Paper

Measuring income in a globalized economy

Do we need a new framework?

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1. Introduction

"The methodologies governing the construction of economic statistics need to evolve along with the economy: what constitutes a satisfactory organizing framework at one time may subsequently cease to be so."
Sir Charles Bean, Independent review of UK economic statistics

This quote from the 'Bean-report' shows the discomfort with the present national accounts (NA) whether or not they are still the most appropriate framework for analyzing the present globalized economies on a macro and meso level. In many discussions, this discomfort is transposed to doubt on the usefulness of the main economic indicators of the NA like gross domestic product and its components, gross national income, etc. A doubt further fed by implausible growth rates of GDP and GNI.

In the last decades, the economy has evolved with the emergence of new technologies and new forms of service provision with the use of internet (as an appearance of digitalization) as a common characteristic (network economy). Next to digitalization, globalization, "a historic process of increasing interaction between national economies on a worldwide scale" (Stapel et al.), seems to have accelerated in recent years, related to the development of internet business and activities of multinational enterprises (global value chains). A special element in globalization concerning the MNE's, is the minimization of corporate taxes using various ways of shifting profits all over the world. Although this practice is not new and started already with the emergence of the first MNE's, the legal constructs set up to minimize taxes nowadays, can have substantial influence on economic statistics, as is clearly shown by the "Irish Case" (see [17]).

"The System of National Accounts (SNA) is the internationally agreed standard set of recommendations how to compile measures of economic activity in accordance with strict accounting conventions based on economic principles" (SNA 2008).

"The basic concepts and definitions of the SNA depend upon the economic reasoning and principles which should be universally valid and invariant to the particular economic circumstances in which they are applied" (SNA2008).

These quotes from the SNA2008 show both its strength and the weakness. The international agreed standard implies that (many) countries use similar accounting practices for compiling their national accounts, leading to results which can be compared.
On the other hand, adjustment of the strict accounting rules requires thorough international discussion before an agreement is reached an requires a long lead time, making the guidelines rigid. Given the economic reasoning and principles, the system is universally valid and invariant to economic circumstances. However, a question is whether or not the economic reasoning and principles are (still) adequate for describing and analyzing the present (worldwide operating) economy?

Although done for good reasons imputed (rent of owner occupied dwellings) and rerouted transactions (wages paid in case of illness to social premiums) appearing in the SNA and other deviations from real-world and bookkeeping transactions (insurance premiums, FISIM) complicates the interpretation and usability of NA-data by (relative) laymen and might hamper economic analysis by scholars.

Some examples:

- consumption of households includes imputed rents of owner occupied dwellings deflated with the price of (real) rents. The price index of consumption of households is influenced by this price change, while owner occupiers, often having long term mortgages with fixed rents don not face price changes in this respect and in the last years will face price decreases because of the low interest rates nowadays.
- In many areas of manufacturing companies try to avoid changes in prices by hedging and also (in conformity with IFRS) record hedged prices in their bookkeeping. In the national accounts current market prices have to be applied. This difference makes that companies do not recognize the NA-results as representing their economic situation.
- The use of adjusted claims for compiling the service component in insurances in order to avoid negative output of insurance industry can be seriously misleading. In incidental years of high claims due to, for example bad weather, insurance companies are facing losses and a raise of the premiums will be unavoidable. Contrary to that the NA will probably show a reasonable performing industry showing no need for an increase in premiums. In this case the strict applied production point of view of the NA results in a blurred picture of the actual economy and give raise to inadequate policy decisions.

At the heart of the SNA is the production of goods and services. The activity of production, restricted by the production boundary is therefore fundamental. This heart implies a focus on production processes and steers the concepts and variables and only one side of the way an economy operates is shown. Business models that companies apply in order to make money are not in scope and might shed a different light on an economy.

"For purposes of welfare of the citizens of a country, what matters is not what is produced within a country, but the incomes of the citizens of the country"

Stiglitz, Sen, Fitoussi: Report by the Stiglitz commission on the measurement of economic performance and social progress.

Coming from the Stiglitz position, income, or preferable a broader concept of disposable monetary resources, and realized uses in a certain period could be a starting point for an alternative accounting framework. Of course types of resources differ per type of economic agent. Typical resource types for households are for example wages and social benefits, while typical resources for companies and government are respectively turnover and taxes. Resources of one agent can be costs (uses) for another, with wages as an outstanding example.

For the national economy in which overlapping resources and uses are consolidated, the primary resources emerge from:

a. 'Productive' activities
b. Creation of money
c. Non-productive illegal activities like theft, burglary, etc.

The three items will be described below, but as this research is intended to explore some alternative options for the SNA, definitions of transactions etc. will not be discussed, but general ideas on the concerning transactions are taken as a starting point.

Ad a. ‘Productive activities’
In the SNA2008 production is understood to be a physical process, carried out under the responsibility, control and management of an institutional unit, in which labor and assets are used to transform inputs of goods and services into outputs of other goods and services.

From the point of view of disposable resources ‘productive’ activities are adjusted compared to the SNA, being based real-world transactions and extended to include other ways of ‘making money’ than the only the production of goods and services, for example trade in financial products. See chapter 3 for more details.

On the other hand imputed transactions in production (rent of owner occupied dwellings) are left out of this flexible system. Also rerouting of transactions are avoided.

Ad b. The “creation” of money
Bank of England: In the modern economy, most of the money takes the form of bank deposits. The principle way in which these bank deposits are created is through commercial banks making loans. Whenever a bank makes a loan, it creates a deposit in the borrower’s bank account, thereby creating new money.

Resources available from a loan of course inhibit a timing-issue as the loan has to be paid back in the future, but in the reporting period when the loan is effected, money (resources) are disposable for free spending. In later reporting years, resources for free spending are reduced by interest payment and loan repayment.

Ad c. Non-productive illegal activities like theft, burglary, etc.
Lay hold on goods and money without mutual agreement was ‘traditionally’ an activity in which two residents are involved. In that case the impact on balancing items for the total economy is zero. With the availability the internet international theft (of mainly money) by hacking accounts, phishing, etc. have a non-zero balance.

From the point of view of resources and uses rather than production and taking real-world transactions between economic agents (enterprises, households, government, Rest of the World) as a base, Statistics Netherlands (SN) started a research project to investigate the possibilities for developing a flexible accounting framework. A flexible framework for describing the economy makes it possible to stay aligned with changes in the institutional and operational settings in the economy without (directly) changing worldwide applied standards like the System of National Accounts (SNA). The development of a new, exhaustively and consistently defined accounting framework in all its details, is rather ambitious and not within reach of this explorative project. As a first step exploratory research will be carried out, starting with identifying and classifying the relevant transactions which determine disposable resources of economic agents. There are many types of resources which vary with the role of the economic agent in the economy. What for an employee is an income (wages), are costs for the enterprise. An important part of income results directly or indirectly from what could be called ‘productive’ activities. In this report this type of resources is explored using business models as a starting point. The business models are discussed in the context of digitalization and *globalization.*
The results of the analysis of the business models are embedded in a first draft of a flexible accounting system, which include also other types of resources. For that purpose lists of possible resources and uses of various types of economic agents are compiled and they are linked to present SNA-variables.

Chapter 2 pays attention to aspects of digitization and globalization. Chapter 3 discusses the way of making money (monetary resources) using business models as ‘income generators’. In the discussion of business models the impact of digitization and globalization is taken into account. In chapter 4 a rough sketch of an accounting framework in which business models, are embedded together with other types of resources and uses. Chapter 5 discusses the relation of the sketched framework with SNA-transactions. Chapter 6 presents a quantitative example of the framework for households, including the transformation to the SNA. In chapter 7 some conclusions and suggestions for further research are summarized.

2. Globalization and digitalization

Innovation and technological change are the wellspring of economic advancement. … These advances have also made possible new ways of exchanging goods and services, prompted the creation of new and disruptive business models, and made the location of economic activity more nebulous.
Sir Charles Bean, Independent review of UK economic statistics

Recent years have shown a rapid emergence of new technologies which changed the structure of economies in many ways and provided new products, new forms of the provision of services and intermediation, with digitalization being a common characteristic with the internet as its most important representative. New products include a.o. platforms that facilitate Peer-to-Peer transactions, such as AirBnB and Uber and 'free' services funded by advertising and 'Big data'. With platforms the typical roles of producers and consumers become unclear and traditional boundaries are getting blurred (Dollt, Konijn, Amhad, Schreyer).

Despite the scale of the digitalized economy, the effects are not always visible in the present accounting frameworks. For example, many digital services (Google, Facebook, Wikipedia) are provided without a market transaction between the (final) user and the producer, but influence consumer behavior enormously. The benefits for the provider of free services stem from advertisement and 'user data'. Recording of free services in an accounting framework is widely discussed (See for example Nakamura, Coyle) in order to get a better view on the impact on the economy.

Digitalization enforced globalization and not only led to new business models, but also influenced existing business models, in the sense that worldwide operation came in reach for enterprises operating only on the local market in the past.

Globalization is already a long time ongoing process, but seems to have accelerated in recent years. Fragmentation of production processes of multinational enterprises (MNEs) all over the world, already started many decades ago by outsourcing productive activities to low-wage countries and in many different ways, is still going on driven by cost reduction. A specific element within MNE's is the optimization of the overall corporate tax by an optimal allocation of profits over the world. Also this practice is not new and started with emergence of the first MNE's, but with transfer pricing and especially the allocation of intellectual property (being an important component of many present high tech products) possibilities for tax optimization are enlarged. Although tax-driven restructuring of MNE's seems only administrative, it can have substantial influence on economic statistics, as is clearly shown by the "Irish Case" (see [14], [24]).

Shifting of profits and intellectual property all over the world, both aspects of digitalization and globalization hamper the estimation of GDP and blur the view on the economy, in particular, the result may be volatile and lead to abrupt changes to the GDP. Consequently the use of NA-data for economic analysis and administrative purposes become more and more difficult. Next to that, it could undermine the public confidence in national accounts estimates.

3. Inventory of business models

A business model describes the rationale of how an organization creates, delivers, and captures value in economic, social, cultural or other contexts or in simple terms: how an organization planned to make money. There are many different business models for generating income by 'productive' activities.

In abstract terms six, more or less general, types of business models are distinguished, each of them having various 'sub-models'. Although the 'classification' of business models below show similarities with an industry classification on a very high level of aggregation, the idea of BM's differs substantially, as nor what is produced (product -industry dimension) nor the production process (industry dimension) is of no influence.

A. Production of goods
   The basic business model the production of goods seems quite homogeneous: making finished goods from raw materials. Nevertheless there are many different processes for the production of many different goods.
B. Trade in goods
   The basic business model for trade in goods seems quite homogeneous: purchasing and selling goods without further processing of these goods. Different types of trade (wholesale, retail) and various types of outlets (all from brick and mortar to e-commerce) can be distinguished.
C. Provision of non-financial services
   There is a great variety the provision of services and underlying business models in the range from 'direct' sales (for example restaurants) to 'free' services (for example google search) and crowd sourcing (for example Wikipedia).
D. Internet based business models
   With the commercial use of the internet new business models appeared and some existing business models can applied on a large (worldwide) scale. Models based on advertisement is an example of the latter. Platforms, freemium apps, and data selling are typically new business models made possible by digitalization.
E. Provision of financial services and trade in financial products
   Banking and insurance have their own specific business models based on interest flows, commission fees, premiums and claims. Investment banks trade in financial products on behalf of the bank and its clients, making this type of trade also a business model.
F. Renting out of movables, real estate and intellectual property rights
G. Other business models

There are of course always business models that do not fit in one of the above-mentioned categories. They will be discussed in a separate section. It also has to be noted that many companies apply more than one business models simultaneously.

