXCLUDES:

- *Funds provided specifically for research projects,*
- *Payments for services purchased or contracted by private organisations, or*
- *Fees and subsidies received for ancillary services, such as lodging and meals.” (Section 2.4.3.3 UOE manual).*

5.2. Comparison – UOE educational institutions and ESA institutional units

The ESA 2010 does not define any sector, subsector or other grouping of institutional units based on the provision of educational goods and services. The consequences of this are:

1. Statistics compiled according to ESA sectors will therefore group together, into the same sector/subsector/other grouping, institutional units which correspond to what the UOE defines as educational institutions and institutional units which correspond to what the UOE defines as sources of funds. For example, a government source of funds as defined in the UOE data collection could correspond to an institutional unit in the ESA sector general government (see Chapter 4), and a public educational institution as defined in the UOE data collection could also correspond to an institutional unit in the ESA sector general government (see Section 5.4.1).
2. When looking at flows within national accounts, it is difficult to identify flows between units which would be defined as sources of funds in the UOE framework, and units which would be defined as educational institutions in the UOE framework.
3. The scope of R&D as defined in the UOE framework does not correspond to the scope of R&D in any of the classifications used in the ESA which define education. This is because the scope of R&D in the UOE framework is based on the concept of UOE educational institutions.

Additionally, what are defined as educational institutions in the UOE may not always correspond to one institutional unit in the ESA.

In the ESA 2010, economic entities must first be considered by ESA standards to constitute an 'institutional unit' before they can be classified into a sector or subsector based on their economic behaviour.

In order to constitute an institutional unit in the ESA, an economic entity must be *"characterised by decision-making autonomy in the exercise of its principal function"*. The ESA also instructs that an institutional unit keeps *"a complete set of accounts, or is able to compile a complete set of accounts"*. In order to be said to have autonomy of decision in respect of its principal function, an institutional unit must be:

- a. *"entitled to own goods or assets in its own right; it will be able to exchange the ownership of goods or assets in transactions with other institutional units;*
- b. *able to take economic decisions and engage in economic activities for which it is responsible and accountable at law;*
- c. *able to incur liabilities on its own behalf, to take on other obligations or further commitments and to enter into contracts"* (§2.12).

In the ESA, an educational programme delivered by a service provider which does not have autonomy of decision could, in principle, be treated as:

- a service provided by a number of different parts of one institutional unit,
- a service provided by different parts of a number of institutional units within the same sector or subsector,
- a service provided by parts of a number of different institutional units which are classified into different ESA sectors or subsectors.

In the UOE framework, a service provider does not need to have its own financial account or enjoy legal or financial autonomy in order to be considered as an educational institution. The only requirement for a service provider to be considered as an educational institution is that they

provide educational core or peripheral goods and services. As stated in the UOE manual:

"Educational institutions are defined as entities that provide either educational core or peripheral goods and services to individuals and other educational institutions."

In the UOE framework, an educational programme delivered by a service provider which does not have autonomy of decision would always be treated as a programme delivered by one educational institution.

5.3. Comparison – UOE educational institutions and ESA kind-of-activity units

There is a level of correspondence between what the UOE defines as educational institutions and what is defined in the ESA as local kind-of-activity units (local KAUs) engaged in the activity education as it is classified in NACE Rev. 2.

In the ESA, when institutional units carry out more than one activity, they are partitioned with regard to the type of activity. Local KAUs enable this presentation to be made. (ESA 2010 1.58)

An activity occurs when resources such as equipment, labour, manufacturing techniques, information networks or products are combined, leading to the creation of specific goods or services. An activity is characterised by an input of products, a production process and an output of products. (ESA 2010 2.145)

A local KAU groups all the parts of an institutional unit in its capacity as producer ⁽¹²⁾ which are located in a single site or in closely located sites, and which contribute to the performance of an activity at the class level (four digits) of the NACE Rev. 2. (ESA 2010 1.58)

The group of all local KAUs engaged on the same, or similar, kind-of-activity constitutes an industry.

The NACE Rev. 2 classification defines a number of classes under the division 'Education'.

⁽¹²⁾ Production is an activity carried out under the control, responsibility and management of an institutional unit that uses inputs of labour, capital and goods and services to produce outputs of goods and services. Production includes: (a) the production of all individual or collective goods and services that are supplied to units other than their producers; (b) the own-account production of all goods that are retained by their producers for their own final consumption or gross fixed capital formation.

TABLE 2**List of classes under the division Education in NACE Rev. 2**

n.e.c. : not elsewhere classified			* part of
Division	Group	Class	ISIC Rev. 4
SECTION P — EDUCATION			
85		Education	
	85.1	Pre-primary education	
		85.10 Pre-primary education	8510*
	85.2	Primary education	
		85.20 Primary education	8510*
	85.3	Secondary education	
		85.31 General secondary education	8521
		85.32 Technical and vocational secondary education	8522
	85.4	Higher education	
		85.41 Post-secondary non-tertiary education	8530*
		85.42 Tertiary education	8530*
	85.5	Other education	
		85.51 Sports and recreation education	8541
		85.52 Cultural education	8542
		85.53 Driving school activities	8549*
		85.59 Other education n.e.c.	8549*
	85.6	Educational support activities	
		85.60 Educational support activities	8550

In order to examine the correspondence between what are defined in the UOE as educational institutions and what are defined in the ESA as local KAUs engaged in the activity of education as it is classified in NACE Rev. 2, it is necessary to compare the scope of education in the UOE framework with the scope of education in the NACE classification, taking into account the questions in Section 3.3 of this paper.

5.4. Correspondence – UOE public, government dependent, private educational institutions and ESA sectors

What are defined as educational institutions in the UOE do not correspond to any groupings of sector or subsector

of institutional units in the ESA. What is considered as an educational institution according to the UOE framework could, depending on its specific characteristics, correspond to an institutional unit/s in any of the following sectors:

- General government (S.13);
- Public non-financial corporations (S.11001);
- Private non-financial corporations (S.11002);
- Non-profit institutions serving households (S.15);

Although what are defined as educational institutions in the UOE do not correspond to any groupings of sector or subsector of institutional units in the ESA, if the specific characteristics of what are classified as public, private government dependent and private independent educational institutions in the UOE framework are known, it is possible to find the sector to which their corresponding institutional unit belongs. ⁽¹³⁾ Additionally, as the UOE

⁽¹³⁾ A UOE educational institution could in principle also correspond to a number of local kind-of-activity units which are classified into one or more ESA sectors (see Section 5.2).

framework covers only educational institutions which are domestic (i.e. within its own territory), they will all be taken into account in some part of the ESA because the ESA also covers all resident units (geographical scope for ESA and UOE listed in Section 2.3.2).

If UOE educational institutions do not correspond to institutional units in the ESA, they may correspond to a number of local KAUs, and these either be classified as part of the same Sector or in a combination of the above-mentioned Sectors (see Section 5.2).

Subsections 5.4.1 to 5.4.3 look at how the specific characteristics of UOE educational institutions will determine the sector to which their corresponding institutional unit is classified in the ESA.

5.4.1. Correspondence – UOE public institutions and ESA sectors

UOE public institutions would all be considered as ‘controlled by government’ according to ESA definitions. The characteristics of educational institutions which are used in the UOE to classify them as ‘public’ (Section 5.1.2) correspond to the characteristics used in the ESA to define units as ‘controlled by government’ i.e. who has power to ‘determine the general policies’, who has power to appoint staff and who has power to appoint the governing body. The ESA method for determining government control is presented in Section 4.2.2.

UOE public institutions may be either ‘market’ or ‘non-market’ according to ESA definitions. In the UOE framework, decisions around the classification of educational institutions as ‘public’ are not made based on characteristics which are used to differentiate between market and non-market units in the ESA 2010. Section 4.2.1 describes the characteristics used to classify units are either market or non-market according to ESA definitions.

Considering that UOE public educational institutions would be defined as both ‘government controlled’ as well as either ‘market’ or ‘non-market’ in the ESA, they would be classified into the following ESA sectors (see Section 2.2 for definitions of ESA Sectors, and Section 4.2 for flow diagrams used when allocating institutional units to different Sectors in the ESA):

the General government sector (S.13) – if UOE educational institutions are classified as ‘non-market’ according to ESA definitions

or

the subsector Public non-financial corporations (S.11001) – if UOE educational institutions would be classified as ‘market’ according to ESA definitions.

No UOE educational institutions would be considered as producing financial services according to ESA definitions.

5.4.2. Correspondence – UOE private government dependent educational institutions and ESA sectors

Nearly all UOE private government dependent institutions would also be considered as ‘non-market’ according to ESA definitions (apart from those which receive exactly 50% of core funding from government and cover exactly 50% of their costs by sales). This is because educational institutions must receive at least 50 per cent of ‘core funding’ from government agencies or have teaching personnel paid for by government agencies in order to be classified as ‘private government dependent’ according to UOE definitions (see Section 5.1.2), and this means that no more than 50% of costs would be covered by sales for these institutions. As explained in Section 4.2.1: to be a market producer in the ESA, *“the unit shall cover at least 50 % of its costs by its sales over a sustained multi-year period”* (20.29, ESA 2010).

Some UOE private government dependent institutions would be considered as ‘controlled by government’ in the ESA 2010 because of the following logic:

- While the government might not necessarily have powers to determine the general policies of the institutions, or appoint staff or the governing body, UOE private government dependent institutions still receive at least 50% of core funding from government agencies/ have teaching personnel paid for by government agencies
- In the ESA, the degree of financing from government is listed as an indicator which can help define if the general government has overall control of ‘non-profit’ units (see Section 4.2.2). (As explained at the start of this Section, nearly all UOE private government dependent institutions would be considered as ‘non-profit’ in the ESA.)
- Because *“a single indicator may be sufficient to establish control”* in the ESA, it may be that the financing from government is used as the single indicator to classify these units as controlled by government.

At the same time, some UOE private government dependent institutions would be considered as ‘not controlled by government’ according to the ESA, because, even though the ESA notes that *“a single indicator may*

be sufficient to establish control”, it also notes that “in other cases, a number of separate indicators may collectively indicate control” (S.2.38, S.2.39).

Considering that UOE private government dependent educational institutions would be defined as ‘non-market’ as well as either ‘controlled by government’ or ‘not controlled by government’ in the ESA, they would be classified into the following ESA sectors (see Section 2.2 for definitions of ESA Sectors, and Section 4.2 for flow diagrams used when allocating institutional units to different Sectors in the ESA):

- The sector Non-profit institutions serving households (S.15) – if the UOE educational institution is considered as ‘not controlled by government’ by ESA data compilers
- The General Government sector (S.13) – if the UOE educational institution is considered as ‘controlled by government’ by ESA data compilers.

5.4.3. Correspondence – UOE private independent educational institutions and ESA sectors

All UOE private independent educational institutions would be considered as ‘not controlled by government’ according

to ESA definitions. Their neither receive funding from government, or have their general policies determined by government.

UOE private institutions may be either ‘market’ or ‘non-market’ according to ESA definitions. In the UOE framework, decisions around the classification of educational institutions as ‘private independent’ are not made based on characteristics which are used to differentiate between market and non-market units in the ESA 2010.