With reference to the primary resources mentioned in the introduction nearly all business models can be linked to 'productive activities'. Only a specific part on the business models under heading E are involved in the creation of money. A business model for theft is part of category G.

Below most used business models are described in more detail. The impact of digitalization and globalization will be roughly discussed as well as the recording in the national accounts and issues concerning data collection.

A. Production of goods

Manufacturer
A manufacturer makes finished products from raw materials. The finished products can be both final products for direct use by consumers and semi-finished products for further processing by other producers (of goods). The manufacturer may sell the products directly to the customers or sell them to a wholesaler / distributor or retailer that sells them in the end to the customer.

A special subcategory within manufacturing are the so-called processors, who carry out (part of) the production process, similar to a traditional manufacturer, but do not own the raw materials nor the final products. Although the physical process is the same as a 'traditional' manufacturer, the business model for processors is not selling of products but receiving fees for the delivery of industrial services.

Impact of digitalization and globalization
Digitalization as such has no substantial influence on the basic business model of the manufacturer, other than being integrated in several stages of the production process. Automation using computers and computer driven machinery (robots) is already a long standing practice. Nevertheless digitalization opened via the internet a worldwide market for the manufacturer. Dedicated advertisement on various internet platforms, a website and e-commerce make it possible to address customers all over the world.
Next to that the service element incorporated in the sales of goods (for example maintenance) possibly becomes more important (see also the nickel and dime business model).

Also globalization has no substantial impact on the basic business model of the manufacturer. An important aspect of globalization concerns the production process. Outsourcing of (part of) the production process to low-wage countries is a way of reducing costs. Outsourcing can be done within an enterprise in which case a multinational enterprise (MNE) comes in existence or can be carried out by non-resident third party producers.
Within MNE's globalization can play a role in optimization of corporate taxes, by applying transfer prices for deliveries between affiliates in order to optimize the allocation of profits.

Recording in national accounts
The recording of transactions of the manufacturer in the national accounts (NA) is in theory straightforward. The sales of the produced goods adjusted for changes in inventories are the base for the estimate of production.
The production of the subcategory processors is recorded as fees for industrial services.
An issue with MNE's concerns international transactions in goods that are based on the change-of-ownership principle in the NA, which might differ from the legal ownership, and also differs from the crossing-the-border principle applied in foreign trade statistics.
Next to that, NA-guidelines state that intermediate consumption must be valued at market prices. In case of transfer pricing and adjustment to the required market value is necessary, implying differences in profits (and tax base) per country between the NA and the 'optimized' bookkeeping of the MNE's.

Data collection
Collection of data of the transactions of the basic business model is rather straightforward. Data on sales (survey based or administrative (VAT)) and changes in inventories are the main building blocks for the estimation of output in the NA. Globalization makes data collection of transactions more complicated, especially concerning economic ownership and transfer pricing (see for example Unece2015). The 'regulated' inconsistency between the definitions of foreign trade statistics (crossing the border) and NA (economic ownership) makes a consistent collection of data in specific cases nearly impossible.

B. Trade in goods

Trade in goods (general business model)
The basic business model for a trader is buying goods and reselling them without any further processing other than common trade-practices like (re)packing. The revenues of the trader are the trade margins defined as the difference between the price paid when purchasing a good and the price received when selling the good.

Trade has different appearances of which wholesale and retail trade are the most common. Next to that, the presentation of the trader may vary from brick and mortar to a web shop without any physical presence.

Wholesaler / Distributor
A wholesaler / distributor buys products from manufacturers and resells them to retailers, companies and (in exceptional cases) to consumers. The revenues of the wholesaler are the trade margin defined as the difference between the price paid when purchasing a good and the price received when selling the good.
The difference between a wholesaler and a distributor is that the latter buys and sells non-competing goods (only one brand) while a wholesaler buys and sells goods form different brands. Next to that, most distributors generally also provide a range of additional services, like product information, technical support, after sales services, credit, etc. to their customers.

Impact of digitalization and globalization
Digitalization has no substantial influence on the basic business model of the wholesaler. Nevertheless digitalization opened via the internet a worldwide market for the wholesaler including the option to have more variety in the offered products. Dedicated advertisement on various internet platforms and a web shop make it possible to address customers all over the world.
Also globalization has no substantial impact on the basic business model of the wholesaler. The main impact of globalization is that the wholesaler has a possibility for a worldwide market by worldwide advertisements and a web shop.

Recording in national accounts
The recording of the transactions in this business model in the national accounts (NA) is in theory straightforward. The purchases and sales of goods (the latter adjusted for changes in inventories) resulting in a trade margins as the estimate of production.

A special case requiring attention is merchanting. Goods purchased abroad and sold abroad without entering the country of residence of the wholesaler. These changes of ownership lead in the NA to imports and exports, while in foreign trade statistics, there will be no observation of trade flows, as the goods do not cross the border.

Collection of data
The collection of data for the transactions of the basic business model is rather straightforward. Data on purchases and sales (survey based or administrative (VAT)) and changes in inventories are the main building blocks for the estimation of output in the NA. The 'regulated' inconsistency between the definitions of foreign trade statistics and NA makes a consistent observation of data in case of merchanting nearly impossible.

Retailer
A retailer sells directly to consumers after purchasing the goods from manufacturers, distributors or wholesalers. The revenues of the retailer are the trade margins defined as the difference between the price paid when purchasing a good and the price received when selling the good.

Traditionally retail trade is focused on the local market. This is still true for the major part of retail trade (super markets, sales of food products, furniture, etc.). Nevertheless with the introduction of web shops for some types of products a worldwide market opened (also) for retail trade for a.o. books, cd's, DVD's, (accessories for) electronic products, etc.

Impact of digitalization and globalization
Digitalization has no substantial influence on the basic business model of the retailer. Nevertheless digitalization opened for some branches within retail trade a worldwide market via the internet. Dedicated advertisement on various internet platforms and a web shop make it possible to address customers all over the world.
Also globalization has no substantial impact on the basic business model of the retailer. The main impact of globalization is that some retailers can get a worldwide market by worldwide advertisements and a web shop.

Recording in national accounts
The recording of the transactions in this business model in the national accounts (NA) is in theory straightforward. The purchases and sales of goods (the latter adjusted for changes in inventories) resulting in a trade margins as the estimate of production.

Collection of data
Collection of data on the transactions of the basic business model is rather straightforward. Data on purchases and sales (survey or administrative (VAT)) and changes in inventories are the main building blocks for the estimation of output in the NA.

C. Provision of services

The provision of services includes many different appearances, ranging from transport, catering, legal services, IT-services, health services to hairdressing and undertaking. Also the basis for the payment of the provided services varies considerably, ranging from a fixed amount per service (catering), hourly rates (legal services) and subscription (magazines) to 'free' services (some local newspapers).
Next to that, the working area for services may differ. Many service providers are mainly focused on the local market, while others (can) operate in a worldwide market. Nevertheless the basic business model is similar in both cases. Table 1 gives an overview of types of services and the most applied base for charging their customers.

Table 1 The market of services and the base for charging customers.

Type	Price base
Public transport and storage	Amount per unit, rent
Air transport and land transport of go	Price per kilo
Transport of persons	price per kilometer
Accomodation and food	Amount per unit, rent
Publishing (newspapers)	Subscription
Telecom	Subscription
Renting of real estate	Rent
Legal services	Hourly rates
Economic advice, controllers	Hourly rates
Technical services	Hourly rates
R&D	Hourly rates
Travel agencies	Fee
Brokers / intermediaries	Fee
Security & cleaning	Hourly rates
Education	Amount per unit
Health	Amount per unit
Repair services	Amount per unit, subscription
Arts & recreation	Amount per unit
Other personal services	Amount per unit
Free services	Advertisments

Although the way of charging customers differs, two elementary types of business models for service providers come forward: a short-term model with direct payment and a long term binding of customers via subscription.

Short-term business model for service providers

Impact of digitalization and globalization
Digitalization has no substantial influence on the elementary business model. The internet, however, provides new options for reaching customers. Instead ordering on paper or per telephone, a web site can be used. Telecom providers can offer a broader set of services including streaming of video and music (see subscription model below).
Brokers / intermediaries traditionally provide services in order to negotiate deals between buyers and sellers of goods and supplier and users of labor. Each successful deal results in an income, which might be a percentage of the transaction or a fee for the hours worked, etc. With e-commerce a broker model came in existence for intermediation in monetary transactions like Paypal, receiving a percentage of each transaction.
Globalization in this part of services is mostly a consequence of possibilities created by digitalization.

Recording in the national account
The recording of the transactions of this business model is straightforward: revenues equal production and all mentioned activities are within the production boundary.

Collection of data
Collection of data (survey based or administrative (VAT)) of the transactions of the basic business model is rather straightforward. For international services, and especially when consumers pay directly to the provider the collection of data on international trade in services is highly problematic.

Subscription model
The subscription business model binds customers with a long-term contract and the providers get recurring revenues. Examples are newspapers, magazines, (some) repair services, Netflix.

Impact of digitalization and globalization
Digitalization has no impact on the basic business model. However, digitalization led to new ways of providing music, movies, tv-series, etc. via streaming services. From an initially local market (newspapers, magazines) this business model expanded to worldwide markets with the rise of internet.
Globalization in this part of services is mostly a consequence of possibilities created by digitalization.

Recording in national accounts
The recording in national accounts of subscription fees in straightforward. Revenues equal output and all activities are within the production boundary.

Collection of data
Transactions of (local) providers of newspapers, magazines, etc. can be captured by business statistics. International purchases are however hard to capture, because (at least part of them) will be direct payments by consumers to the provider of the streaming services (amongst others by credit card).

D. Internet based business models

With the commercial use of the internet, new business models appeared and some existing business models could be applied on a large scale. Models based on advertisement are an example of the latter. Platforms, freemium apps, and data selling are typically new business models made possible by digitalization.

Freemium
The Freemium business model is a typically internet based and thus a relatively recent model. With the freemium model companies offer basic services to the customers for free while charging a certain premium for extra add-ons, storage and/or skipping advertisements. The business model inhibits multiple schemes with various benefits for different customers. Generally, the basic service comes with certain restrictions or limitations, such as in-app advertisements, storage restrictions etc., which the premium versions will not have. Examples are Dropbox with a free storage of 2 GB storage and premiums for an increased limit, Spotify with a free version including advertisements and a premium version without ad interruption. Another example is computer software which offers free use of the basic program, but requires a fee to access advanced features.
Freemium products can have an additional source of income by the sales of user data that can be used for personalized advertising.

The freemium model is popular for online companies because it is not only a great marketing tool but also a cost-effective way to scale up and attract new users.

Impact of digitalization and globalization
The freemium model exists by the sake of internet. Having the internet as mode of operation, the freemium model has by definition a worldwide scope.

Recording in national accounts
Although a service is provided to consumers (and businesses), the delivery of the free basic service is outside of the production boundary of the SNA2008.
The revenues from in-app, sales, increased storage limits, the use of advanced option, the no ad interruption, etc. are straightforward recorded as output. Also the sales of user data has to be recorded as sales of 'databases' (and thus output) in the NA.

Collection of data
Taking only actual money transactions into account, observation of sales (from the company point of view) is straightforward. The freemium model will in generally include a large international component in its transactions, many of them directly with consumers. A correct observation of international trade in services linked to the freemium model will therefore hardly be possible.

Advertisement
In the advertisement model information, apps, etc. are provided without any charge, but include advertisements (see also Freemium). The revenues in this model stem from sales of advertisements. The advertisement business models exist already for a long time, for example on a local level with free newspapers, but expanded the rise of free products and services on the internet.
Just like the earlier times, these business models are popular with media publishers like YouTube, Spotify, News sites, etc. where the information is provided for free but are accompanied with advertisements.

Impact of digitalization and globalization
Digitalization does not have substantial influence on the advertisement business model. Digitalization, however, expanded the possibilities for this type of business model from the local media to worldwide exploitation in various forms (information, platforms and apps).
A prerequisite for the digitized advertisement model is the possibility to provide dedicated (personalized) advertising to the users/consumers (see Data selling / data licensing).
Starting as a typical local applicable business model, the rise of internet made it a worldwide applicable model.

Recording in national accounts
In theory the recording of the transaction of this business model is straightforward. Receipts of payments for advertising is within the production boundary and equals output. The great variety in the way the advertising takes place however poses problems in the exact allocation of the revenues (see also collection of data below). For example: Vloggers of popular YouTube channels, which attract many viewers, receive a (small) amount for every hit (of a minimum duration) on their clips, because it increases the reach of the advertisement. To

what type of product should this amount be allocated? Is the producer a company? Is it a separate business model, a modern sandwich man?

Collection of data
Revenues from advertisement fees can be surveyed in business statistics. The revenues of vloggers will probably be hard to observe. International transactions should be no problem as they are paid by companies and will be included in international trade in services.

Platforms

From Heerschap, Pouw, Atmé, Measuring online platforms

"In general, an online platform is a digital intermediary, which matches supply and demand in a multi-sided market through the internet. Online platforms do not only match providers and users, but they mostly also facilitate possible transactions resulting from interactions. Online platforms differ in their role and the 'products' they exchange."

If the use of the online platform is not for free, providers and/or users have to pay a commission to the platform for a transaction and/or for the access to the platform. Finally, if a transaction between a provider and a user comes about, the user pays the provider if the transaction is not for free. Often, there is some kind of a digital confirmation of the transaction and support of a payment system of the online platform. Turnover for the online platform can also be generated through add-ons, insurances, logistic activities, cancellation fees etc. If the online platform is for free, they often function on the basis of sponsorships or investments.

With many online platforms, users are exposed to advertisements. These are provided by advertisers. They pay the online platform to match their advertisements with the right target groups, mostly on the basis of algorithms. In order to do so, online platforms use the collected information on background (so-called profiles) and surfing behavior of their users. These advertisements are often a major source of income for online platforms: the more users, the more attractive that online platform becomes for advertisers.

Business models. Besides non-profit models, this can range from turnover on the basis of transaction or access commissions for the provider or user or for both to turnover on the basis of advertisements or a combination. Sometimes the turnover is generated by investors or the inclusion of extra services, such as insurance, logistic services or cancelation fees. In order to attract more users, it is sometimes taken for granted that no profit is made at the moment. (Part of) the use of the online platform by providers and users can be for free. This kind of free use is an incentive to reinforce the participation and value creation of the online platform;"

Heerschap et al. suggest the business models for platforms are either fee-based or advertise-based. Both business models have been discussed above.

Data Licensing / Data Selling
With the advent of the internet, there has been an increase in the amount of data generated upon the users' activities over the internet. This has led to the advent of a new business model – the data licensing business model. Many companies like Google, Facebook, Twitter, etc. sell or license the data of its users to third parties to construct customer profiles based on their personal, demographic, geographic, and psychographic characteristics, enabling the firm to direct its marketing efforts with greater accuracy.

Impact of digitalization and globalization
The data-licensing model exists by the sake of internet. Having the internet as mode of operation, the data-licensing model has by definition a worldwide scope.

Recording in national accounts
The recording of the sales or licensing of data in the NA is straightforward as a commercial service.

Collection of data
As these transactions, both supply and use, are typical business transactions, survey based business statistics are an appropriate data source. The same holds for international transactions in trade in services.

E. Provision of financial services and trade in financial products

Banking
Traditionally banks were mainly focused on the domestic markets and commercial banking activities having (net) interest income (the difference between received interest on loans and paid interest on deposits) as the most important source of income. In the course of time, the banks provided a broader range of products. Fees and commissions cover a wide range of services, for example securities, clearing and settlement, asset management, trust, financial mediation, fiduciary activities, payments services, travel agency services, structured finance, servicing fees from securitization activities, insurance and other fee and commission income. Next to that, revenues emerge from advisory activities on financial products for consumers (mortgages) and enterprises (mergers and acquisitions, consultancy, emission of shares etc.

Trading in shares and other financial instruments is generally not part of the business model of commercial and retail banks. However, on investment banking these type of transactions are part of the business model. An investment bank is traditionally associated with corporate finance, like raising financial capital by underwriting, assisting in mergers and acquisitions and provide ancillary services such as market making, trading of derivatives and equity securities. On behalf of the bank and its clients, a large investment bank's primary function is buying and selling financial products.

In summary, in banking three basic business models can be distinguished:

a. Interest income: the difference between interest received on loans and interest paid on deposits.
b. Fees and commissions on a (wide range of) services
c. Buying and selling of financial products on behalf of the bank (in case trading is done on behalf of the clients the basic business model will be fees and commissions)

Impact of digitalization and globalization
Digitalization has a huge impact on way banks operate and serve their customers. However, the basic business models have hardly changed. Nowadays banks are multinational enterprises and thus banks operate worldwide.

Recording in the national accounts
The transaction of the three business models are all recorded in the national accounts but dispersed over the framework. Straightforward is the recording of the revenues from fees and commissions, which are within the production boundary and are seen as output. Interest income is more complicated because of the concept of FISIM. Interest flows are divided in a service part (FISIM) recorded as output in the production accounts (and SUT) and a primary income part recorded in the primary income account.
The third business model is classified as a financial transaction and thus recorded in the financial accounts. The result of trading in financial products is recorded as production of spreads ('trade margin') in the national accounts.

Collection of data
The collection of data on fees and commissions and the gross interest flows is straightforward. Revenues from trading, being a balance of plusses and minuses, are more difficult because of continuously varying valuation of the products.

Leasing
With leasing an owner (the lessor) of a specific asset (cars, airplanes, land, building, equipment, or machinery) grants a second party (the lessee) the right to its exclusive possession and use for a specific period and under specified conditions, in return for specified periodic rental or lease payments. The contents of lease contracts vary considerably from the sole assets to assets including maintenance and fuel (cars).

Impact of digitalization and globalization
The impact of digitalization on the basic business model is limited. Transfer of equipment (airplanes, trains) to a tax haven and lease back within a MNE is one aspect of globalization.

Recording in the national accounts
Depending on the type of contract the lease can be judged to be operational in which case the lease payments are recorded as the provision of a service (with intermediate consumption as the counterpart), or as financial lease in which case a loan is imputed together with interest payments.

Collection of data
Data on revenues from lease contract can be collected via business surveys. Problems exist in judging whether the contract concerns operational or financial lease and what additional items are included in the contract (for example fuel, maintenance etc.).

Insurance
Insurance companies are funded by insurance premiums. The main (net) source of income is the difference between received premiums and claims paid. Next to that, insurance companies will have revenues from investments (a.o. interest on mortgages, dividend) and fees from advisory activities.

Impact of digitalization and globalization
Digitalization has no substantial influence on the basic model. The same holds for globalization. Nevertheless insurance companies are operating worldwide and internet based consumer profiles can contribute to 'personalized insurance'.

Recording in the national accounts
In the definition of the NA output equals premiums minus adjusted claims in order to avoid negative production. This definition differs therefore from annual payments of premiums and claims. Next to that transactions between insurance companies and insured are a bit scattered over the framework. A service part is recorded in the production account (and SUT) while premiums and claims are recorded in the secondary distribution of income account.
The services part is within the production boundary, the premium part is outside.

Collection of data
Gross flows of premiums and claims is straightforward. The step to NA definition requires more information and assumptions.

Investment funds / Hedge funds
Investment funds and hedge funds invest in enterprises on behalf of their clients like private investors, pension funds, insurance companies with the aim of a of profitable return on its investment. The difference between hedge funds and investment funds is that the latter are operating for the return on investments by involving in the enterprise policy.

The return on investment is not an income for the investment fund and thus not part of its business model. In the national accounts these returns are recorded as attributed income of investors.

The business model of investment funds are fee-based or a commission linked to the financial results of their activities.

Impact of digitalization and globalization
Digitalization has no substantial influence on the basic model. Nevertheless digitalization changes the production process of hedge funds (a.o. flash transactions). The same holds for globalization.

Recording in the national accounts
In the national accounts the fees are recorded as production. Trade in financial products is recorded in the financial accounts and is outside of the production boundary.

Collection of data
Collection of data concerning fees is rather straightforward in survey based business statistics.

Other financial services

Other financial services consists of many different financial auxiliaries like administration of financial markets, stockbrokers, trust offices, market makers, mortgage agencies, credit and currency brokers, insurance agents, fund management etc.

The business model for these activities are mainly fee-based.

Impact of digitalization and globalization
Digitalization has no substantial influence on the elementary business model. The internet, however, provides new options for reaching customers. Globalization in this part of services is mostly a consequence of possibilities created by digitalization.

Recording in the national account
The recording of the transactions of this business model is straightforward: revenues equal production and all mentioned activities are within the production boundary.

Collection of data
Collection of data (survey based or administrative (VAT)) of the transactions of the basic business model is rather straightforward.

F. Renting out of movables, real estate and intellectual property rights

Renting of movables and real estate

Renting of movables and real estate is a long existing business model in which the rental company owns specific goods or real estate meant for renting to third parties varying from one time rentals (for example person cars) to long term contracts (in case of real estate). Revenues are the received rental payments.

License model

A license is a written contract under which the owner of a copyright, know how, patent, service mark, trademark, or other intellectual property, allows a licensee to use, make, or sell copies of the original. The licensee pays royalties or license fees to the owner.

Impact of digitalization and globalization
Digitalization has no substantial impact on the basic business model. The number and variety of intellectual property however has increased with digitalized products.
Although worldwide licensing exists already for a long time, renting out intellectual property seems to have accelerated in the last decade. Re-allocation of IP over the world as a way of optimization of corporate taxes is one of the causes of the acceleration.

Recording in the national accounts
In the NA license fees and royalties are recorded as payments for the provision of services. Revenues are within the production boundary and thus seen as output.
Re-allocation of IP can lead to distorted picture of the economy (see above, the Irish case).

Data collection
Data collection for the transaction of the license model is rather straightforward. In some cases the determination who is the economic owner of the IP is problematic.

Franchise
A franchise is an arrangement where one party (the franchiser) grants another party (the franchisee) the right to use its trademark or trade-name as well as certain business systems and processes, to produce and market a good or service according to certain specifications. The franchisee can be a manufacturer, wholesaler / distributor or retailer. The franchisee usually pays a one-time franchise fee plus a percentage of sales revenues as royalty, and gains (1) immediate name recognition, (2) tried and tested products, (3) standard building design and décor, (4) detailed techniques in running and promoting the business, (5) training of employees and (6) ongoing help in promoting and upgrading of the products.

For franchising the business model of the franchiser has to be described separately. The franchisee has business models described above (and below) and differs from its non-franchising competitors only in costs because for example the latter have to do the marketing themselves, while the franchisee pays a fee to the 'parent' company and takes advantage of the parents marketing and name recognition.