Considering that UOE private independent institutions would be defined as ‘not controlled by government’, as well as either ‘market’ or ‘non-market’ in the ESA, they would be classified into the following Sectors (see Section 2.2 for definitions of ESA Sectors, and Section 4.2 for flow diagrams used when allocating institutional units to different Sectors in the ESA):

- The Non-profit institutions serving households sector (S.15) – if the UOE private educational institution is a ‘non-market’ producer according to ESA definitions.
- The subsector Private non-financial corporations (S.11002) – if the UOE private educational institution is ‘market’ producer according to ESA definitions

No UOE educational institutions would be considered as producing financial services according to ESA definitions.

6

Expenditure on education from UOE sources of funds – mapping and comparison to ESA concepts and transactions

Most of this chapter provides a purely theoretical analysis of how expenditure from different sources of funds on education as defined in the UOE could map to ESA transactions. There are three sections which provide a more practical comparison of these UOE expenditure amounts and similar national accounts aggregates which are regularly calculated and published. The purely theoretical sections are mainly aimed at supporting UOE statisticians using national accounts to compile UOE returns, while the more practical comparisons are mainly aimed at supporting users wishing to relate the education expenditure data from the UOE and national accounts aggregates.

The three practical comparisons are Section 6.2.2, which compares UOE government direct expenditure on education with final consumption by government of the product education (Section P, CPA 2008) as well as the final consumption by government for the function education (Division 09) as defined in COFOG, Section 6.2.7, which compares UOE Total government expenditure on education with expenditure of the ESA sector general government for the COFOG function education, and Section 6.3.2, which compares UOE household expenditure on education with final consumption expenditure of the ESA sector households for the COICOP function education.

The chapter begins with a general comparison of terms used to define different flows in the two frameworks.

The ESA transactions which can be mapped to the UOE definitions for expenditure of sources of funds may differ depending on the characteristics of the UOE source of funds in question and how these characteristics affect the ESA sector to which the corresponding institutional unit/s of the UOE source of funds/UOE educational institutions

would be assigned. For example, part of what are defined in the UOE framework as intergovernmental transfers would be mapped to 'current transfers within general government' (D.73) in the ESA only in cases where both of the UOE government sources of funds involved in the transaction correspond to institutional units in the ESA sector general government. If one of the UOE sources of funds corresponds to an institutional unit in the ESA sector public corporations, then UOE intergovernmental transfers would not be mapped to the ESA transaction 'current transfers within general government' (D.73).

This chapter does not provide an exhaustive mapping of transactions for each possible combination of sectors, but only the most common situations.

6.1. Transactions – comparison of terms in the UOE and ESA frameworks

6.1.1. UOE – transactions

In the UOE framework, expenditure on education from a source of funds are transactions which are categorised either as 'transfers' or as 'payments to educational institutions'/'direct expenditure'. All transactions occurring between sources of funds (from one source of funds to another) are 'transfers'. Transactions going from a source of funds to an educational institution are 'payments to educational institutions'/'direct expenditure'.

The UOE manual details what should be included in various transfers and direct expenditures from each source of funds,

although not all possible transactions are defined (e.g. transfers from international sources to households).

For **government sources**, the UOE defines:

Transfers to:

- Other government sources (intergovernmental transfers);
- Households;
- Other private entities.

Direct expenditure:

- On educational institutions, including (but not exclusively) expenditures which can be defined as:
 - Designated for ancillary services;
 - Designated for capital;
 - For R&D activities.

For **household sources**, the UOE defines:

Direct expenditure:

- Payments to educational institutions, including (but not exclusively), expenditures which can be defined as:
 - Fees for ancillary services;
 - Payments for educational goods and services outside educational institutions.

For **other private sources**, the UOE defines:

Transfers to:

- Households.

Direct expenditure:

- Payments to educational institutions, including (but not exclusively), expenditures which can be defined as:
 - Fees for ancillary services;
 - For specific educational activities;
 - Designated for R&D activities.

For **UOE international sources**, the UOE defines:

Transfers to:

- UOE government sources.

Direct expenditure:

- On educational institutions, including (but not exclusively), expenditures which can be defined as:
 - For R&D activities.

6.1.2. ESA – transactions

In the ESA 2010 (§1.66), a 'transaction' is "an economic flow that is an interaction between institutional units by

mutual agreement or an action within an institutional unit that it is useful to treat as a transaction, because the unit is operating in two different capacities. Transactions are split into four main groups:

- transactions in products: which describe the origin (domestic output or imports) and use (intermediate consumption, final consumption, capital formation — covering consumption of fixed capital — or exports) of product.
- distributive transactions: which describe how value added generated by production is distributed to labour, capital and government, and the redistribution of income and wealth (taxes on income and wealth and other transfers).
- financial transactions: which describe the net acquisition of financial assets or the net incurrence of liabilities for each type of financial instrument. Such transactions occur both as counterparts of non-financial transactions, and as transactions involving only financial instruments.
- transactions not included in the three groups above: acquisitions less disposals of non-produced non-financial assets."

Transactions involving more than one unit are of two kinds. They can be 'something for something', i.e. required transactions, or they can be 'something for nothing', i.e. unrequited transactions. Required transactions are exchanges between institutional units, i.e. provision of goods, services or assets in return for a counterpart, e.g. money. Unrequited transactions are payments in cash or in kind from one institutional unit to another without counterpart. Required transactions occur in all four transaction groups, while unrequited transactions are mainly distributive transactions, for example, taxes, social assistance benefits or gifts. Such unrequited transactions are called 'transfers'. (ESA 2010 §1.71)

The ESA 2010 does not use the term 'direct expenditure'.

6.1.3. Comparison – transactions in the UOE and ESA frameworks

The term 'transfer' is used to describe different phenomena in the two frameworks and should not be confused. A 'transfer' in the UOE framework has a broad definition, and refers to any transaction between two sources of funds. It includes transactions which would be defined in the ESA as transfers, but it can also include transactions which would be defined in different ways in the ESA. For example, what the UOE framework would define as transfers from governments to households for student loans, the ESA

would define as financial transactions (not transfers).. 'In the ESA 2010, the definition of 'transfer' is specific and refers only to unrequited transactions.

In terms of the UOE category of 'payments to educational institutions/'direct expenditure', there is no corresponding term or concept in the ESA 2010. Most of the UOE 'direct expenditure' transactions will be termed 'transfers' by ESA definitions as they are most likely to be unrequited.

6.2. Government expenditure on education in the UOE and ESA frameworks – mapping and comparison

6.2.1. Mapping (theoretical) – UOE government direct expenditure mapped to ESA transactions

The UOE manual details that:

"Direct expenditure on educational institutions" by government may take either of two forms:

Purchases by a government agency of educational resources to be used by educational institutions. Examples include direct payments of teachers' salaries by a central or regional education ministry, direct payments by a municipality to building contractors for the construction of school buildings, and procurement of textbooks by a central or regional authority for subsequent distribution to local authorities or schools.

Payments by a government agency to educational institutions that have the responsibility of purchasing educational resources themselves. Examples of such payments include a government appropriation or block grant to a university, which the university then uses to pay staff salaries and to buy other resources, government allocations of funds to fiscally autonomous public schools, government subsidy to private schools; and government payments under contract to private companies conducting educational research.

The coverage of direct expenditure on educational institutions includes

- *current expenditure on staff compensation" (salaries for teaching and non-teaching staff, expenditure on retirement and other non-salary compensation)*
- *expenditure designated for capital, for ancillary services and for R&D.*

It excludes:

- *Expenditure on servicing debts (i.e. payments of interests on the amounts borrowed for educational purposes and repayments of the principal),*
- *Tuition fees that the families of students enrolled in public educational institutions are paying to regional or local government rather than directly to educational institutions to avoid double counting as they are included under household payments to institutions. (Section 3.7.2.2.2, UOE manual).*

From a purely theoretical perspective, UOE government direct expenditure for education would be mapped to the economic categories listed below if national accounts statisticians would identify flows from the general government sector to local KAUs engaged in the activity education as classified in NACE Rev 2. The flows from the sector general government to local KAUs engaged in the activity education would be summed up without taking into account any reciprocal flows from local KAUs engaged in the activity education back the general government sector i.e. they would be summed up before transactions have been consolidated. In the ESA, consolidation is "a method of presenting the accounts for a set of units as if they constituted one single entity (unit, sector, or subsector). It involves eliminating transactions and reciprocal stock positions and associated other economic flows among the units being consolidated" (§20.152). ESA government account transactions are consolidated when they are rearranged according to the government finance statistics (GFS) presentation, explained in Chapter 20 of the ESA. Considering the flows before they have been consolidated is especially relevant when considering flows from the sector general government to local KAUs engaged in the activity education which are also part of the sector general government, which is, in practice, the case for most local KAUs engaged in the activity education. Once transactions of the general government sector are consolidated, it is no longer be possible to identify all flows between units within the general government.

- Intermediate consumption (P.2)
- Compensation of employees (D.1)
- Current transfers within general government (D.73)
- Current transfers to NPISHs (D.751)
- some items of investment grants (D.92) – (cf. ESA 2010 §4.159)
- some parts of "other capital transfers" (D.99) i.e. item (c) described as "Transfers between subsectors of general government designed to cover unexpected expenditure or accumulated deficits."

- Gross fixed capital formation (P.51g). This is how what the UOE defines as expenditure for R&D would be recorded in the national accounts.

UOE government direct expenditure for education would also map to flows from the ESA general government to household sectors which are:

- Social transfers in kind — market production purchased by general government (D.632).

To reiterate the purely theoretical perspective in this section, the list of transactions above shows only what UOE government direct expenditure on education would map to if statisticians with access to detailed national accounts were able to identify flows from the general government sector (before flows of the general government sector have been consolidated and rearranged according to the GFS presentation of accounts) to local KAUs engaged in the activity education.

6.2.2. Comparison (practical) – UOE government direct expenditure on education and national accounts aggregates

UOE government direct expenditure may be compared to:

- Final consumption by government of the product education (Section P, CPA 2008) as defined in the CPA;
- Final consumption by government for the function education (Division 09, COFOG) as defined in COFOG.

In both cases, the comparison would need to take into account the difference between the scope of education in the UOE framework and the scope of education in the relevant classification. The difference between the scope of education in the UOE framework and the scope of education in CPA Section P, 'education', are more significant than the differences between the scope of education in the UOE and other classifications used in the ESA which define education.

Additionally, such a comparison would need to take into account that the components of final consumption expenditure (P3) in terms of economic categories are (see ESA 2010 §§20.106 - 20.107):

- Government output (P.1) = (Compensation of employees – D.1) + Intermediate consumption (P.2) + Taxes on production payable (D.29) – Subsidies receivable (D.39) + Consumption of fixed capital (P.51c) + Net operating surplus (B.2n)

Less

- Revenue items = Market output (P.11) + Output for own final use (P.12) + Payment for other non-market output (P.131)

Plus

- Social transfer in kind – purchased market production (D.632)

The UOE amounts for government direct expenditure do not take into account Subsidies receivable (D.39), Consumption of fixed capital (P.51c) or Net operating surplus (B.2n). The UOE amounts also do not take into account any of the Revenue items considered in the ESA calculation for final consumption expenditure.

When looking specifically at UOE direct expenditure and the final consumption expenditure of government for the COFOG function 9. Education, a comparison would need to take into account the fact that the COFOG amount will be the consolidated expenditure for the function education of general government units which fund education services as well as general government units which provide of education services. Such a consideration is not relevant for a comparison between UOE government direct expenditure and the final consumption expenditure by government of the product education as defined in the CPA.