A franchiser has activities in a certain branch (manufacturing, trade, etc.) of which elements can be used by others. The business model for franchising is getting revenues from license fees / royalties for the use of intellectual property (branding, production processes, etc.) owned by the franchiser.

Impact of digitalization and globalization
Digitalization does not seem to have specific impact on this business model.
Franchising is a long existing practice in several fields of the economy within a country and also cross border. Globalization does not seem to have a substantial impact on this business model, other than perhaps a more (world) wide application.

Recording in the national accounts
License fees / royalties have to be recorded as revenues (payments) for services and is within the production boundary of the SNA2008.

Data collection
Data collection of the transactions of the basic business model is rather straightforward. The revenues are (sometimes specified) in business statistics.

G. Other business models

Nickel-and-dime
In the nickel and dime business model a basic product that is very cost-sensitive and hence priced as low as possible is provided to the customers. For every other accessory or service that comes with it, a certain amount is charged
Examples of the nickel-and-dime model are the low-cost air carriers, Nespresso (a relatively cheap coffee machine, but main part of the revenues result from the unique coffee capsules), electronic toothbrushes, etc.

A comparable business model consists a of relatively low priced piece of equipment, accompanied by additional (obligatory) service contracts (support, maintenance) in a one-time payment or periodical payments. The latter being the main part of revenues.

Impact of digitalization and globalization
On the basic business model of the wholesaler, digitalization as such has no substantial influence. Nevertheless for digitized products and (possibly) computers and computerized machinery linked to the internet, support and service do not have to be carried out on the spot.
On the basic business model of the wholesaler, globalization as such has no substantial influence. Nevertheless for digitized products and (possibly) computers and computerized machinery linked to the internet, support and service on a distance and thus from a centralized dedicated help- and service desk.

Recording in the national accounts
In theory the recording of the transactions in this business model in the national accounts is straightforward. Depending on the characteristics of the basic products and additional accessories and services, these revenues can be recorded in different products of the SUT. The case of embedded services, might pose a problem, in case of a one-time payment. The time of carrying out the services not necessarily coincides with the time of recording of the (implicit) payment.
Payment for the maintenance takes place in year T but is carried out in years T+1...T+10...

Data collection
Data collection of the transactions of the basic business model is rather straightforward however splitting between the main products and the embedded services might cause difficulties.

Crowdsourcing
Crowdsourcing business model involves the users to contribute to the value provided. Examples of businesses using crowdsourcing business model are for example charities and Wikipedia.

Impact of digitalization and globalization
Traditionally the various forms of charities operated on the local 'market', in a number of cases as local departments of worldwide organization like the Red Cross.
With the internet different types of activities became possible, even worldwide without local departments became possible, with Wikipedia as example of the latter.
Globalization is this business model is almost fully linked to digitalization.

Recording in the national accounts
In the NA crowdsourcing is recorded as income transfers and are outside of the production boundary. Local charities are mostly considered to be non-profit institutions serving households (NPIsh) and the production is defined as sum of costs. A similar approach can used for local non-charity organization funded via crowdsourcing.
What to do with worldwide operating NPI's like Wikipedia?

Data collection
Organizations of substantial size funded by crowdsourcing will often have annual reports from which data to make estimates can be derived. Small scale privately set up activities will not be covered anywhere.

Theft
The basic idea of this 'business model' is to lay hold on goods and money without mutual agreement. Selling of stolen goods provides a revenue to the thief. Stolen money is a resource.

Impact of digitalization and globalization
'Traditionally' theft was an activity in which two residents are involved. With the availability the internet theft (of mainly money) by hacking accounts, phishing, etc. has substantial digitized and global components.

Recording in the national accounts
In the recorded flows of the NA theft only appears in the estimation of trade margins in wholesale and retail trade.

Data collection
As with all illegal activities, the observation of theft is notoriously difficult. Indirect methods and incidental research are often the base for NA-estimates.

Conclusions of this chapter

The 'production heart' of the SNA is the base for the traditional breakdown of macro-economic indicators to industries. To what extent this breakdown is the best starting point for economic analysis can be questioned. Expanding product ranges, outsourcing of physical production, etc. do not give a full insight in the way companies are making money. A breakdown of the economy to business models could be helpful to analyze generation of income and the structural development of the ways of making money in the course of time. In the way most business models are applied digitization and globalization play an important role, because with the help of the internet they can be applied on a world-wide market and/or on a much larger scale (freemium and platforms). The use of business models in statistics provides view on the economy from another angle and might help to better understand the impact of digitalization and globalization.

One has to be aware that the applied business models are generally not an item in present statistics. Taking them into account asks probably for additional research.

The worldwide scale on which companies are applying their business models makes the observation of data very complicated. For example direct transactions between consumers and non-resident suppliers will probably escape on the view of the statistical offices, as a consequence making estimates of imports of services problematic. Cross-border organization of production processes lead to substantial intra-concern transactions which are often MNE's and are difficult to interpret. An investigation how to observe such transactions adequately and a search for new data sources seems necessary.

New business models and business models using new techniques are sometimes denoted as disruptive. The analysis of present business models shows that apart from a limited number of new models the basic business models are not substantially changed in the course of time. For the more 'traditional' business models the impact of digitization concerns mainly an expansion to world-wide markets coming in reach by the internet. Digitization lead to new

products like data selling and streaming services for which the basic business model fits within the traditional types but the scale on which they are applied is overwhelming. Digitization is in many aspects also a driving force for globalization of both markets and production processes.

A cause for the feeling of disruptiveness might be the scale on which some of the business models are applied nowadays and the privacy aspect of the personal data collected especially in free services. Nevertheless statistical offices face disruptiveness in their macro-economic estimates which is mainly caused by changes in the internal organization of MNE's by shifting of profits and changing the allocation of intellectual property.

Free services might be seen as a disruptive economic development. In spite of the fact that the business model of free services already exists for a long time (as stated above), the scale on which they are provided nowadays is overwhelming and can be seen as disruptive from a 'utility' point of view and a such of interest for economic analysis.
As NA generally do not take these type of transactions into account (exception on this rule are imputed rents of owner occupied dwellings) it could be meaningful to take free services and the like in consideration because of the scale on which they are applied and the impact on consumer behavior. An example of an approach in given in Nakamura.

Disruptiveness in economic indicators seems to be caused mainly by organizational activities of MNE's. A split of the corporate sectors (S11 and S12) of the national accounts into MNE's and non-MNE's could shed more light on the 'real national' economic development. Of specific interest could be a study on the way MNE's are internally organized and the impact on macro-economic indicators.

4. An alternative accounting system?

"The modern economy is a complex entity, subject to a continual process of change and development. The challenge is to ensure that economic statistics — and the methodologies used to construct them — evolve so as to capture these changes such that they remain relevant, accurate, and timely."
Sir Charles Bean, Independent review of UK economic statistics

The discomfort with the present national accounts, combined with the inflexibility and evolutionary development of the guidelines seems to ask for a more flexible approach. Although the changes on the way enterprises are making their money as shown by their basic business models are limited, some of them are nowadays applied on a world wide scale and therefore assumed to distort the picture of the economy. It also makes the compilation of the NA much harder as observation of certain transactions is hardly possible.
As NA are rigid in their guidelines they are not always able to accommodate to real-word changes in a transparent (i.e. for users readily to understand) way. An alternative accounting system, not guided by strict definitions and conventions should be able take care of that on short notice. Referring to the above 'Bean-quote', these comments concerning the SNA raise the question if it is necessary (or at least worthwhile) to develop an alternative accounting system.

The transactions of the business models discussed in the previous chapter are recorded in various places in the National Accounts (for example as production, property income, a financial transaction) it is not straight forward to get for example a view on the way money is made in an economy. This hampers to a certain extent economic analysis. The use of business models in an alternative system could give a view on the economy from another angle than the traditional industries and might reveal new and broader insights in economic development. A direct link with real-world transactions would also be helpful for leach men to better understand and clarify what is going on in the economy.

An alternative accounting system could take therefore (transactions in) business models as the heart of the system rather than the restricted production approach of the SNA and focus more on income or more broadly speaking, generated resources. Next to that an alternative system should avoid imputed, attributed and rerouted transaction as much as possible.

As the present national accounts contain all types of economic transactions, the set of an alternative accounting system would basically mean a reordering of transactions, skipping of transactions and adjustment of the content of transactions.

In this chapter a rough sketch is made of an alternative accounting system focusing on resources and uses and taking business models and real-world transactions as a starting point. The latter implies that imputed transactions of the SNA like rent of owner occupied dwellings will not appear in the sketch. The alternative accounting system will be denoted as Business-Model-system of BM-system in the text below.

Depending on the role economic agents play in the economy, there are many ways they receive their disposable resources. The various roles are well displayed by the institutional sectors of the national accounts, each having their own specific ways of generating and receiving resources. For example, the resources of households consists of many different components like wages, net profits of own business activities, interest, dividends, social benefits, pensions etc. In addition resources can result from the sales of both financial and

non- financial assets and consumer durables like person cars. Although the SNA contains (at least in theory) all economic transactions in a country, the different types of resources are dispersed over various accounts of the system, both current and financial. A straightforward summarizing T-account giving an overview of all types of resources and uses, irrespective of their nature and origin, is in the NA not readily at hand on a regular basis. Similar set-ups for financial and non-financial corporations can be thought of, but neither of them is readily available in the present NA. For the latter two institutional sectors a detailed variant of a profit and loss account, in line with bookkeeping conventions, could be helpful in analyzing the economics of resources and uses.

As a start a preliminary list of possible resources and uses is compiled based on administrative and statistical sources. Although there is certainly not a one-to-one correspondence, the selected 'real-world' transactions are loosely linked to SNA-transactions. Next to that they are classified following the SNA/ESA, together with the classification of economic agents into institutional sectors. This approach simplifies the analysis of differences of the draft system with the SNA.

For the different types of agents in the economy (in line with the institutional sector classification) various sources of information and inspiration are available to compile the list of resources and uses. Next to that the SNA is an important source of inspiration for compiling an overview of possible resources and uses as it contains all economic transactions in a country.

Non-financial corporations

An important source of information is the so called reference classification system of financial information. In the Netherlands a standard bookkeeping scheme for communication with the government is developed. This reference classification system of financial information (RCSFI) can be used as a starting point for the setup of an accounting system for businesses.

From RGS-site:

Businesses in the Netherlands are legally permitted to use their own formats and codes for bookkeeping, general ledger, profit and loss accounts and balance sheets. Legally prescribed templates only apply to specific reports, such as tax declarations. A group of private-sector bodies, software companies and government institutes have developed a standard in order to further integrate and automate the chain of administrative processes: the Reference Classification System of Financial Information (RCSFI) or in Dutch: Referentie grootboekshema (RGS). The RCSFI is explicitly positioned as a reference classification and not as a mandatory standard. To ensure companies can connect their ledgers to RCSFI, it contains all the ledgers which are required to report to the Dutch government and most of the ledgers used for internal reporting. The technical format for automated data transmission between various software packages and between different parties used in the Netherlands is the XBRL-format. In the context of Standard Business Reporting (SBR). Providing digital reports by SBR has been made mandatory by the tax authority and the Chamber of Commerce. Hence it also became the standard for a number of other uses. Like financial reports that are required by private banks. To meet this standard, the RCSFI is connected to

XBRL-tags in the Dutch taxonomy. This enables reporting directly from the general ledger to the government.