In the ESA, consolidation is *"a method of presenting the accounts for a set of units as if they constituted one single entity (unit, sector, or subsector). It involves eliminating transactions and reciprocal stock positions and associated other economic flows among the units being consolidated"* (ESA 2010 §20.152). The ESA prescribes the consolidation of *"current and capital transfers, such as central government grants to lower level of government"* (ESA 2010 § 20.156a). This means that if UOE government sources of funds and UOE educational institutions both correspond to units within the sector general government in the ESA 2010, the transactions between the two would be consolidated in the amounts for final consumption expenditure. As explained in Section 6.2.1, the UOE framework looks only at flows from government to educational institutions without taking into account any reciprocal flows from educational institutions back to government sources i.e. before flows between the two have been consolidated. It is for this reason that the UOE amount for direct expenditure on educational institutions maps to the economic categories of Current transfers within general government (D.73) and some parts of "other capital transfers (D.99) i.e. item (c) described as "Transfers between subsectors of general government designed to cover unexpected expenditure

or accumulated deficits” (ESA 2010 §4.165c) before they have been consolidated for the ESA sector general government. In practice there are not many reciprocal flows from educational institutions to the government, and so consolidation of transactions in the general government sector in national accounts will not have a big effect on the correspondence between UOE direct expenditure and government final consumption expenditure for COFOG function 9. Education.

6.2.3. Mapping (theoretical) – UOE intergovernmental transfers mapped to ESA transactions

In the UOE manual, “*intergovernmental transfers are transfers of funds designated for education from one level of government to another. They are defined as net transfers from a higher level to a lower level of government*” (Section 3.7.2.2.3, UOE manual).

What the UOE defines as intergovernmental transfers can be mapped and compared to the following ESA transactions within the general government sector:

- current transfers within general government (D.73),
- some items of investment grants (D.92) i.e. the investment grants made to subsectors of general government for the purpose of financing capital formation described in §4.159 in the ESA 2010.
- some parts of other capital transfers (D.99) i.e. item (c) described as ‘*Transfers between subsectors of general government designed to cover unexpected expenditure or accumulated deficits.*’

Some considerations should be made when assessing the level of correspondence between UOE intergovernmental transfers and the ESA transactions within the sector general government listed above:

1. UOE intergovernmental transfers look at the net amount transferred from a higher to a lower level of government. This means that in a few situations (specifically in the Nordic countries), where transfers from local to regional authorities are greater than transfers from regional to local authorities, the net flows of funds are reported as negative transfers by the higher-level government.

As UOE intergovernmental transfers only look at the net amount transferred, they only correspond to ESA transactions after those transactions have also been ‘consolidated’ for the various levels of government (central, state and regional in the ESA) according to the ESA definition for consolidation. In the ESA, consolidation

is “*a method of presenting the accounts for a set of units as if they constituted one single entity (unit, sector, or subsector). It involves eliminating transactions and reciprocal stock positions and associated other economic flows among the units being consolidated*” (§20.152). The ESA prescribes the consolidation of “*current and capital transfers, such as central government grants to lower level of government*”. ESA government account transactions are consolidated when they are rearranged according to the government finance statistics (GFS) presentation, explained in Chapter 20 of the ESA

2. Both frameworks follow similar principles when treating cases where regional government is only responsible for disbursing funds from central government to local government. In the UOE, if “*regional governments are responsible for disbursing central government funds to local authorities and this disbursement is compulsory (i.e., regional governments may not retain the funds for their own use), the payments in question are classified as central government transfers to local rather than to regional governments*”. The ESA likewise instructs that “*when a unit carries out a transaction on behalf of another unit (the principal) and is funded by that unit, the transaction is recorded exclusively in the accounts of the principal*” (§1.78).
3. UOE intergovernmental transfers do not include those funds which are transferred from one level of government to another level of government but are not then spent on education that same financial year. This is to prevent double counting in total government expenditure. It would be considered as double counting if an intergovernmental transfer from central to local government is included in total government expenditure one year even though the local government does not spend these funds on education that year, then these same funds are included in total government expenditure the following year because the local authority spends the funds on education the following year. The UOE manual gives the following example to illustrate how to implement the rule that every transfer from one level to another level needs to be reported as expenditure at the level of government receiving the funds (not direct quote):

The regional authorities spend from their own sources 100 million LCU on educational institutions, and receive an additional 200 million LCU as transfers from the Ministry of Education for expenditure on educational institutions. The ministry also spends 50 million LCU directly on educational institutions. In that case 200 million LCU should be reported in as a transfer from central to regional educational institutions and 50 million LCU as central government direct

expenditure. The total expenditure of central and regional governments on educational institutions will be calculated as to 350 million LCU.

ESA inter-governmental transfers include transfers of funds which are not then spent on education in the same financial year as the transfer is made.

6.2.4. Mapping (theoretical) – UOE transfers from government to households mapped to ESA transactions

In the UOE framework, transfers to household from government sources comprise:

- Public scholarships and other public grants (UOE manual Section 3.7.2.2.4.1) and
- Public student loans (UOE manual Section 3.7.2.2.4.2)

Both types of transfer must be attributed to the level of government directly responsible for providing funds to students, even if another level of government ultimately covers some or all of the cost. For example, if students receive loans from regional authorities, who in turn are reimbursed fully or partly by the central government, the loans should still be reported as coming from regional governments. ⁽¹⁴⁾

Government scholarships that are channelled through educational institutions for administrative purposes are considered government transfers to students.

Public Scholarships and other public grants includes:

- **Public scholarships and grants** which are: *“public scholarships and all kinds of similar public grants, such as fellowships, awards and bursaries for students. Government scholarships that are channelled through educational institutions for administrative purposes are considered government transfers to students.”*
- **Special public subsidies in cash and in kind**, which are *“all those transfers to households that are linked to specific spending by students and are contingent upon the student status”.*

They include special subsidies for transport, medical expenses, book and supplies, social and recreational purposes, study abroad (including tuition and other fees paid to institutions abroad) and other special subsidies.

Special public subsidies in kind to households are only those subsidies which enable students to access educational goods and services which are provided by entities which are not considered by UOE definitions to be an ‘educational institution’. Subsidies in kind which enable access to goods and services provided by educational institutions would be considered as government direct expenditure on educational institutions.

- **Family allowances or child allowances contingent upon student status**, which are *“the allowances that are contingent upon student status.”*

Public student loans include

- Student loans provided by the different levels of government. *“Students’ loans are reported on a gross basis – that is, without subtracting or netting out repayments or interest payments from the borrower (students or households). Thus, student loan expenditure represents the total value of loans paid by government to students during the reference year. The cost to government of servicing these loans (i.e. interest rate subsidies and the cost of default payments) is not included.”*

The UOE does not mention whether the cost of administration of the loans are included or excluded.

Student loans are reported as transfers to households even when the loan results in a direct payment to an educational institution to cover fees for the borrower.

UOE transfers from government to households can be mapped to the following ESA transfers from the sector general government to the sector households:

- Social benefits other than social transfers in kind (D.62), especially the part which is Social assistance benefits in cash (D.623)
- Social transfers in kind (D.63)
- Other capital transfers (D.99)

As well as the following asset of the government sector/ liability of the household sector:

- Loans (AF.4)

‘Public scholarships and grants’, family allowances which are contingent on student status, as well as the ‘cash’ part of ‘special public subsidies in cash and in kind’ can be mapped to the ESA transfer ‘Social benefits other than social transfers in kind (D.62) and in particular to ‘Social assistance benefits in cash’ (D.623). Social assistance benefits in cash (D.623) are *“current transfers payable to households by government units... which are not conditional on previous*

⁽¹⁴⁾ Changing the term ‘public’ to ‘Government’ in the UOE manual is under consideration as part of a review of the UOE manual.

payment of contributions and which are generally linked to an assessment of available income (ESA 2010 §4.85). ... Usually all members of resident households are entitled to apply for social assistance but the conditions under which it is granted are often restrictive. Frequently there is an assessment of available income including social insurance benefits, in relation to the perceived needs of a household” (ESA 2010 §17.05). Correspondence between these UOE and ESA transfers would occur where the restrictive conditions under which the social assistance is granted is based on the student status of the household member or recipient. In the ESA, Social benefits other than social transfers in kind (D.62) is also made up of Other social insurance benefits (D.622), which include “the payment of family, education or other allowances in respect of dependants” (ESA 2010 §4.104b).

The ‘in kind’ part of the UOE transaction scholarships and other grants which is ‘special public subsidies in cash and in kind’ can be mapped to part of the transactions categorised in the ESA as Social transfers in kind (D.63) which “*consist of individual goods and services provided for free or at prices that are not economically significant to individual households by government units and NPISHs, whether purchased on the market or produced as non-market output by government units or NPISHs.*” (ESA 2010 §4.108) However, both frameworks provide a list of examples around what should be included as either social transfers in kind (ESA) or special public subsidies in kind (UOE) which is not exhaustive and therefore allow room to interpretation around what should be included.

What are considered as ‘public student loans’ in the UOE can be mapped to the ESA financial asset/liability of

- ‘Loans’ (AF.4). In the ESA, loans (F.4) are considered a financial asset for the lender and a financial liability for the borrower (in this case the household).

And to the ESA transaction of:

- Other capital transfers (D.99). When student loans that are considered to be partially a grant because there is an expected level of non-repayment, or the government is subsidising the loan interest rates, then the percentage that is considered to be a grant is sometimes recorded as a capital transfer after transactions have been rearranged according to the GFS approach.

The following ESA transactions are not taken into account in the UOE transactions for student loans:

- ‘Interest’ (D.41). This is where the interest on student loans receivable by creditors and payable by debtors (households) would be recorded in the national accounts.
- ‘Currency and deposits’ (F.2). There is a transaction in currency and deposits recording actual payments of interest (F.2)
- ‘provisions for calls under standardised guarantees’ (F.66). Transactions involving guarantees on student loans are recorded here (ESA 2010 5.190). These are not included in the UOE definition of student loans.

6.2.5. Mapping (theoretical) – UOE transfers from government to other private entities mapped to ESA transactions

The UOE defines transfers and payments from government to other private entities in Section 3.7.2.2.4.3 of the UOE manual as

“government transfers and certain other payments (mainly subsidies) to other private entities such as commercial companies and non-profit organisations”. They include, for EXAMPLE:

- *Transfers to business or labour associations that provide adult education within the scope of the collection ⁽¹⁵⁾.*
- *Subsidies to private companies (or labour organisations or associations of such entities) for the provision of training at the workplace as part of combined school and work-based programmes, including apprenticeship programmes”; and,*
- *“Interest rate subsidies or defaults guarantee payments to private financial institutions that provide student loans”.*

Public to private transfers must be attributed to the level of government directly responsible for providing funds to other private entities, even if another level of government ultimately covers some or all of the cost. For example, if other private entities receive transfers from provincial (i.e. regional) authorities, who in turn are reimbursed fully or partly by the central government, the transfers should still be reported as coming from regional (i.e., provincial) governments.

UOE transfers from government to other private entities can be mapped to the following ESA flows from the general government to private sectors other than households:

- Social transfers in kind – market production purchased by general government and NPISHs (D.632)

⁽¹⁵⁾ A review of the UOE Manual to exclude these transfers is under consideration.