More details on RCSFI can be found in: [27] Journal of official statistics vol. 34, no 2, 2018, p. 419 – 443: Business data collection: towards electronic data interchange. Experiences in Portugal, Canada, Sweden, and the Netherlands with EDI, Gert Buiten, Ger Snijkers, Paulo Saraiva, Johan Erikson, Anna-Greta Erikson and Alice Born.

A second source of information for transactions by corporations are the SBS-questionnaires. These questionnaires do not only cover transactions in the field of (pure production) but also other revenues and costs resulting in a full profit and loss accounts.

A Third source of information is the questionnaire for the statistics of finances of enterprises. This questionnaire includes detailed information on the structure of the enterprise, financial transaction and balance sheets.

Financial corporations
The main sources of information for transactions of financial corporations are the surveys of the Dutch Central Bank (DNB) called 'Directe RApportage' (DRA). On an annual basis detailed data leading to the profit and loss accounts of the financial institutions are collected. Questionnaires contains among others questions of on fees and commissions, income from renting real estate, and business costs.

Government
The IMF manual on government statistics a useful source of information on resources and uses of the government.

Households
Income statistics are a useful source of information for resources of households. Several types of income are distinguished:

- income from labour
- income from production (value added approach)
- property income (including owner occupied rents)
- income from income insurances (a.o. social benefits and pensions)
- income transfers

The budget survey is a useful source of information for uses of disposable income.

For households in the role of producer the Reference classification system of financial information mentioned above is a useful source of information.

Non-profit institutions
For non-profit institutions households the Reference classification system of financial information mentioned above is a useful source of information.

Rest of the world
- No specific information

Based on the above mentioned sources of information and inspired by the SNA a first draft of a list of resources is compiled. To the items in the list the related SNA-variables are attached, with the reservation the 'contents' of the list-items in the list do not necessarily coincide with the contents (definition) of the related SNA-variable.

List of resources

Sales of goods and services

- Sales of self-produced goods and services
  The activity or business of selling products or services (alternatives: sales revenue, sales volume, turnover: the annual sales volume net of all discounts and sales taxes).
  Related SNA-variable: P11 Market output
  Related business models: A, C. D, E (financial services and leasing), F and G (partly)

Sales of existing goods and 'services'

- Sales of fixed assets: Sales of existing capital goods (second hand)
  Related SNA-variable: P113 Disposals of existing fixed assets
- Sales of non-produced assets: Sales of existing non-produced capital goods / assets ('second hand') like land, goodwill and contracts.
  Related SNA-variable: NP Acquisitions less disposal of non-produced assets
- Sales of valuables: Sales of valuables (second hand)
  Related SNA-variable: P53 Acquisitions less disposals of valuables
- Sales of existing (second hand) 'consumer' goods

  Related business models: B

Income from labour

- Wages and salaries
  Income of employees or cost of using labour i.e. monetary remuneration computed on hourly, daily, weekly basis of a piece of work.
  Related SNA-variable: D11 Wages and salaries

Social contributions

- Employers' social contributions
  Related SNA-variable: D121 /D611 Employers' actual social contribution
- Households' social contributions
  Related SNA-variable: D613 Households' social contributions

Social benefits and allowances

- Pension benefits
  Related SNA-variable: D621 Social benefits in cash
- Other social benefits
  Related SNA-variable: D622 Social benefits in cash
  Related SNA-variable: D63 Social transfers in kind

Other types of income

- Interest
  Related SNA-variable: D41 Interest
- Dividend
  Related SNA-variable: D421 Dividend
- Rent
  Related SNA-variable: D45 Rent

  Related business models: E (interest)

Income transfers

- Related SNA-variable: D7 Income transfers

  Dependent on institutional sector various types can be linked to the SNA.
- Insurance premiums
  Related SNA-variable: D71 Non-life insurance premiums
- Insurance claims
  Related SNA-variable: D72 Non-life insurance claims
- Within government
  Related SNA-variable: D73 Income transfers within government
- International (+own resources EU)
  Related SNA-variable: D74 / D76 Income transfers with international cooperation and EU
- With NPISh
  Related SNA-variable: D751 Income transfers with NPIsh
- Between households
  Related SNA-variable: D752 Income transfers between households
- Other
  Related SNA-variable: D759 Income transfers, other

  Related business models: E (Insurance) and G (crowdsourcing)

Capital transfers

- Capital transfers
  Related SNA-variable: D91r Capital transfers receivable

Taxes

- Taxes income (and wealth)
  Related SNA-variable: D5 Taxes income (and wealth)
- Taxes on products
  Related SNA-variable: D2 Taxes on products
- Other taxes
  Related SNA-variable: D2 Other taxes

Subsidies

- Subsidies on products
  Related SNA-variable: D3 Subsidies on products
- Other subsidies
  Related SNA-variable: D3 Other subsidies

Financial transactions

- Sales of financial products
  - Sales of shares
    Related SNA-variable: F5 Equity and investment fund shares
  - Sales of derivatives
    Related SNA-variable: F7 Financial derivatives and employee stock options
- New loans
  Related SNA-variable: F4 Loans (liabilities)
- Redemption of loans to third parties
  Related SNA-variable: F4 Loans (assets)
- Extraction from (short term) deposits
  Related SNA-variable: F2 Deposits
- Redemptions of bonds
  Related SNA-variable: F3 Debt securities

Theft

- Theft and subsequent sales of goods
- Theft of money
  Related business model: G (theft)

The above lists shows that revenues resulting from the application of the various business models are linked to dispersed transactions in the system. Bringing them together in one account will help to analyse the economy. A breakdown of the resource flow by business models will deepen such an analysis.

An overview of possible resources and institutional sector in which they might appear is presented in table 1.

Table 1 Overview resources by institutional sector

Disposable resources			ESA-code		**S11**	**S12**	**S13**	**S14**	**S15**	**S2**
Sales of goods and services										
	Sales of self produced goods and services		P11	Market output	x	x	x	x	x	
	Sales of existing goods and services									
		Sales of fixed assets	P113	Disposals of existing fixed assets	x	x	x	x	x	x
		Sales of non-produced assets	NP	Acquisitions less disposal of non-produced assets	x	x	x	x	x	x
		Sales of valuables	P53	Acquisitions less disposals of valuables	x	x	x	x	x	x
		Sales of existing 'consumer' goods						x		x
Income from labor										
	Wages and salaries		D11	Wages and salaries				x		
	Social contributions									
		Employers' social contributions	D121 /D611	Employers' actual social contribution		x				
		Households' social contributions	D613	Households' social contributions		x				
Social benefits										
	Pension benefits		D621	Social benefits in cash				x		
	Other social benefits		D622	Social benefits in cash				x		
		In cash								
		In kind	D63	Social transfers in kind				x		
Other types of income										
	Interest		D41	Interest	x	x	x	x	x	x
	Dividend		D421 / D441	Dividend	x	x	x	x	x	x
	Rent		D45	Rent	x	x	x	x	x	x
	Income transfers		D7	Income transfers						
		Insurance premiums	D71	Non-life insurance premiums		x				
		Insurance claims	D72	Non-life insurance claims	x	x	x	x	x	x
		Within government	D73	Income transfers within government			x			
		International (+own resources EU)	D74 / D76	Income transfers with internatinal cooperation and EU						x
		With NPISh	D751	Income transfers with NPIsh					x	
		Between households	D752	Income transfers between households				x		
		Other	D759	Income transfers, other)	x	x	x	x	x	x
	Capital transfers									
	Capital transfers		D91r	Capital transfers receivable	x	x	x	x	x	x
Taxes										
	Taxes income (and wealth)		D5	Taxes income (and wealth)			x			
	Taxes on products		D2	Taxes on products			x			
	Other taxes		D2	Other taxes			x			
Subsidies										
	Subsidies on production		D3	Subsidies on products	x	x	x	x	x	x
	Other subsidies		D3	Other subsidies	x	x	x	x	x	
Financial transactions										
	New loans		F4	Loans (liabilities)	x	x	x	x	x	x
	Extraction from deposits		F2	Deposits	x	x	x	x	x	x
	Sales of financial products									
		Sales of shares	F5	Equity and investment fund shares	x	x	x	x	x	x
		Sales of derivaties	F7	Financial derivatives and employee stock options	x	x	x	x	x	x
	Repayment of loans to third parties		F4	Loans (liabilities)	x	x	x	x	x	x
	Repayment of bonds		F3	Debt securities	x	x	x	x	x	x
Theft								x		x

List of uses

Purchases of goods and services

- Purchases of input for the production of goods and services
  Related SNA-variable: P2 Intermediate consumption
- Purchases for gross fixed capital formation
  Related SNA-variable: P51g gross fixed capital formation
- Purchases for consumption purposes
  Related SNA-variable: P31 individual consumption expenditure
- Purchases of existing goods and services
- Purchases of fixed assets
  Related SNA-variable: P113 Disposals of existing fixed assets
- Purchases of non-produced assets
  NP Acquisitions less disposal of non-produced assets
- Purchases of valuables
  Related SNA-variable: P53 Acquisitions less disposals of valuables
- Purchases of existing 'consumer' goods

Costs of labour

- Wages and salaries
  Related SNA-variable: D11 Wages and salaries
- Social contributions
- Employers' social contributions
  Related SNA-variable: D121 /D611 Employers' actual social contribution
- Households' social contributions
  Related SNA-variable: D613 Households' social contributions

Social benefits

- Pension benefits
  Related SNA-variable: D621 Social benefits in cash
- Other social benefits
  Related SNA-variable: D622 Social benefits in cash
  Related SNA-variable: D63 Social transfers in kind

Other types of expenses

- Interest
  Related SNA-variable: D41 Interest
- Dividend
  Related SNA-variable: D421 Dividend
- Rent
  Related SNA-variable: D45 Rent

Income transfers

- Related SNA-variable: D7 Income transfers
- Within government
  Related SNA-variable: D73 Income transfers within government
- International (+own resources EU)
  Related SNA-variable: D74 / D76 Income transfers with international cooperation and EU
- With Non-profit Institutions serving households (NPISh)
  Related SNA-variable: D751 Income transfers with NPIsh
- Between households
  Related SNA-variable: D752 Income transfers between households
- Other
  Related SNA-variable: D759 Income transfers, other

Capital transfers

- Insurance premiums
  Related SNA-variable: D71 Non-life insurance premiums
- Insurance claims
  Related SNA-variable: D72 Non-life insurance claims
- Capital transfers
  Related SNA-variable: D91p Capital transfers payable

Taxes

- Taxes income (and wealth)
  Related SNA-variable: D5 Taxes income (and wealth)
- Taxes on products
  Related SNA-variable: D2 Taxes on products
- Other taxes
  Related SNA-variable: D2 Other taxes

Subsidies

- Subsidies on products
  Related SNA-variable: D3 Subsidies on products
- Other subsidies
  Related SNA-variable: D3 Other subsidies

Financial transactions

- Redemption of loans
  Related SNA-variable: F4 Loans (liabilities)
- New loans to third parties
  Related SNA-variable: F4 Loans (assets)
- Addition to deposits
  Related SNA-variable: F2 Deposits
- Purchases of financial products
- Purchases of shares
  Related SNA-variable: F5 Equity and investment fund shares
- Purchases of derivatives
  Related SNA-variable: F7 Financial derivatives and employee stock options
- Purchases of debt bonds

An overview of possible uses and institutional sector in which they might appear is presented in table 2.