- Current transfers to NPISHs (this transaction is only relevant if the receiving unit is in the ESA sector non-profit institutions serving households) (D.751) Other subsidies on production (D.39)
- Investment grants (D.92)

Although the UOE framework uses the term ‘subsidies’ to define what should be included as part of transfers from government to OPEs, most of the UOE transfers from government to OPEs do not map to what *the ESA 2010 defines as Subsidies (D.3) (ESA 2010 4.30)*. This is because ESA Subsidies (D.3) excludes: *“payments made by general government to market producers to pay entirely, or in part, for goods and services that those market producers provide directly and individually to households in the context of social risks or needs to which the households have a right. These payments are included in... social transfers in kind — market production purchased by government and NPISHs (D.632).” (ESA 2010 4.38)*

When the UOE OPEs receiving funds are classified as NPISHs in the ESA, the UOE transfers from government to OPEs would be mapped to the ESA transaction of D.751. D.751 includes ‘assistance and grants from general government’ to NPISHs, although these are considered to be a minor part of the whole category D.751. The current transfers to NPISHs are mainly from households and only ‘to a lesser extent’ from other units such as public units. The definition of D.751 is *“current transfers to NPISHs include all voluntary contributions (other than legacies), membership subscriptions and financial assistance which NPISHs receive from households (including non-resident households) and, to a lesser extent, from other units.” (ESA 2010 4.125)*

When the UOE OPEs receiving funds are classified as corporations in the ESA, UOE transfers from government to OPEs would be mapped to the ESA transaction of D.632. In the ESA, D.632 Social transfers in kind – market production are defined as *“individual goods and services (a) in the form of reimbursements by social security funds of approved expenditures made by households on specific goods and services; or (b) provided directly to the beneficiaries by market producers from which general government purchases the corresponding goods and services.” (ESA 2010 §4.109)*.

There may be some parts of UOE transfers from government to OPEs which are mapped to “Other subsidies on production (D.39)” in national accounts. Additionally, some parts may also be mapped to Investment grants (D.92) - depending on how national data providers interpret the UOE manual instructions (e.g. whether to include subsidies on equipment in the amounts for government transfers to other private entities).

6.2.6. Mapping (theoretical) – UOE total government expenditure on education mapped to ESA transactions

In the UOE framework, total expenditure of government on education is calculated from:

- Transfers or other payments from governments to households and other private entities, if they are spent in the accounting year.
- Direct expenditure on educational institutions,

Total government expenditure on education in the UOE framework does not take into account intergovernmental transfers because, in order to be considered as education expenditure in the UOE framework, intergovernmental transfers need to be spent by the level of government receiving the funds. during the same accounting period/year as the funds were received. Therefore, all intergovernmental transfers will always also form either part of direct expenditure on educational institutions or part of transfers to households and other private entities by the receiving level of government.

Taking into account the analysis in Sections 6.2.1, 6.2.4 and 6.2.5, what the UOE defines as total government expenditure on education could be mapped, from a purely theoretical perspective, to the following transactions in the ESA:

All flows from the sector general government (before flows have been arranged according to the GFS presentation) to local KAUs engaged in the activity education as classified in NACE Rev 2 which are classified as part of the following economic categories:

- Intermediate consumption (P.2);
- Compensation of employees (D.1);
- Current transfers within general government (D.73);
- Current transfers to NPISHs (D.751);
- some items of investment grants (D.92) – (cf. §4.159);
- some parts of “other capital transfers (D.99) i.e. item (c) described as “Transfers between subsectors of general government designed to cover unexpected expenditure or accumulated deficits.”
- Gross fixed capital formation (P.51g).

Plus the following flows from the sector general government to the household sector, if they can be identified as for education:

- Social benefits other than social transfers in kind (D.62);
- Social transfers in kind (D.63);
- Other capital transfers (D.99).

Plus following asset of the government sector/liability of the household sector, if it can be identified as for education:

- Loans (AF.4).

Plus the following flows from the sector general government to all other sectors, if they can be identified as for education:

- Social transfers in kind — market production purchased by general government and NPISHs (D.632);
- Current transfers to NPISHs (D.751);
- Provision for call under standardized guarantees (F.66).

This is a purely theoretical mapping, and only statisticians with access to national accounts primary data may seek to identify these flows. Section 6.2.7 provides a more practical conceptual comparison of UOE total government expenditure and the existing national accounts aggregates for what is defined as general government expenditure for the COFOG function education.

6.2.7. Comparison (practical) – UOE total government expenditure on education and expenditure of the ESA sector general government for the COFOG function education

While Sections 6.2.1 and 6.2.3 to 6.2.6 examine the UOE definitions for government expenditure on education and consider how they would map to national accounts transactions if statisticians with access to national accounts flows were able to treat the data in particular ways, this section provides a more practical comparison between what the UOE defines as government expenditure on education and what is defined as expenditure of the general government sector for the COFOG function education in national accounts aggregates. While the previous sections were more theoretical, this section is more practical and based on national accounts aggregates which are already calculated at the national level and also published on the Eurostat database.

The economic categories which comprise expenditure of the ESA sector general government and may be classified by function according to the COFOG classification (where one of the functions is education) are listed in the table below.

TABLE 3**General Government Total Expenditure as listed in COFOG**

Economic categories for COFOG analysis	ESA 2010 transactions
gross capital formation + acquisitions less disposals of non-financial non-produced assets	OP5ANP (P.5+NP) uses
compensation of employees	D.1 uses
subsidies payable	D.3 negative resources (reported as positive amount in the tables)
property income payable	D.4 uses, consolidated
social benefits other than social transfers in kind and social transfers in kind - purchased market production, payable	D.6M (D.62 + F.632) uses
intermediate consumption + other taxes on production + current taxes on income, wealth, etc. + adjustment for the change in pension entitlements	OEC (P.2+D.29+D.5+D.8) uses
other current transfers payable	D.7 uses
capital transfers payable	D.9 uses
Total Government Expenditure = total of categories above	
Additional detail	
gross fixed capital formation	P.51g net acquisition
intermediate consumption	P.2 uses
other taxes on production + current taxes on income, wealth, etc. + adjustment for the change in pension entitlements	ORD (D.29+D.5+D.8) uses
social benefits other than STIK	D.62 uses
social transfers in kind – purchased market production	D.632 uses
investment grants payable	D.92 uses
final consumption expenditure	P.3
individual consumption expenditure	P.31
collective consumption expenditure	P.32

The transactions listed in the first part of the table as 'economic categories for COFOG analysis' are used to calculate total government expenditure. In COFOG, total government expenditure is defined according to ESA 2010 Chapter 8 (the sequence of accounts), paragraph 8.100, and Chapter 20 (the government accounts), paragraphs 20.76, 20.108 and 20.92.

The list of economic categories which make up total government expenditure in the ESA and classified according to purpose in COFOG is not calculated using the same list of economic categories that correspond to

UOE total government expenditure for education. First of all, total government expenditure in the ESA includes Interest (D.41) which is not part of what the UOE defines as government expenditure on education. Secondly the calculation does not take into account Loans (AF.4) or part of Provision for calls under standardized guaranteed (F.66), both of which are included in what the UOE defines as total expenditure of government on education. Loans (AF.4) and Provision for calls under standardized guaranteed (F.66) are not classified by COFOG functions.

The ESA total expenditure of general government for education minus Interest (D.41) may be compared to UOE total government expenditure for education minus government transfers classified as 'student loans'. It is possible to look at UOE total government expenditure for education minus government transfers for education classified as 'student loans' because the UOE framework classifies student loans as a specific subcategory of government expenditure for education. When comparing the amounts for government expenditure on education in the UOE and expenditure of general government for the COFOG function education in the national accounts, it is necessary to take into account:

- The UOE amount will include government expenditure on interest rate subsidies or defaults guarantee payments to private financial institutions that provide student loans while the ESA amount will not. This is because the ESA amount would not include the relevant part of 'Provision for call under standardized guarantees' (F.66) that corresponds to interest rate subsidies or defaults guarantee payments to private financial institutions that provide student loans.
- In the COFOG classification, total government expenditure is defined according to ESA 2010 Chapter 8 (the sequence of accounts), paragraph 8.100, and Chapter 20 (the government accounts), paragraphs 20.76 and 20.108. In this definition, transactions within the general government sector should be consolidated, where accounts are presented *"for a set of units as if they constituted one single entity (unit, sector, or subsector). It involves eliminating transactions and reciprocal stock positions and associated other economic flows among the units being consolidated"* (§20.152). This means that, the transactions between units which correspond to UOE sources of funds and UOE educational institutions will be consolidated in the economic categories classified by function in COFOG. This contrasts to the UOE definition of government expenditure for education which only takes into account the flows from government sources of funds to educational institutions and does not take into account any reciprocal flows back from educational institutions to government. Conceptually the use of consolidated transactions in COFOG would result in the ESA government expenditure being lower than the UOE government expenditure, especially because, in most countries, most or all UOE educational institutions would be classified as units within the general government sector. In practice, because the amount of expenditure from educational institutions back to sources of funds is negligible/nil in most countries, the consolidated

expenditures of UOE sources of funds on educational institutions would be almost the same/exactly as the unconsolidated expenditures from UOE sources of funds on educational institutions.

- In the UOE framework, expenditure from government sources on education includes transfers from International Agencies and Other Foreign Sources (IAOFS) for education which are channelled through government sources. According to ESA 2010 definitions, such expenditure would be included in the transactions of the rest of the world sector and would not form part of the expenditure of the sector general government. This is because the ESA 2010 prescribes that transactions are recorded as taking place between the principal parties involved even if they are channelled through e.g. government units as intermediaries.

Additionally, any such a comparison should take into account the differences in the accounting principles used between the two frameworks (Chapter 2), the differences in the scope of education defined in COFOG and in the UOE (Chapter 3) and the comparison between the UOE definition of government sources of funds and the ESA definition of the sector general government (Chapter 4).

6.3. Household expenditure on education in the UOE and ESA frameworks – comparison of concepts

This section does not provide a purely theoretical analysis of how UOE household expenditure on education would map to ESA transactions because there is a good correspondence between UOE household expenditure on education and the national accounts concept of household final consumption expenditure for the purpose education as classified in COICOP. This section therefore just provides the UOE definitions of household expenditure on education in Section 6.3.1 and how this compares with the ESA concept of household final consumption of education as classified in COICOP in Section 6.3.2.

UOE household expenditure on education could also be compared to the ESA calculations for household final consumption of the education service as classified in the CPA. However, as there is less correspondence here, this paper does not make a comparison.

6.3.1. UOE – household expenditure on education

In the UOE framework, household expenditure on education is calculated from:

“Transfers to households and students (public and private scholarships, grants, or loans)”,

“Fees paid by households for ancillary services furnished by educational institutions” and

“Costs borne by private households for the purchase of educational goods and services both inside or outside educational institutions.”

The UOE manual provides definitions for household payments to educational institutions and for household payments for educational goods and services purchased outside educational institutions.

Household payments to educational institutions is defined in Section 3.7.2.4.2 of the UOE manual. In most countries, fees paid to educational institutions represent the main form of household expenditure on education. These consist of:

- Tuition fees,
- Other fees charged for educational services (such as registration fees, laboratory fees, and charges for teaching materials) plus fees paid for lodging, meals, health services, and
- Fees paid for other welfare services furnished to students by the educational institutions.

Payments from students and households to institutions are reported as net amounts that is, after subtracting any scholarships or other forms of financial aid (such as reductions in tuition fees or waivers of fees) provided to students by the educational institutions themselves. For example, if the normal university tuition fee is USD 2,000 per student but some students are offered free tuition or charged only USD 1,000, then only the reduced amount actually paid by students should be included as part of household expenditure on educational institutions, not the hypothetical full tuition fees.

Scholarships, loans, and other financial aid to students from governments or other private entities are not netted out, even if such aid is administered by, or passed through, the institutions.

Student/household payments to public educational institutions include tuition fees that the families of students enrolled in public educational institutions are paying to regional or local government rather than directly to the educational institutions. But, in order to avoid double counting of such payments, the tuition fees received by governments are not counted as part of government expenditure on the institutions in question. For example, the tuition fee paid by an upper secondary student attending a municipally operated school to the municipality is counted only as student/household tuition fee paid to a public institution. It should not also be counted as part of the municipality's expenditure on upper secondary schools.

Figure 3 illustrates how household expenditure is calculated by UOE data compilers.

FIGURE 3

Household expenditure – UOE

	Scholarship/grant from:		Tuition fees	Government	Household	Educational institution	Household expenditure total
	Government	Educational Institution					
Situation 1	No	No	1 000	0	1 000	0	1 000
Situation 2	Yes (500)	No	1 000	500	500+500*	0	1 000
Situation 3	No	Yes	(500)	1 000	500	500	500

* Household own resources + scholarship from government

Student or household expenditure related to education that occurs outside institutions is defined in Section 3.7.1.2 of the UOE manual. It includes:

- Educational goods and services purchased outside institutions, in the free market
- Student living costs if they are subsidised through financial aid to students by public or private entities. The

rationale for including these subsidies is that in many countries, public and private scholarships, grants, or loans are provided to students not primarily or exclusively to cover the tuition fees charged by educational institutions but rather to subsidise student living expenses. It is therefore desirable to capture this expenditure in order to maintain a complete picture of total investment by public and other private entities in education.

The list of examples of household expenditure on educational services and goods purchased outside educational institutions is provided in Section 5.1 of this paper.

It excludes:

- Student foregone earnings,
- Expenditure on student living costs outside educational institutions which are not subsidised through financial aid to students by public or other private entities.

6.3.2. Comparison (practical) – UOE household expenditure on education and final consumption expenditure of the ESA sector households for the COICOP function education

Total expenditure from UOE household sources on education can be mapped to the ESA transaction of:

- Final consumption expenditure (P.3), which *“consists of expenditure incurred by resident institutional units on goods or services that are used for the direct satisfaction of individual needs or wants or the collective needs of members of the community”* (§3.94).

All household consumption expenditure are defined as individual (specified in §3.103 of the ESA) and so for households the transaction would just consist of *“expenditure incurred by resident institutional units on goods or services that are used for the direct satisfaction of individual needs or wants”*. It consists of the share of expenses on goods or services remaining to be paid by households after possible reimbursements. ⁽¹⁶⁾ Household consumption of social transfers in kind from general government or NPISHs are not included in the transaction final consumption expenditure of households. Social transfers in kind are included in the ESA calculation for final individual consumption expenditure of the sector general government and final individual consumption expenditure

of the sector NPISHs. Likewise, in UOE definitions, the calculation of household expenditure on education does not involve household consumption of educational goods and services provided free of charge by other sources of funds.

What is defined in the UOE framework as household expenditure on education does not correspond to the ESA transaction of Actual final consumption expenditure (P4). Actual final consumption expenditure *“consists of the goods or services that are acquired by resident institutional units for the direct satisfaction of human needs, whether individual or collective”* (§3.100). This means that, in addition to the final consumption expenditure on goods and services used for the direct satisfaction of individual needs or wants, actual households final consumption also includes the expenditures of NPISHs and general government on social transfers in kind consumed by households; it is the sum of household final consumption expenditure, government individual consumption expenditure and NPISHs final individual consumption expenditure.

The UOE calculation for total household expenditure for education may be compared to the national accounts calculation of final consumption expenditure of the sector households for the purpose of education as defined in the COICOP classification.

A difference between the two calculations is that UOE household expenditure for education excludes the living expenses of students (costs of housing, meals, clothing, recreation, etc.) when they are not subsidised by government transfers to households – the UOE manual specifies that UOE expenditure data exclude: *“Expenditure on student living costs outside educational institutions which are not subsidised through financial aid to students by public or other private entities”* – while the ESA definition of final consumption expenditure of households does not exclude expenditure which has not been subsidised by transfers to households from the general government sector.

Additionally, any such comparison should take into account the differences in the UOE definition of households and the ESA definition of the household sector (Chapter 4), particularly noting the differences in geographical scope (Chapter 2), as well as the differences in the how the scope of education is defined in the UOE and in the COICOP classification (Chapter 3).

⁽¹⁶⁾ Definition taken from <https://www.insee.fr/en/metadonnees/definition/c1322>

6.4. Expenditure of UOE other private sources on education – mapping to ESA transactions

This section is a purely theoretical analysis of how UOE definitions of expenditure from other private sources/entities (OPEs) on education would correspond to transactions in the ESA if statisticians with access to national accounts were able to treat the data in specific ways. This section does not include a practical comparison of how the calculation of UOE expenditure from other private sources on education corresponds to similar national accounts aggregates which are calculated and published on a regular basis because such national accounts aggregates do not exist.

The final consumption expenditure of NPISHs on the education service as classified in the CPA is a national accounts concept published on a regular basis but a comparison is not made between this concept and UOE expenditure of OPEs on education because the UOE framework does not differentiate between expenditure of OPEs which would correspond to units in the sector NPISH and expenditure of OPEs which would correspond to units classified as corporations (see Chapter 4). Additionally, final consumption expenditure of NPISHs may be classified according to the COICOP purpose education, but a comparison is not made between this concept and UOE expenditure on OPEs because final consumption expenditure of NPISHs for the COICOP function education is not calculated on a regular basis.

6.4.1. Mapping (theoretical) – UOE payments from other private sources to educational institutions mapped to ESA transactions

Section 3.7.2.4.3.1 of the UOE manual states that direct payments by other private entities to educational institutions are composed by:

- Contributions or subsidies to vocational and technical schools by business or labour organisations;
- Payments by private companies to universities under contracts for research, training, or other services;
- Grants to educational institutions from non-profit organisations, such as private foundations;
- Charitable donations to educational institutions (other than from households);

- Rents paid by private organisations; and earnings from private endowment funds;
- Expenditure by private employers on the training of apprentices and other participants in mixed school- and work-based educational programmes;
- Public subsidies to other private entities for the provision of training at the workplace.

Section 3.7.2.4.1 of the UOE manual also specifies that if a public or private university earns interest on its investments or obtains rental income by leasing buildings or land, the interest receipts or rental payments should be classified as funds from “other private entities”.

If statisticians using national accounts can identify flows from the sectors NPISH or other private sectors to local KAUs engaged in the activity education as classified in NACE Rev 2, UOE direct expenditure for education from other private sources could be mapped to flows which form part of the economic categories listed below. Reciprocal flows from local KAUs engaged in the activity education back to the units which correspond to sources of funds in the NPISH or other ESA sectors would not be taken into consideration.

- Intermediate consumption (P2). All parts of what the UOE defines as direct expenditure by other private entities on educational institutions can be mapped to this transaction apart from earnings from endowment funds and perhaps the parts of what the UOE defines as ‘rents’ which would constitute ‘property income’ as defined in the ESA 2010 i.e, property income from leasing land. Where expenditures classified as ‘rents’ in the UOE correspond to what the ESA defines as ‘rentals’ (property income from leasing buildings), the transactions may be mapped to Intermediate consumption (P.2) – see the next bullet point on Rent (D.45) for further detail.
- Rent (D.45) which is ‘rent on land’. In the ESA, “*The rent received by a landowner from a tenant constitutes a form of property income*”, and “*income receivable by the owner of a natural resource for putting the natural resource at the disposal of another institutional unit*” is considered as Rent (D.45) (ESA 2010, 4.72). The ESA specifies that “*Rents on land do not include the rentals of buildings and of dwellings situated on it; those rentals are treated as the payment for a market service provided by the owner to the tenant of the building or dwelling, and are recorded in the accounts as the intermediate or final consumption of the tenant. If there is no objective basis on which to split the payment between rent on land and rental on the buildings situated on it, the whole amount is treated as rent when the value of the land is estimated to exceed the value of the buildings on it and as rental otherwise.*” (ESA 2010, 4.73) The part

of direct expenditure from other private entities which is rents might correspond to the ESA transaction Rent (D.45) in certain cases where it does not correspond to Intermediate consumption (P.2).

- Property income (D.4). The part of direct expenditure from other private entities which is 'earnings from endowment funds' can be mapped to this transaction.

6.4.2. Mapping (theoretical) – UOE transfers from other private sources to households mapped to ESA transactions

The UOE framework defines transfers from other private sources to households in Section 3.7.2.4.3.5 of the UOE manual as including:

- Scholarship and other grants
- Student loans.

"Scholarships and other grants provided to students by other private entities... include scholarships provided by businesses and religious or other non-profit organisations."

Student loans are considered as transfers from other private entities to households if they come from *"banks and other private lenders... even if such loans are guaranteed or subsidised by government, or made through programmes of private lending organised by the government. Like the government loans, private loans must be reported as gross amounts, without the subtraction of payments of interest or repayments of the principal by the borrowers... public subsidies related to private loans that are guaranteed or subsidised by the government, or made through programmes of private lending organised by the government, must also be reported as public subsidies to other private entities"*.

Student loans are reported as transfers to households even when the loan results in a direct payment to an educational institution to cover fees for the borrower.

If the UOE transfers from OPEs to households correspond to transactions from the ESA sectors financial corporations or non-financial corporations to the ESA sector households, then:

- UOE Scholarships and other grants from OPEs to households will be found under the ESA transaction of Other miscellaneous current transfers (D.759). The transaction 'other miscellaneous current transfers' includes *'sponsoring by corporations if those payments cannot be regarded as purchases of advertising or other*

services (for instance, transfers for a good cause, or scholarships)' (4.138g, ESA)

If the UOE transfers from OPEs to households correspond to transactions from the ESA sectors non-profit institutions serving households or general government to the ESA sector households, then:

'Scholarships and grants' correspond to the expenditures categorised in the ESA under the transaction 'social assistance benefits in cash' (D.623). Social assistance benefits in cash (D.623) are *"current transfers payable to households from government units and NPISHs which are not conditional on previous payment of contributions and which are generally linked to an assessment of available income... (ESA 2010 \$4.85) Usually all members of resident households are entitled to apply for social assistance but the conditions under which it is granted are often restrictive. Frequently there is an assessment of available income including social insurance benefits, in relation to the perceived needs of a household"* (\$17.05). Correspondence would occur where the restrictive conditions under which the social assistance is granted is based on the student status of the household member or recipient.

In both cases, what are considered as 'student loans' in the UOE would be categorised as the ESA financial asset/liability of

- 'Loans' (AF.4). In the ESA, loans (AF.4) are recorded as a financial asset for the lender and a financial liability for the borrower (in this case the household).

And the ESA transaction of:

- Capital transfers. When student loans that are considered to be partially a grant because there is an expected level of non-repayment, or the government is subsidising the loan interest rates, then the percentage that is considered to be a grant is sometimes recorded as a capital transfer after transactions have been rearranged according to the GFS approach.