Table 2 an overview of uses by institutional sector

Uses			ESA-code		S11	S12	S13	S14	S15	S2
Purchases of goods and services										
	Purchases of input for the production of goods and services		P2	Intermediate consumption	x	x	x	x	x	
	Purchases for gross fixed capital formation		P51		x	x	x	x	x	
	Purchases for final consumption		P3				x	x	x	
	Purchases of existing goods and services									
		Purchases of fixed assets	P113	Disposals of existing fixed assets	x	x	x	x	x	x
		Purchases of non-produced assets	NP	Acquisitions less disposal of non-produced assets	x	x	x	x	x	x
		Purchases of valuables	P53	Acquisitions less disposals of valuables	x	x	x	x	x	x
		Purchases of existing 'consumer' goods						x		x
Costs of labor										
	Wages and salaries		D11	Wages and salaries	x	x	x	x	x	x
	Social contributions									
		Employers' social contributions	D121 /D611	Employers' actual social contribution	x	x	x	x	x	x
		Households' social contributions	D613	Households' social contributions				x		
Social benefits										
	Pension benefits		D621	Social benefits in cash		x				
	Other social benefits		D622	Social benefits in cash			x			
		In cash								
		In kind	D63	Social transfers in kind			x			
Other types of expenses										
	Interest		D41	Interest	x	x	x	x	x	x
	Dividend		D421	Dividend	x	x				x
	Rent		D45	Rent	x	x	x	x	x	x
	Income transfers		D7	Income transfers						
		Insurance premiums	D71	Non-life insurance premiums	x	x	x	x	x	x
		Insurance claims	D72	Non-life insurance claims		x				
		Within government	D73	Income transfers within government			x			
		International (+own resources EU)	D74 / D76	Income transfers with internatinal cooperation and EU			x			
		With NPISh	D751	Income transfers with NPIsh				x		
		Between households	D752	Income transfers between households				x		
		Other	D759	Income transfers, other)	x	x	x	x	x	x
	Capital transfers									
		Capital transfers	D91r	Capital transfers receivable	x	x	x	x	x	x
Taxes										
	Taxes income (and wealth)		D5	Taxes income (and wealth)	x	x	x	x	x	x
	Taxes on production		D2	Taxes on production	x	x	x	x	x	x
	Other taxes		D2	Other taxes	x	x	x	x	x	x
Subsidies										
	Subsidies on production		D3	Subsidies on products			x			
	Other subsidies		D3	Other subsidies			x			
Financial transactions										
	Redemption of loans		F4	Loans (liabilities)	x	x	x	x	x	x
	Addition to deposits		F2	Deposits	x	x	x	x	x	x
	Purchases of financial products									
		Purchases of shares	F5	Equity and investment fund shares	x	x	x	x	x	x
		Purchases of derivaties	F7	Financial derivatives and employee stock options	x	x	x	x	x	x
	New loans to third parties		F4	Loans (liabilities)	x	x	x	x	x	x
	Purchases of bonds		F3	Debt securities	x	x	x	x	x	x

5. The BM-system and the SNA

What are the differences between resource-oriented BM-system and the production-oriented SNA system? A first step is leaving the setup with process-linked T-accounts of the SNA and put all resources and uses of the current account in one table as is done in the Dutch national accounts publication (see annex 2). The traditional balancing items of the various SNA-accounts are summarized at the bottom of the table. What is missing compared to the BM-system are the financial transactions. On the other hand the SNA-accounts include transactions which are not part of the alternative system. Table 3 gives an overview of the most important differences between the SNA and the BM-system for the total economy for the items of the current account.

Table 3 Differences between SNA and the BM-system - resources

SNA-variable	In alternative accounting system	SNA-variable	In alternative accounting system
Imports of goods and services		**Current taxes on income and wealth**	
Imports of goods		Current taxes on income	Y
Imports of services		Other current taxes	Y
Output		**Social contributions and benefits**	
Market output	Y* 1)	Net social contributions	
Output produced for own final use		Employers' actual social contributions	Y
Own-account capital formation	N	Employers' imputed social contributions	N
Products retained for own consumption	N	Households' actual social contributions	Y
Non-market output	N	Households' social contrib. supplements	N
Compensation of employees		The social insur. scheme service charges	N
Wages and salaries	Y* 2)	Social benefits in cash	
Employers' social contributions	Y	Social security benefits in cash	Y
Taxes on production and imports		Other social insurance benefits	Y
Taxes on products	Y	Social assistance benefits in cash	Y
Other taxes on production	Y	**Other current transfers**	
Subsidies (-)		Net non-life insurance premiums	Y
Subsidies on products	Y	Non-life insurance claims	Y
Other subsidies on production	Y	Current transfers within gen. government	Y
Property income		Current international co-operation	Y
Interest; definition National Accounts	N	Miscellaneous current transfers	Y
Correction FISIM	N	The VAT- and GNI-based EU own resource	Y
Interest before correction for FISIM	Y	**Adjustm. change in pension entitlements**	N
Distributed income of corporations		**Capital transfers**	
Dividends	Y	Capital taxes	Y
Withdrawals from income of quasi-corp.	Y* 3)	Investment grants	N
Reinvested earnings on foreign investm.	N	Other capital transfers	Y
Other investment income			
Investm. income attrib. to policy holder	N		
Income payable on pension entitlements	N		
Inv. income attributable to shareholders	Y* 4)		
Rent	Y		

1) Excluding imputed and rerouted output, 2) Excluding wages in kind, 3) Excluding imputed rent of holiday homes, 4) Only dividends

Excluded from the alternative system are imputed and attributed resources like imputed social contributions, non-dividend part of attributed investment income of shareholders, income payable on pension entitlements and the adjustment of the change in pension entitlements. On the balance of resources and uses the impact is limited to the size of the last two items, because the others are offset on the uses side.

Some of the other items in the overview differences between the two systems are substantially. Most eye catching in market output are the imputed rent of owner occupied dwellings, FISIM and services linked to insurance.
Further production for own final use, both for consumption and investment purposes are excludes in the BM-system as no transactions take place other than purchases of inputs which

are either consumption of households or intermediate consumption. From a pure resources and uses approach this way of recording of own account capital formation can be defended, however form a business economics point of view (capitalization) inclusion of this item makes sense. Also non-market output is excluded as the real-world payments to the producers of these services are recorded as income transfers in the SNA.
In the BM-system, wages in kind are not recorded as part of wages as the enterprise is actually paying for the concerning products.
Of the investment income attributable to shareholders only the actual paid out dividends are recorded in the alternative system. Insurance premiums have to be adjusted for the NA-rerouting of the service part of the premium.
In the Dutch national accounts imputed rent of holiday homes abroad are recorded as property income and are excluded in the alternative system.

Table 4 Differences between SNA and the BM-system – uses

SNA-variable	In alternative accounting system	SNA-variable	In alternative accounting system
Exports of goods and services		**Other current transfers**	
Exports of goods		Net non-life insurance premiums	Y* 4)
Exports of services		Non-life insurance claims	Y
Intermediate consumption (-)	Y* 1)	Current transfers within gen. government	Y
Compensation of employees		Current international co-operation	Y
Wages and salaries	Y* 2)	Miscellaneous current transfers	Y
Employers' social contributions	Y	The VAT- and GNI-based EU own resource	Y
Taxes on production and imports		**Adjustm. change in pension entitlements**	N
Taxes on products	Y	**Final consumption expenditure**	
Other taxes on production	Y	Actual individual final consumption	
Subsidies (-)		Social transfers in kind Total	Y
Subsidies on products	Y	Other individual final consumption	Y* 5)
Other subsidies on production	Y	Actual collective final consumption	N
Property income		**Capital transfers**	
Interest; definition National Accounts	N	Capital taxes	Y
Correction FISIM	N	Investment grants	N
Interest before correction for FISIM	Y	Other capital transfers	Y
Distributed income of corporations		**Gross capital formation**	
Dividends	Y	Gross fixed capital formation	Y* 6)
Withdrawals from income of quasi-corps.	Y	Consumption of fixed capital	N
Reinvested earnings on foreign investm.	N	Changes in inventories incl. valuables	
Other investment income		Changes in inventories	N
Investm. income attrib. to policy holder	N	Acquisitions less disposals of valuables	Y
Income payable on pension entitlements	N	**Acq. less disposals of non-prod. assets**	Y
Inv. income attributable to shareholders	Y* 3)		
Rent	Y		
Current taxes on income and wealth			
Current taxes on income	Y		
Other current taxes	Y		
Social contributions and benefits			
Net social contributions			
Employers' actual social contributions	Y		
Employers' imputed social contributions	N		
Households' actual social contributions	Y		
Households' social contrib. supplements	N		
The social insur. scheme service charges	N		
Social benefits in cash			
Social security benefits in cash	Y		
Other social insurance benefits	Y		
Social assistance benefits in cash	Y		

1) excluding FISIM and intermediate consumption linked to owner occupied dwellings, service charge of insurance; including wages in kind, 2) excluding wages in kind, 3) only dividends, 4) including service charge, 5) excluding imputed rent of owner occupied dwellings, FISIM, service charge for insurance, wages in kind, including intermediate consumption linked to owner occupied dwellings, 6) excluding own account produced gross fixed capital formation.

Table 4 gives an overview of the most important differences on the uses side. As mentioned above part of the adjustments are made in resources have an counter booking on the uses side, like imputed social contributions, imputed rent of owner occupied dwellings and FISIM. Other deviations imply shifts between different types of uses, like wages in kind from wages to intermediate consumption, maintenance of owner occupied dwellings from intermediate consumption to consumption of households.

Excluded from uses in the BM-system are imputed and attributed uses like imputed social contributions and non-dividend part of attributed investment income of shareholders. On the balance of resources and uses there is no impact, because they are offset on the resources side. Final consumption of government and non-profit institutions are also excluded.

In the BM-system wages in kind are not recorded as part of wages as the enterprise is actually paying for the concerning products.
Of the investment income attributable to shareholders only the actual paid out dividends are recorded in the alternative system.
Insurance premiums have to be adjusted for the NA-rerouting of the service part of the premium.
In the Dutch national accounts imputed rent of holiday homes abroad are recorded as property income and are excluded in the alternative system.
Consumption of households excludes imputed rent of owner occupied dwellings, FISIM, service charge of insurances, consumption from wages in kind and production for own final consumption. Included is intermediate consumption linked to owner occupied dwellings.
Own account produced capital goods are excluded from gross fixed capital formation.

6. An example: BM-accounting for households

In order to get an impression of the BM-system, an example for households is compiled for the reporting years 2015 – 2018. Data are derived from the national accounts and if necessary adjusted in order to fulfil the 'requirements' of the BM-system in the sense that real-world transaction are approximated as close as possible (see below for more details). It must be mentioned that not for all items data are available. For fixed assets, second hand consumer goods, financial transactions and theft the balance of resources and uses is recorded in the tables 5 and 6 below as gross flows are not readily available.