The following ESA transactions are not taken into account in the UOE transactions for student loans:

- 'Interest' (D.41). This is where the interest on student loans receivable by creditors and payable by debtors (households) would be recorded in the national accounts.
- 'Currency and deposits' (F.2). There is a transaction in currency and deposits recording actual payments of interest (F.2)
- 'Provisions for calls under standardised guarantees' (F.66). Transactions involving guarantees on student loans are recorded here.

6.5. Expenditure of UOE international sources on education – mapping to ESA transactions

This section is a purely theoretical analysis of how UOE definitions of expenditure from International and other foreign sources (IAOFS) on education would correspond to transactions in the ESA if statisticians with access to national accounts were able to manipulate the data in specific ways.

6.5.1. Mapping (theoretical) – UOE direct expenditure from international sources mapped to ESA transactions

If statisticians using national accounts can identify flows from the rest of the world sector to local KAUs engaged in the activity education as classified in NACE Rev 2, UOE direct expenditure for education from IAOFS could be mapped to the flows which form transactions listed below:

- other miscellaneous current transfers (D.759) from the rest of the world;
- some items of “investment grants (D.92) – (\$4.152, ESA 2010)” and some parts of “other capital transfers (D.99) (\$4.164, ESA 2010);

- current transfers from the rest of the world to NPISHs (D.751) (this transaction is only relevant where if the UOE educational institution corresponds to an institutional unit in the ESA sector non-profit institutions serving households). (\$4.125, ESA 2010)

6.5.2. Mapping (theoretical) – UOE transfers from international to government sources mapped to ESA transactions

The UOE framework does not give a detailed definition of what constitutes transfers from IAOFS to government. They are defined simply as: ‘Funds from international sources paid to governments’ and ‘Transfers of funds from international sources to central, regional, and local governments’. One example given is ‘a transfer of education funds from the European Union to a provincial (i.e. regional) authority’.

UOE transfers from IAOFS to government sources can be mapped to the ESA transactions:

- Current international cooperation (D.74) (ESA \$4.121);
- Investment grants (D.92);
- Other capital transfers (D.99).



Nature of expenditure of UOE educational institutions – mapping and comparison to ESA transactions and concepts

Sections 7.1 to 7.6 of this chapter provide a theoretical analysis of how expenditure of educational institutions as defined in the UOE framework would map to expenditure transactions in the ESA 2010. As explained in Chapter 5, the concept of educational institutions comes closest to local kind of activity units engaged in the activity education (local KAUs). Therefore, the theoretical analysis in this chapter looks at how UOE expenditure of educational institutions could be mapped to expenditure transactions of the industry education even though such a concept – expenditure of the industry education – does not exist in the national accounts.

The theoretical mappings made in Sections 7.2.1 and 7.2.2 are more detailed than in Chapter 6 because of the fact that they also can support a more practical comparison of UOE expenditure with national accounts aggregates that are calculated and published on a regular basis i.e.:

- Section 7.2.1 could be used to support a comparison of UOE expenditure of educational institutions on staff compensation and the concept of the compensation of employees of the industry education as it is in supply, use and input-output tables.
- Section 7.2.2 can be used to support a comparison of UOE amounts for other current expenditure of educational institutions other than staff compensation and the concept of intermediate consumption of the industry education as it is in supply, use and input-output tables.

Section 7.7 of this chapter provides a practical comparison of UOE total expenditure of educational institutions with the output of the industry education.

7.1. UOE – nature of expenditure of educational institutions

The UOE defines different forms of expenditure of educational institutions – and refers to this as the nature of expenditure of educational institutions. In the UOE framework, such expenditure is referred to as expenditure of/on educational institutions in order to make clear that countries should include both expenditure by the institutions themselves (e.g. salaries paid by a fiscally autonomous university) and expenditure by governments on, or on behalf of, the institutions (e.g. salaries paid by a national education ministry directly to the individual teachers employed in public or private schools).

In the UOE framework, the nature of expenditure of educational institutions may be:

- Current expenditure, consisting of:
 - Expenditure on compensation of personnel, which may be further subdivided into expenditure on compensation of personnel which is for:
 - › Teaching staff;
 - › Non-teaching staff.

or subdivided into expenditure on compensation of personnel (teaching + non-teaching staff) which is for:

 - › Salaries;
 - › Retirement.
 - Expenditure on other (non-personnel resources), which may be further subdivided into expenditure which is for:
 - › Contracted and purchased services;

- › Other resources;
- › Required payments other than expenditure on educational resources and services.
- Capital expenditure

Total expenditure of educational institutions is defined as current and capital expenditure. Two types subcategories are defined as forming part (but not all) of total expenditure of educational institutions. These are:

- Expenditure on ancillary services;
- Expenditure on R&D activities.

7.2. Current expenditure in the UOE and ESA frameworks – comparison and mapping

Current expenditure is “expenditure on goods and services consumed within the current year, i.e. expenditure that needs to be made recurrently in order to sustain the production of educational services.

Minor expenditure on items of equipment, below a certain cost threshold, is also reported as current spending” (Section 3.7.3.3, UOE manual).

Current expenditure is broken down in two main categories:

- Staff compensation;
- Current expenditure other than compensation of personnel.

7.2.1. Mapping – UOE current expenditure on staff compensation mapped to ESA transactions

Current expenditure on staff compensation defined in the UOE has the following components:

- Salaries: “gross salaries of educational personnel, before deduction of taxes, contributions for retirement or health care plans, and other contributions or premiums for social insurance or other purposes” (Section 3.7.3.3.1.1, UOE manual).
- Expenditure on retirement i.e. pension schemes: is defined, in principle, as the actual or imputed expenditure by employers or third parties (e.g. social security agencies, pension agencies or finance ministries) to finance retirement benefits for current educational personnel. Pension contributions made by the employees themselves, whether deducted automatically from

their gross salaries or otherwise, are **not included** in retirement expenditure. The reference to third parties is included to cover situations in which costs of retirement are not borne by the employers directly but rather by public authorities, such as social security or pension agencies or finance ministries (Section 3.7.3.3.1.1, UOE manual).

- Expenditure on other non-salary compensation: “(fringe benefits) includes spending by employers or third parties on employee benefits other than pensions. These benefits may include such things as health care or health insurance, disability insurance, unemployment compensation, maternity and childcare benefits, other forms of social insurance, non-cash supplements (e.g. free or subsidised housing), free or subsidised child care, and so forth. The list of employee benefits varies from country to country, and often between sectors or categories of personnel within the same country” (Section 3.7.3.3.1.1, UOE manual).

The total of what the UOE defines as current expenditure on staff compensation corresponds to the total of the ESA transaction ‘compensation of employees’ (D.1).

Compensation of employees in ESA 2010 is defined as “the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during an accounting period” (§4.02).

Compensation of employees is made up of the following components:

- wages and salaries (D.11). This is made of the components:
 - a. wages and salaries in cash;
 - b. wages and salaries in kind.
- employers’ social contributions (D.12). The components of this are:
 - a. employers’ actual social contributions (D.121):
 - i. employers’ actual pension contributions (D.1211);
 - ii. employers’ actual non-pension contributions (D.1212).
 - a. employers’ imputed social contributions (D.122):
 - i. employers’ imputed pension contributions (D.1221);
 - ii. employers’ imputed non-pension contributions (D.1222).

While the total of the UOE transaction ‘staff compensation’ corresponds to the total of the ESA transaction ‘compensation of employees’, the correspondence of components of the two transactions is not clear from the names alone. For example, what the UOE describes as salaries doesn’t correspond directly to what the ESA

describes as ‘wages and salaries’ (D.11). Instead, the UOE transaction ‘salaries’ as well as part of the UOE transaction ‘other non-salary compensation’ corresponds to the ESA transaction of ‘wages and salaries’. The rest of this section will go through each of components that make up the UOE transaction ‘staff compensation’ and detail how they correspond to the different parts of the ESA transaction ‘compensation of employees’ (D.1).

What is defined in the UOE as ‘**salaries**’ corresponds to what is described in the ESA as ‘wages and salaries in cash’. ‘Wages and salaries in cash’, which form part of the ESA transaction ‘wages and salaries’ (D11), ⁽¹⁷⁾ are defined as follows:

“Wages and salaries in cash include social contributions, income taxes, and other payments payable by the employee, including those withheld by the employer and paid directly to social insurance schemes, tax authorities, etc. on behalf of the employee, (...) e.g. basic wages and salaries payable at regular intervals; enhanced payments, such as payments for overtime, night work, weekend work, disagreeable or hazardous circumstances; cost of living allowances, local allowances and expatriation allowances; bonuses or other exceptional payments; allowances for transport to and from work (...)” (§4.03);

Both manuals specify that salaries in cash are recorded as gross salaries – in particular that they should include expenditure which is automatically deducted from salaries to be transferred to social insurance schemes.

What is defined in the UOE as ‘**expenditure for retirement**’ corresponds to the combined ESA transactions of:

- Employers’ actual pension contributions (D.1211);
- Employers’ imputed pension contributions (D.1221);

Both the UOE and the ESA differentiate between actual and imputed retirement expenditure of employees. The frameworks correspond in how they instruct for pensions expenditure to be calculated i.e. if the expenditure should be imputed or not. The UOE framework describes how expenditure on retirement should be calculated for the three following types of pensions system:

- *“In a fully funded, contributory pension system, employers pay contributions for each of their current employees into a fund which is sufficient to pay the required pension when the employees retire. In this case, the expenditure on retirement*

to be reported equates to the current employer contribution to the pension fund;

- *In a completely unfunded retirement system, there are no on-going contributions into a fund by the employer and instead the government meets the cost of retirement as it arises. This is the type of scheme (sometimes called “pay as you go”) used to provide pensions for civil servants in many countries. In this case, the expenditure on retirement must be estimated or imputed;*
- *Likewise, in partially funded systems where employers contribute to a retirement system but the contributions are inadequate to cover the full costs of future pensions, it is necessary to impute the contributions which make-up the short fall. Thus, retirement expenditure is the sum of actual employers (or third party) contributions and the imputed contribution necessary to cover the projected funding gap”* (Section 3.7.1.1.3.8, UOE manual).

What the UOE describes as fully funded, contributory pension system corresponds to the ESA’s definition of defined contribution schemes. In the ESA 2010, expenditure of employers on defined contribution systems are measured as Employers actual pensions contributions (D.1211). Both the UOE and the ESA prescribe that the expenditure on such retirement schemes should not be imputed but calculated based on the current employer contribution to the pension fund. There may be a difference in how expenditure on operating such schemes are measured because the ESA provides additional instruction in cases where defined contribution schemes are operated by employers, detailing that in that case ‘the costs of operating the scheme are treated as an imputed contribution payable to the employee as part of compensation of employees’ (ESA 2010 §4.10). How expenditure on the operation of the scheme – where employers operate defined contribution schemes – are treated in the UOE data collection will depend on data compiler decisions in each country because there are no instructions in the UOE manual on whether to impute the costs of operating the scheme, and, if it is imputed, whether to include this expenditure in the transaction staff compensation for retirement or elsewhere.

What the UOE describes as a ‘completely unfunded retirement system’ corresponds to the ESA concept of defined benefit schemes which are not based on a pension funds but on a pay-as-you-go system. The UOE instructs that in systems like this, expenditure must be imputed. Similarly, in the ESA, there is the instruction that for all

⁽¹⁷⁾ The sum of all parts of what are included in the ESA’s definition of the transaction ‘wages and salaries’ (D11) does not correspond to the transaction ‘salaries’ in the UOE (or any single transaction in the UOE).

defined benefit schemes, 'there is an imputed contribution by the employer' (§4.10).

What the UOE describes as '*partially funded systems where employers contribute to a retirement system but the contributions are inadequate to cover the full costs of future pensions*' corresponds to defined benefit systems where an employer pays into a fund but that will not be enough to cover the benefits which the employer is obliged to pay (it is underfunded) and they must pay the shortfall. It also corresponds to all 'other non-defined contribution' schemes which are '*often described as hybrid schemes in that they combine the characteristics of defined contribution schemes and defined benefit schemes*' ⁽¹⁸⁾. For such schemes, the UOE instructs that '*retirement expenditure is the sum of actual employers (or third party) contributions and the imputed contribution necessary to cover the projected funding gap*'. The ESA instructs that in defined benefit systems where employers pay into a fund but it is underfunded, the shortfall should be imputed: "*As with a defined contribution pension scheme, the employer and/or employee may make actual contributions to the scheme in the current period. However, such payments may not be sufficient to meet the increase in the benefits accruing from the current year's employment. An additional contribution from the employer is, therefore, imputed to bring equality between contributions (actual and imputed) and the increase in current service entitlements (ESA 2010 §17.67)*". As hybrid schemes combine defined benefit and defined contribution provision, following ESA guidelines would mean imputing expenditure on the part of the scheme which is defined benefit.

The differences in reporting the transactions for expenditure on retirement may arise because the ESA provides detailed instructions on how to make imputations while the UOE manual does not give data compilers any instruction on how imputations should be made. Additionally, the UOE does not cover how imputations should be made for defined benefit schemes where employers pay into a fund that generates revenue which exceeds what is required to pay to employees as part of a pension (overfunded), while the ESA instructs that:

"As with a defined contribution pension scheme, the employer and/or employee may make actual contributions to the scheme in the current period. However, such payments may not be sufficient to meet the increase in the benefits accruing from the current year's employment. An additional contribution from the employer is, therefore, imputed to bring equality between contributions (actual and imputed) and

the increase in current service entitlements. Such imputed contributions are usually positive but it is possible for them to be negative if the sum of the contributions received exceeds the increase in current service entitlements" (ESA 2010 §17.67)

What the UOE defines as '**expenditure on other non-salary compensation**' corresponds to what is defined in the ESA as: 'wages and salaries in kind' (which forms part of the transaction 'wages and salaries' (D.11)), Employers' actual non-pension contributions (D.1212) and Employers' imputed non-pension contributions (D.1222).

The part of the UOE transaction of 'expenditure on other non-salary compensation' which is made up of '*non-cash supplements (e.g. free or subsidised housing), free or subsidised child care, and so forth*' corresponds to what is defined in the ESA as wages and salaries in kind.

In the ESA, "*Wages and salaries in kind consist of goods and services, or other non-cash benefits, provided free of charge or at reduced prices by employers, that can be used by employees in their own time and at their own discretion, for the satisfaction of their own needs or wants or those of other members of their households*" (§4.04).

The list of non-cash supplements (UOE term) and non-cash benefits (ESA term) enumerated in each framework might not correspond exactly, but both frameworks make it clear that the list provided is simply a guide rather than a definitive list. The UOE states that '*The list of employee benefits varies from country to country, and often between sectors or categories of personnel within the same country.*' The ESA describes the list of non-cash supplements as 'examples of wages and salaries in kind' to make clear the list is not definitive. That being said, both the examples of 'non-cash benefits' in the UOE correspond to one of the examples of 'non-cash supplements' in the ESA:

- The UOE gives the example of 'free or subsidised housing'. The ESA gives the example of '*own account and purchased housing or accommodation services of a type that can be used by all members of the household to which the employee belongs; (ESA 2010 §4.05b)*'
- The UOE gives the example of 'free or subsidised child care' and the ESA gives the example of 'child care for the children of employees'. (ESA 2010 §4.05h)

The rest of the items which make up the category 'other non-salary compensation' in the UOE – '*health care or health insurance, disability insurance, unemployment compensation, maternity and childcare benefits, other forms of social*

⁽¹⁸⁾ Technical compilation guide for pension data in national accounts, 2020 edition, Eurostat and the ECB (page 25)

insurance – correspond to the ESA transaction ‘employer’s non-pension contributions’ (D1212 + D1222).

In the ESA, ‘employer’s non-pension contributions’ are similarly defined (ESA 2010 §4.09) as *‘related to social risks and needs other than pensions, such as sickness* [listed in the UOE as health care or health insurance], *maternity* [listed in the UOE as maternity], *industrial injury* [listed in the UOE as health care or health insurance], *disability* [listed in the UOE as disability], *redundancy, etc. of their employees* [listed in the UOE as unemployment compensation]’. All the examples of types of social insurance listed in the UOE are also listed in what the ESA provides as examples of contributions *‘related to social risks and needs other than pensions’* apart from childcare benefits. Childcare benefits are listed in the UOE as an example of a type of social insurance but they are not listed in the ESA as an example of a type of employer’s non-pension contribution. However, as mentioned before, both frameworks make it clear that the examples provided do not make up a definitive list.

There may be differences in how UOE expenditure on forms of social insurance are calculated before they are included in the transaction ‘other non-salary compensation’ and how the ESA expenditure on social risks are calculated before they are included in the transaction ‘employer’s non-pension contributions’ (D1212 + D1222). This is because the ESA defines non-pensions contributions as comprising both actual and imputed non-pension contributions. The two transactions that make up non-pensions contributions are:

- Employers’ actual non-pension contributions (D.1212);
- Employers’ imputed non-pension contributions (D.1222).

The imputations required for non-pensions contributions are explained as follows:

Remuneration in terms of social benefits paid directly by employers to their employees is imputed for such employees and *“equal in value to the amount of social contributions that is needed to secure the entitlements to the social benefits that they accumulate. Such amounts take into account any actual contributions made by the employer or employee and depend not only on the levels of the benefits currently payable but also on the ways in which employers’ liabilities under such schemes are likely to evolve in the future as a result of factors such as expected changes in the numbers, age distribution and life expectancies of their present and previous employees. The values imputed for the contributions are based on the same kind of actuarial calculations that determine the levels of premiums charged by insurance enterprises”*. (ESA 2010 §4.10)

The UOE manual does not instruct that social benefits are imputed for a value equal to the amount of the social contributions required to secure the entitlements to the social benefits that they accumulate. It is up to UOE compilers in each country to decide whether to include such imputations and how to make these calculations. In practice, UOE data compilers do impute social contributions and include them in the transaction for expenditure on non-salary compensation (and impute them as recommended in the ESA manual).

7.2.2. Mapping – UOE current expenditure other than compensation of personnel mapped to ESA transactions

In the UOE, the category “current expenditure other than for compensation of personnel” includes *“all expenditure on goods and services used in education other than compensation of educational personnel”*. This includes *‘expenditure on contracted and purchased services’, ‘expenditure on other resources’* and *‘required payments other than expenditure on educational resources and services’*. These are defined in the UOE Section 3.7.3.1.2 as follows:

- ***“Expenditure on contracted and purchased services*** is *expenditure on services obtained from external providers, as opposed to services produced by the education authorities or educational institutions themselves using their own personnel. The services most commonly obtained under contracts are:*
 - *Support services, such as maintenance of school buildings;*
 - *Ancillary services, such as preparation of meals for students;*
 - *Rents paid for school buildings and other facilities: In a few rare cases, the educational authorities may even contract out teaching services by engaging a private company to operate certain schools. The providers of contracted services may be private companies or public agencies.*

An example of services under contracts is a private company that cleans school buildings;
An example of rent payments is when a general public building authority constructs school buildings and leases them to the education authorities.
- ***Expenditure on other resources*** covers the purchases of other resources used in education, such as teaching and learning materials, other materials and supplies, items of equipment not classified as capital, fuel, electricity, telecommunications, travel expenses, and insurance.

- **Required payments other than expenditure on educational resources and services.** For example, the property taxes that educational institutions are required to pay in some countries".

Additionally, Section 3.7.3.3.1.2 of the UOE manual specifies that **financial aid to students** is not included in the category 'current expenditure other than for compensation of personnel' "unless it is **provided by the institution's own funds in the form of a reduction in tuition fees or waivers of fees** and its value exceeds household payments to institutions".

Most of what the UOE framework describes as 'contracted and purchased services' can be mapped to the ESA transaction of 'intermediate consumption' (P.2). In the ESA 2010, intermediate consumption consists of "goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital. The goods and services are either transformed or used up by the production process". (ESA 2010 §3.88) So, for example, 'support services, such as maintenance of school buildings' (UOE) could be considered as intermediate consumption (P.2) to the extent that they are expenditure for "the regular maintenance and repair of fixed assets used in production". For expenditures called 'rents' in the UOE: while payments for rental of the building situated on land would be classified as intermediate consumption according to ESA definitions, payments for rent on land would be classified in rent (D.45).

Most parts of the UOE category '**expenditure on other resources**' can also be mapped to the ESA transaction intermediate consumption (P.2). There are no ESA transactions which correspond directly to the 'insurance' part of 'expenditure on other resources', which is considered by UOE data providers to be payments by policy holders to insurance companies. The ESA 2010 does not consider gross non-life insurance premiums paid by policy holders but considers that premiums paid plus the investment income earned on them (premiums supplements) equals the output of the insurance company plus net premiums that measure the risk insured. The part of the UOE transaction which is 'insurance' might still be calculated from the ESA insurance company transactions net premiums (D.71) and investment income attributable to insurance policy holders (D.441), although it would be important to take into account the differences in accounting principles used by the two frameworks when making such a calculation (See Section 2.4 for differences in accounting principles in the two frameworks). Investment income attributable to insurance policy holders (D.441) are deducted from gross premiums

net premiums (D.71). These insurance transactions would be found in the accounts of insurance companies.

Considering net non-life insurance premiums, issues of comparability among countries might arise when approaching the treatment of insuring public education buildings: what exactly is covered in such insurances (e.g. major disaster like flooding or fire) might vary on country-to-country basis, as some might treat such insurances by resorting to centrally held funds designated for this purpose (and possibly covering non-educational buildings, such as hospitals, as well). The UOE framework does not define whether any insurance premiums should be included (including in cases where there is a possibility to resort to centrally held funds in the event of major disasters). In the ESA 2010, the consumption of fixed capital includes a provision for losses of fixed assets as a result of accidental damage which can be insured against (for example buildings insured against the risk of fire or flood).

What is defined in the UOE framework as "**required payments other than expenditure on educational resources and services**" e.g. property taxes is not considered to be significant for most countries for educational institutions, especially for public institutions/units in the ESA government sector. In the ESA, property taxes are treated in "other taxes on production (D29)" and "current taxes on income, wealth, etc. (D5)" - see for example ESA 2010 §4.79a.

Financial aid to students, provided by the institution's own funds in the form of reduction in tuition fees and exceeding households payment to the institution, may be found under the transaction for other miscellaneous current transfers (D.759) in ESA 2010.

7.3. Capital expenditure in the UOE and ESA frameworks – mapping and comparison

Capital expenditure is "expenditure on assets that last longer than one year. It includes spending on construction, renovation and major repair of buildings and expenditure on new or replacement equipment. (It is understood that most countries report small outlays for equipment, below a certain cost threshold, as current rather than capital spending)".