Table 5 Disposable resources

			million euros				Percentage of total			
Sales of goods and services			**2015**	**2016**	**2017***	**2018***	**2015**	**2016**	**2017***	**2018***
	Sales of self produced goods and services		137092	142425	150891	157237	24,1	24,1	24,6	25,1
	Sales of existing goods and services									
		Sales of fixed assets	pm	pm	pm	pm				
		Sales of non-produced assets	pm	pm	pm	pm				
		Sales of valuables	pm	pm	pm	pm				
		Sales of existing 'consumer' goods								
Income from labor										
	Wages and salaries		251125	258890	268144	279259	44,1	43,8	43,7	44,6
Social benefits										
	Pension benefits		39042	39772	40929	42335	6,9	6,7	6,7	6,8
	Other social benefits		83444	85261	86947	88450	14,7	14,4	14,2	14,1
Other types of income										
	Interest		6324	4803	3658	3150	1,1	0,8	0,6	0,5
	Dividend		12848	13126	14074	14005	2,3	2,2	2,3	2,2
	Rent		5	4	5	4	0,0	0,0	0,0	0,0
	Income transfers									
		Insurance claims	9240	9386	9997	9960	1,6	1,6	1,6	1,6
		Other	5817	6022	6268	5952	1,0	1,0	1,0	0,9
	Capital transfers									
	Capital transfers		7221	7302	7487	7612	1,3	1,2	1,2	1,2
Subsidies										
	Subsidies on production		1686	1555	1671	1782	0,3	0,3	0,3	0,3
	Other subsidies									
Financial transactions										
	New loans		8458	11458	13025	12244	1,5	1,9	2,1	2,0
	Extraction from deposits									
	Sales of financial products									
		Sales of shares								
		Sales of derivatives	1768	5732	4080	132	0,3	1,0	0,7	0,0
	Repayment of loans by third parties		1817	2683	1293	1478	0,3	0,5	0,2	0,2
	Repayment of bonds		1559	946	726	9	0,3	0,2	0,1	0,0
Theft			pm	pm	pm	pm				
		Currency	-971	-813	-616	-322	-0,2	-0,1	-0,1	-0,1
		Transferable deposits	2346	2978	5624	3318	0,4	0,5	0,9	0,5
		Total current	553844	568546	590071	609746	97,4	96,1	96,1	97,3
		Total financial	14977	22984	24132	16859	2,6	3,9	3,9	2,7
		Total	568821	591530	614203	626605	100,0	100,0	100,0	100,0

In the short period presented in the table 5 the shares of the various resources of households have not changed very much. The share of sales of goods and services raised by one percentage point from 24.1 to 25.1 As might be expected the income from interest decreased in the course of the years 2015 – 2018 form a share of 1.1 to 0.5 per cent. Interesting are the

disposable resources from new loans raising from 1.5 per cent to 2.0 percent as they are not so explicitly shown as resources in the national accounts.

Table 6 Realized uses

			million euros					Percentage of total		
Purchases of goods and services			**2015**	**2016**	**2017***	**2018***	**2015**	**2016**	**2017***	**2018***
	Purchases of input for the production of goods and services		62289	63380	67613	71248	10,9	10,9	11,2	11,3
	Purchases for Gross fixed capital formation		32495	38844	40485	47152	5,7	6,7	6,7	7,5
	Purchases for final consumption		248610	251820	261950	272761	43,6	43,2	43,5	43,1
	Purchases of existing goods and services									
		Purchases of fixed assets	0	0	0	0				
		Purchases of non-produced assets	369	508	506	473	0,1	0,1	0,1	0,1
		Purchases of valuables	5	9	20	18	0,0	0,0	0,0	0,0
		Purchases of existing 'consumer' goods	0	0	0	0	0,0	0,0	0,0	0,0
Costs of labor										
	Wages and salaries		10486	11127	11446	12116	1,8	1,9	1,9	1,9
	Social contributions									
		Employers' social contributions	2641	2775	2813	3030	0,5	0,5	0,5	0,5
		Households' social contributions	72964	79118	76461	80380	12,8	13,6	12,7	12,7
Other types of expenses										
	Interest		33198	31570	29545	28114	5,8	5,4	4,9	4,4
	Rent		236	273	278	266	0,0	0,0	0,0	0,0
	Income transfers									
		Insurance premiums	14879	14752	15772	15955	2,6	2,5	2,6	2,5
		Other	11001	11259	11634	11095	1,9	1,9	1,9	1,8
	Capital transfers									
		Capital transfers	7552	7926	8061	7848	1,3	1,4	1,3	1,2
Taxes										
	Taxes income (and wealth)		50759	49327	60631	60334	8,9	8,5	10,1	9,5
	Taxes on production		2087	2145	2238	2370	0,4	0,4	0,4	0,4
	Other taxes		7328	7428	7619	7702	1,3	1,3	1,3	1,2
Financial transactions										
	Repayment of loans		0	0	0	0	0,0	0,0	0,0	0,0
	Addition to deposits		3383	6411	3365	7386	0,6	1,1	0,6	1,2
	Purchases of financial products									
		Purchases of shares	10189	4887	1785	4019	1,8	0,8	0,3	0,6
		Purchases of derivatives	0	15	17	15	0,0	0,0	0,0	0,0
	New loans to third parties						0,0	0,0	0,0	0,0
	Purchases of bonds		9	4	0	286	0,0	0,0	0,0	0,0
		Total current	556899	572261	597072	620862	97,6	98,1	99,1	98,1
		Total financial	13581	11317	5167	11706	2,4	1,9	0,9	1,9
		Total	570480	583578	602239	632568	100,0	100,0	100,0	100,0

Similar to resources the shares of the various uses are in general stable in the concerned period. With the decrease of interest rates the share interest paid in total uses has decreased. Remarkable changes are the increase of households' social contribution in 2016 and the increase in taxes in 2017. Financial transactions seem to be more volatile.

Table 7 Balances of resources and use

	2015	**2016**	**2017***	**2018***
Balance current	-3055	-3715	-7001	-11116
Balance financial	1396	11667	18965	5153
Statistical discrepancy	-1659	7952	11964	-5963

In theory the balance of resources and uses in this BM-system should be zero. As in this stage of the research not all consequences of changes in the current accounts are fully worked through, discrepancies have to appear. Next to that the national accounts data which are used

to make the above estimates show themselves statistical discrepancies between the current and financial accounts ranging from -4.5 to + 4.2 billion euros.

Relation with the SNA variables

Table 8 Resources - from SNA to BM-accounting

Million euros	National accounts				Adjustments				BM-system			
	2015	2016	2017*	2018*	2015	2016	2017*	2018*	2015	2016	2017*	2018*
Total	731579	748599	771173	797964	-177735	-180053	-181102	-188218	553844	568546	590071	609746
Output/Total	179534	186310	195893	203806	-42442	-43885	-45002	-46569	137092	142425	150891	157237
Market output/Total	137092	142425	150891	157237	0	0	0	0	137092	142425	150891	157237
Other market output	137092	142425	150891	157237					137092	142425	150891	157237
Output produced for own final use/Total	42442	43885	45002	46569	-42442	-43885	-45002	-46569	0	0	0	0
Own-account capital formation	1149	1391	1285	1439	-1149	-1391	-1285	-1439	0	0	0	0
Products retained for own consumption	41293	42494	43717	45130	-41293	-42494	-43717	-45130	0	0	0	0
Compensation of employees/Total	323579	333541	345296	360782	-72454	-74651	-77152	-81523	251125	258890	268144	279259
Wages and salaries	255152	262959	272309	283753	-4027	-4069	-4165	-4494	251125	258890	268144	279259
Employers' social contributions	68427	70582	72987	77029	-68427	-70582	-72987	-77029	0	0	0	0
Subsidies (-)/Total	1686	1555	1671	1782	0	0	0	0	1686	1555	1671	1782
Other subsidies on production	1686	1555	1671	1782					1686	1555	1671	1782
Property income/Total	58512	56995	55562	55962	-39335	-39062	-37825	-38803	19177	17933	17737	17159
Interest; definition National Accounts	3542	2550	2719	2892	-3542	-2550	-2719	-2892	0	0	0	0
Interest/Correction FISIM	-2782	-2253	-939	-258	2782	2253	939	258	0	0	0	0
Interest before correction for FISIM	6324	4803	3658	3150					6324	4803	3658	3150
Property income/Distributed income of corporations/Total	13665	14158	15392	15169	-1492	-1404	-1704	-1727	12173	12754	13688	13442
Dividends	12173	12754	13688	13442					12173	12754	13688	13442
Withdrawals from income of quasi-corp.	1492	1404	1704	1727	-1492	-1404	-1704	-1727	0	0	0	0
Property income/Other investment income/Total	41300	40283	37446	37897	-40625	-39911	-37060	-37334	675	372	386	563
Investm. income attrib. to policy holder	5135	4531	3783	3421	-5135	-4531	-3783	-3421	0	0	0	0
Income payable on pension entitlements	34212	34217	32101	32911	-34212	-34217	-32101	-32911	0	0	0	0
Inv. income attributable to shareholders	1953	1535	1562	1565	-1278	-1163	-1176	-1002	675	372	386	563
Dividens attributable to shareholdes	675	372	386	563	0	0	0	0	675	372	386	563
Retained earnings attr. To shareholders	1278	1163	1176	1002	-1278	-1163	-1176	-1002	0	0	0	0
Rent	5	4	5	4					5	4	5	4
Social contributions and benefits/Total	122711	125289	128186	131137	-225	-256	-310	-352	122486	125033	127876	130785
Net social contributions/Total	225	256	310	352	-225	-256	-310	-352	0	0	0	0
Employers' imputed social contributions	225	256	310	352	-225	-256	-310	-352	0	0	0	0
Social benefits in cash/Total	122486	125033	127876	130785	0	0	0	0	122486	125033	127876	130785
Social security benefits in cash	52732	53299	53454	53815					52732	53299	53454	53815
Other social insurance benefits	49714	50841	53066	55483					49714	50841	53066	55483
Social assistance benefits in cash	20040	20893	21356	21487					20040	20893	21356	21487
Other current transfers/Total	15057	15408	16265	15912	0	0	0	0	15057	15408	16265	15912
Non-life insurance claims	9240	9386	9997	9960					9240	9386	9997	9960
Miscellaneous current transfers	5817	6022	6268	5952					5817	6022	6268	5952
Adjustm. change in pension entitlements	23279	22199	20813	20971	-23279	-22199	-20813	-20971	0	0	0	0
Capital transfers/Total	7221	7302	7487	7612	0	0	0	0	7221	7302	7487	7612
Investment grants	69	83	96	66					69	83	96	66
Other capital transfers	7152	7219	7391	7546					7152	7219	7391	7546

Explanation of adjustments

Output*:*

- Products retained for own final use consumption (mainly imputed rent): 42422 (offset in consumption)
- Own-account capital formation: 1149 million euros (offset in gross fixed capital formation)

Compensation of employees*:*

* Wages:

- Wages in kind: 4252 million euros (offset in consumption)

+ Imp. Social contributions: 225 million euros (offset in social benefits)

* Employers' social contributions

- (actual and imputed): 68427 million euros (offset on uses side)

***Property income**:*

- Adjustment for FISIM: 2782 million euros (offset in interest)
- Imputed rent of holiday homes abroad: 1492 million euros (offset in other individual consumption)
- Income payable on pension entitlements: 34212 million euros; offset in social contribution supplements
- Investment income attributable to policy holder: 5135 million euros
- Retained earnings attributable to shareholders: 1278 million euros

Social contributions and benefits:

- Employers' imputed social contributions; counterpart social benefits: 225 million euros (offset in wages)