"Capital expenditure represents the value of educational capital assets acquired or created during the year in question – that is, the amount of capital formation – regardless of whether the capital expenditure was financed from current revenue or by borrowing. In other words, capital outlays must be recorded in

the years in which they are made. The cost of depreciation of capital assets is not included."

Capital expenditure excludes "expenditure on debt servicing (e.g. interest payments, repayments of the principal). This means that neither interest payments nor repayments of the principal should be counted as part of capital or current spending" (Section 3.7.3.3, UOE manual).

What is defined in the UOE as capital expenditure corresponds to the positive values (ESA 2010 §3.125a) of gross fixed capital formation (P.51g). Gross fixed capital formation (P.51g) "consists of resident producers' acquisitions, less disposals, of fixed assets during a given period plus certain additions to the value of non-produced assets realised by the productive activity of producer or institutional units. Fixed assets are produced assets used in production for more than one year" (§3.124). It includes dwellings, other buildings and structures, machinery and equipment (such as ships, cars and computers). While the total ESA transaction of gross fixed capital formation 'consists of both positive and negative values' (§3.125), only the positive values of the transaction correspond to what is recorded as 'capital expenditure' in the UOE i.e. new or existing assets purchased (as well as new or existing fixed assets received as capital transfers in kind and new or existing fixed assets acquired by the user under a financial lease).

The UOE transaction of 'capital expenditure' may also correspond to some parts of other capital transfers (payable) (D.99p), some parts of acquisitions less disposals of valuables (P.53), some parts of acquisitions less disposals of non-produced non-financial assets (NP) and investment grants payable (D.92p) in cases where they are used for acquiring fixed assets. Acquisitions less disposals of non-produced non-financial assets (NP) include the following different sub-items depending on the kind of assets the acquisitions or disposals take place, and NP.2 is most frequent in education.

- NP.1 Acquisitions less disposals of natural resources;
- NP.2 Acquisitions less disposals of contracts, leases and licenses;
- NP.3 Purchases less sales of goodwill and marketing assets.

The cost of ownership transfer of non-produced non-financial assets is excluded in NP as it falls within Gross Fixed Capital formation (P.51g).

The following transactions in the ESA are not relevant to the UOE category 'capital expenditure': changes in inventories (P.52), Consumption of Fixed capital (P.51c) and Investment grants (payable) (D.92p). The category "changes

of inventories (P.52)" is not covered in the UOE as the UOE expenditure are recorded on a cash basis. Consumption of Fixed capital (P.51c) is not recorded in the UOE as the cost of the depreciation of capital assets is not included. Investment grants payable (D.92p) are excluded when they are the capital transfers from the government to other units (i.e. other resident or non-resident institutional units) which are not used to finance all or part of the costs of their acquiring fixed assets.

7.4. Expenditure on ancillary services in the UOE and ESA frameworks – comparison

In the UOE framework, expenditure of educational institutions on ancillary services is included in the amounts for current and capital expenditures of educational institutions.

As explained in Section 3.3.2.3.1 the UOE definition of ancillary services does not correspond to the ESA definition of ancillary activities.

Expenditure of educational institutions on what the UOE defines as ancillary services and the total expenditure of educational institutions would not map to different economic categories in the ESA 2010.

7.5. Expenditure on R&D services in the UOE and ESA frameworks – comparison

In the UOE framework, expenditure of educational institutions on R&D is included in the amounts for current and capital expenditures of educational institutions.

In the ESA 2010, the acquisition of R&D services is recorded as Gross fixed capital formation (P.51g).

7.6. Total expenditure of UOE educational institutions – mapping and comparison to ESA concepts and transactions

7.6.1. Mapping (theoretical) – Total expenditure of UOE education institutions mapped to ESA transactions

To sum up the purely theoretical mapping provided in Sections 7.2 to 7.5, a large part of the total expenditure of educational institutions as defined in the UOE framework would map to the following expenditures of local KAUs engaged in the activity education:

- Compensation of employees (D.1);
- Intermediate consumption (P.2);
- Positive values of gross fixed capital formation (P.51g).

And the rest would map to expenditure transactions of:

- Rent (D.45);
- Net premiums (D.71);
- Investment income attributable to insurance policy holders (D.441);
- Other taxes on production (D.29);
- Other miscellaneous current transfers (D.759);
- Current taxes on income, wealth, etc. (D.5);
- Some parts of other capital transfers (payable) (D.99p);
- Some parts of acquisitions less disposals of valuables (P.53);
- Some parts of acquisitions less disposals of non-produced non-financial assets (NP);
- Investment grants payable (D.92p).

7.6.2. Comparison (practical) – Total expenditure of UOE educational institutions and output of the industry education as classified in NACE

The total output of the industry education is the sum of the output of non-market and market producers.

The total output of a non-market producer (a local KAU) is valued at the total costs of production, i.e. the sum of:

- intermediate consumption (P.2);
- compensation of employees (D.1);
- consumption of fixed capital (P.51c);
- other taxes on production (D.29) less other subsidies on production (D.39).

For a market producer, the value of output is equal to the goods and services produced as output times the price receivable for these goods and services. The difference between the value of output and the costs of production is the net operating surplus.

To compare total output of the industry education with total expenditure of educational institutions:

- While the negative amounts of Consumption of fixed capital (P.51c) or Subsidies on production (D.39) act to reduce the amount for total output of both non-market and market producers, these two negative amounts are not taken into account in the calculation of UOE total expenditure of educational institutions.
- On the other hand, the price receivable for the goods and services of UOE educational institutions is not included in the UOE definition of expenditure of educational institutions, and the output of market producers is raised by the inclusion of this amount.

Any comparison of the output of the education industry and UOE expenditure on education would need to also take into account the difference in the scope of education in the UOE and in the NACE classification.

8

Annex 1 – Formal and non-formal education in ISCED

According to International Standard Classification for Education (ISCED 2011), all education can be classified into one of the four categories:

- Formal education;
- Non-formal education;
- Informal learning;
- Incidental or random learning.

ISCED 2011 Classification states that:

"ISCED 2011 covers formal and non-formal education programmes offered at any stage of a person's life... ISCED does not cover programmes of informal, incidental or random learning..."

"Formal education is education that is institutionalised, intentional and planned through public organizations and recognised private bodies, and – in their totality – constitute the formal education system of a country..."

"Institutionalised education occurs when an organization provides structured educational arrangements, such as student-teacher relationships and/or interactions, that are specially designed for education and learning."

Formal education programmes are "recognised as such by the relevant national education or equivalent authorities, e.g. any other institution in cooperation with the national or sub-national education authorities."

"Formal education consists mostly of initial education..."
Initial education is formal education that "typically takes place in educational institutions that are designed to provide full-time education for students in a system designed as a continuous educational pathway." Initial education is "the formal education of individuals before their first entrance to

the labour market, i.e. when they will normally be in full-time education."

"Formal education also includes education for all age groups with programme content and qualifications that are equivalent to those of initial education." This means that "vocational education, special needs education and some parts of adult education are often recognised as being part of the formal education system".

In some countries, the programme length might be an issue for qualifying programmes as formal education.

"Like formal education (but unlike informal, incidental or random learning), non-formal education is education that is institutionalised, intentional and planned by an education provider. The defining characteristic of non-formal education is that it is an addition, alternative and/or complement to formal education within the process of lifelong learning of individuals. It is often provided in order to guarantee the right of access to education for all. It caters to people of all ages but does not necessarily apply a continuous pathway structure; it may be short in duration and/or low-intensity; and it is typically provided in the form of short courses, workshops or seminars. Non-formal education mostly leads to qualifications that are not recognised as formal or equivalent to formal qualifications by the relevant national or sub-national education authorities or to no qualifications at all. Nevertheless, formal, recognised qualifications may be obtained through exclusive participation in specific non-formal education programmes; this often happens when the non-formal programme completes the competencies obtained in another context.

Depending on the national context, non-formal education can cover programmes contributing to adult and youth literacy and education for out-of-school children, as well as programmes

on life skills, work skills, and social or cultural development. It can include training in a workplace to improve or adapt existing qualifications and skills, training for unemployed or inactive persons, as well as alternative educational pathways to formal education and training in some cases. It can also include learning activities pursued for self-development and, thus, is not necessarily job-related.

The successful completion of a non-formal education programme and/or a non-formal educational qualification does not normally give access to a higher level of education, unless it is appropriately validated in the formal education system and recognised by the relevant national or sub-national education authorities (or equivalent)."

"ISCED 2011 recommends using the criteria of equivalency of content and/or resulting qualifications for the classification of non-formal education programmes. The equivalency of content relates non-formal programmes to formal programmes with similar content within ISCED. This would in principle allow for a classification of non-formal programmes by level. For example, where a programme of adult education satisfies the content-based criteria of ISCED level 1, it could be classified at ISCED level 1".

"Depending on the national context, non-formal education and training can cover programmes:

- i. contributing to adult and youth literacy and education for out-of-school children (alternative programmes to initial education); and
- ii. focused on life skills, work skills, and social or cultural development.

The latter can include:

- training in a workplace to improve or adapt existing qualifications and skills, and training for unemployed or economically inactive persons; and
- learning activities pursued for self-development (during a person's private (leisure) time)."

"The duration of a non-formal programme may be very short. In particular, job- and leisure-time training activities may cater to particular practical purposes related to the specific job or private-life context. A non-formal programme may therefore often be described as a (training) course.

Non-formal programmes are frequently directed to acquiring practical knowledge, skills or competencies in a concrete context and are therefore often focused less on theoretical learning. For example, a formal programme could teach computer science (e.g. for acquiring a recognised qualification as an I.T. engineer), whereas a non-formal programme may

teach specific I.T. programmes for practical computer use in job contexts"

"Informal learning does not fall within the scope of ISCED for measuring participation in education... Informal learning is defined as forms of learning that are intentional or deliberate, but are not institutionalised. It is consequently less organized and less structured than either formal or non-formal education. Informal learning may include learning activities that occur in the family, workplace, local community and daily life, on a self-directed, family-directed or socially-directed basis. Like formal and non-formal education, informal learning can be distinguished from incidental or random learning."

"ISCED also excludes incidental or random learning, i.e. various forms of learning that are not organized or that involve communication not designed to bring about learning. Incidental or random learning may occur as a by-product of day-to-day activities, events or communication that are not designed as deliberate educational or learning activities. Examples may include learning that takes place during the course of a meeting, whilst listening to a radio programme, or watching a television broadcast that is not designed as an education programme."

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Comparison of key concepts on education expenditure between the UOE farmework and the National Accounts framework

This working paper makes an inventory of the main conceptual differences between the methodology for the collection of data on expenditure on education in the UNESCO-UIS/OECD/EUROSTAT data collection on education statistics (the UOE data collection) and national accounts statistics compiled according to the ESA 2010. The aim of the inventory of the conceptual differences is to support statisticians to use national accounts data when compiling UOE data returns and to support users wishing to relate the education expenditure data from the UOE and national accounts aggregates. In this working paper, UOE definitions are examined (geographical scope, accounting principles, scope of education, sources of funds, educational institutions) before being compared to concepts in the ESA 2010. A theoretical analysis of how UOE expenditure transactions would map to ESA transactions is also offered, as well as more practical comparisons between UOE amounts for education expenditure and similar national accounts aggregates.

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