Adjustment: change in pension entitlements

- Adjustment: 23279 million euros
-

Table 9 Uses – from SNA to BM-accounting

Million euros	National accounts				Adjustments				BM-system			
	2015	2016	2017*	2018*	2015	2016	2017*	2018*	2015	2016	2017*	2018*
Total	707741	727453	755528	786936	-150842	-155192	-158456	-166074	556899	572261	597072	620862
Intermediate consumption (-)	92272	93054	95933	97374	-29983	-29674	-28320	-26126	62289	63380	67613	71248
Compensation of employees/Total	13672	14456	14832	15767	-545	-554	-573	-621	13127	13902	14259	15146
Wages and salaries	11031	11681	12019	12737	-545	-554	-573	-621	10486	11127	11446	12116
Employers' social contributions	2641	2775	2813	3030					2641	2775	2813	3030
Taxes on production and imports/Total	2087	2145	2238	2370	0	0	0	0	2087	2145	2238	2370
Other taxes on production	2087	2145	2238	2370					2087	2145	2238	2370
Property income/Total	7010	6395	6793	7699	26424	25448	23030	20681	33434	31843	29823	28380
Interest; definition National Accounts	6774	6122	6515	7433	-6774	-6122	-6515	-7433	0	0	0	0
Interest/Correction FISIM	-26424	-25448	-23030	-20681	26424	25448	23030	20681	0	0	0	0
Interest before correction for FISIM	33198	31570	29545	28114					33198	31570	29545	28114
Rent	236	273	278	266					236	273	278	266
Current taxes on income and wealth/Total	58087	56755	68250	68036	0	0	0	0	58087	56755	68250	68036
Current taxes on income	50759	49327	60631	60334					50759	49327	60631	60334
Other current taxes	7328	7428	7619	7702					7328	7428	7619	7702
Social contributions and benefits/Total	167112	174915	173658	182099	-94148	-95797	-97197	-101719	72964	79118	76461	80380
Net social contributions/Total	166887	174659	173348	181747	-93923	-95541	-96887	-101367	72964	79118	76461	80380
Employers' actual social contributions	57041	58756	60046	63174	-57041	-58756	-60046	-63174	0	0	0	0
Employers' imputed social contributions	11386	11826	12941	13855	-11386	-11826	-12941	-13855	0	0	0	0
Households' actual social contributions	72964	79118	76461	80380					72964	79118	76461	80380
Households' social contrib. supplements	34212	34217	32101	32911	-34212	-34217	-32101	-32911	0	0	0	0
The social insur. scheme service charges	-8716	-9258	-8201	-8573	8716	9258	8201	8573	0	0	0	0
Social benefits in cash/Total	225	256	310	352	-225	-256	-310	-352	0	0	0	0
Other social insurance benefits	225	256	310	352	-225	-256	-310	-352	0	0	0	0
Other current transfers/Total	20420	20548	21689	21036	5460	5463	5717	6014	25880	26011	27406	27050
Net non-life insurance premiums	9419	9289	10055	9941	5460	5463	5717	6014	14879	14752	15772	15955
Other current transfers/Miscellaneous current transfers	11001	11259	11634	11095					11001	11259	11634	11095
Final consumption expenditure/Total	305372	310430	321600	335632	-56762	-58610	-59650	-62871	248610	251820	261950	272761
Other individual final consumption	305372	310430	321600	335632	-56762	-58610	-59650	-62871	248610	251820	261950	272761
Capital transfers/Total	7552	7926	8061	7848	0	0	0	0	7552	7926	8061	7848
Capital taxes	1622	1855	1851	1742					1622	1855	1851	1742
Capital transfers/Other capital transfers	5930	6071	6210	6106					5930	6071	6210	6106
Gross capital formation/Total	33788	40321	41968	48602	-1288	-1468	-1463	-1432	32500	38853	40505	47170
Gross fixed capital formation/Total	33644	40235	41770	48591	-1149	-1391	-1285	-1439	32495	38844	40485	47152
Consumption of fixed capital	25951	26440	27187	29041					25951	26440	27187	29041
Net fixed capital formation	7693	13795	14583	19550	-1149	-1391	-1285	-1439	6544	12404	13298	18111
Changes in inventories incl. valuables/Total	144	86	198	11	-139	-77	-178	7	5	9	20	18
Changes in inventories	139	77	178	-7	-139	-77	-178	7	0	0	0	0
Acquisitions less disposals of valuables	5	9	20	18					5	9	20	18
Acq. less disposals of non-prod. assets	369	508	506	473					369	508	506	473

Explanation of adjustments

Intermediate consumption

- FISIM: 23642 million euros (offset in interest)

+ Wages in kind: 545 million euros (offset in wages)
+ Cost fraud: 252 million euros (partly offset in consumption)

- Intermediate consumption owner occupied dwellings (excl. FISIM): 6813 million euros
offset in consumption

Wages:

- Wages in kind: 545 million euros

Property income:

- FISIM: 26424 million euros (offset in intermediate consumption and consumption of households)

Social contributions and benefits:

- Employers' actual plus imputed social contributions: 68427 million euros
offset on resources side

\+ Social insurance scheme service charges: 8716 million euros (offset in consumption)

- Social benefits: 225 million euros (offset in resources)

Income transfers

\+ Insurance premiums: 5460 million euros (offset in consumption)

Final consumption expenditure

-Products retained for own final consumption: 42422 million euros (offset in output)

-Wages in kind to wages: 5027 million euros (offset in wages on resources side)

-Cost fraud: 763 million euros (partly offset in wages on resources side)

+ Intermediate consumption of owner occupied dwellings: 6813 million euros (offset in intermediate consumption)

- Insurance service charge: 5460 million euros (offset in insurance premium)

- FISIM (at the moment fully in IC): -325 million euros (offset in interest)

- Social insurance scheme service charges: 8716 million euros (offset in social contributions)

- Imputed rent of holiday homes abroad: 1492 million euros (offset in property income)

Capital transactions

- Own account GFCF: 1149 million euros (offset in output)
- Changes in inventories: 139 million euros

Table 10 Changes in balances current account

million euros	National accounts				Adjustments				BM-system			
	2015	2016	2017*	2018*	2015	2016	2017*	2018*	2015	2016	2017*	2018*
Balance resources and uses	23838	21146	15645	11028	-26893	-24861	-22646	-22144	-3055	-3715	-7001	-11116

Most important transactions influencing the balance of resources and uses are Investment income attributable to policyholders and the Adjustment, change in pension entitlements. In a further elaboration of this accounting framework balancing items of a value-added type, disposable-income type, etc. should be defined. The contents of such balancing items will of course differ from the SNA-items depending on the level of aggregation of transactions. If, for example, the idea of business models taken as a principle for aggregation, interest, in the SNA recorded as property income will be part of productive activities.

Conclusions of this chapter

As a consequence of the presentation of economic data in the SNA in the form of T-accounts by specific economic process (production, income distribution, use of income, accumulation) transactions concerning resources and uses are dispersed over the various accounts. A 'simple' overview showing all resources and uses is not always readily at hand, while it would be helpful for the analysis of the activities of the various actors in the economy.

A step in this direction is made in the national accounts publication of Statistics Netherlands where resources and uses of the current accounts are presented in one table (see annex 2). Compared to the BM-system presented above the main differences concern imputed transactions and the omission of financial transactions. That the addition of the latter is very useful is shown in a recent paper by Notten and Wouters (2019) in which the consumption of households is analyzed, including financial transaction. One conclusion in the paper is that the growth of consumption of households is less than GDP-growth, because households spent (relatively) more money for the repayments of their mortgages.

Next to the dispersion of transactions, imputed transactions make it hard to understand the contents of the accounts for many users. A publication strategy comparable to the approach of SN is a first step. A second step would be to remove imputed and rerouted transactions as far as possible, starting for example with imputed items appearing as both resources and uses, like imputed social contributions.
Next to that, analysis like Notten and Jonkers carried out, help users a lot in understanding the economy.

In the base, none of these ways of clarifying economic developments require an adjustment of the SNA. Another way of presenting and explaining the data would be a step forward. Combined with additional analysis presented in papers and (web) articles supports a more extended use of NA-data.

7. Summary of conclusions

The ‘production heart’ of the SNA is the base for the traditional breakdown of macro-economic indicators to industries. This breakdown however, shows only one side of the way an economy operates, the way products are produced i.e. production processes. Business models that companies apply in order to make money are not in scope in an industry classification and might shed a different light on an economy. A light which might help to better interpret money flows (also within MNE’s) in the economy and in this way may lead to improvement of GNI-estimates.

Are business models useful for economic analysis?

Expanding product ranges, outsourcing of physical production, etc. do not give a full insight in the way companies are making money. A breakdown of the economy using business models could help to analyze generation of income and the structural development of the ways of making money in the course of time. In the way business models are implemented in businesses, digitization and globalization play an important role. The use of business models in statistics provides view on the economy from another angle and might help to better understand the impact of digitalization and globalization.

What is the impact of digitization and globalization on business models?

The analysis of present business models shows that apart from a limited number of new models the basic business models are not substantially changed in the course of time.
For the more ‘traditional‘ business models the impact of digitization concerns mainly an expansion to world-wide markets coming in reach by the internet. Digitization lead to new products like data selling and streaming services for which the basic business model fits within the traditional types but the scale on which they are applied is overwhelming. Digitization is in many aspects also a driving force for globalization of both markets and production processes.

Are business models disruptive?

A cause for the feeling of disruptiveness might be the scale on which some of the business models are applied nowadays and the privacy aspect of the personal data collected especially in free services. Nevertheless, statistical offices face ‘disruptiveness’ in their macro-economic estimates, which is mainly caused by changes in the internal organization of MNE’s by shifting of profits and changing the allocation of intellectual property.

Is data observation a problem?

The worldwide scale on which companies are applying their business models makes the observation of data very complicated. For example, direct transactions between consumers and non-resident suppliers will probably escape on the view of the statistical offices. Therefore making estimates of imports of services will be problematic. Cross-border

organization of production processes lead to substantial intra-concern transactions, which are often MNE's, are difficult to interpret. An investigation how to observe such transaction adequately and a search for new data sources seems necessary.

Is 'real-world' accounting helpful?

Real-world transactions on resources and uses should be the starting point for economic analysis, leading to conclusions on the way the economy operates and develops. In the SNA a number of real-world transactions need to be adjusted in order to fit definitional framework. Next to that, a number of (in the real world) non-existing transactions are imputed in order to fulfil the requirements of the production heart of the SNA. As a consequence such adjustments make it hard for many users to understand and interpret the contents of the national accounts.
The presentation in process-oriented T-accounts results in a dispersed presentation of resource flows from, for example, business models and also of uses. A 'simple' overview showing all resources and uses is not always readily at hand, while it would be very useful for the analysis of the activities of the various actors in the economy.

Ideally one would start economic analysis with well-presented real-world transaction-data. This is however hardly possible, because the statistical programs of most national statistical offices are already SNA-oriented. A second best solution could therefore be a transformation of the SNA-data by removing (most 'disturbing') imputed and rerouted transactions.

Do we need an alternative for the SNA?

A stated above, from the point of view of scholarship real-world data should be a starting point for analyzing, leading to confirmation of existing or new economic theories. As a second best solution transformation, another way of presenting and further explaining of SNA-data (á la Notten and Jonkers) would already be a step forward. Additional analysis, closer to the real world transaction, presented in papers and (web) articles supports a more extended use of NA-data.

Further research

Disruptiveness in economic indicators seems to be caused mainly by organizational activities of MNE's. A view on internal business models of MNE's would be very interesting and could clarify the intra concern flows and, for example, shed light on ways of tax minimization are implemented in practice. Next to that the impact on macro-economic indicators can be analyzed.
Further a split of the corporate sectors (S11 and S12) of the national accounts into MNE's and non-MNE's could shed more light on the 'real national' economic development.

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Annex 1. Grant agreement

Activity 8.2 aims at improving national accounts and GNI data by identifying, defining and classifying the relevant transactions which determine how much money is earned in the Netherlands.

It has long been recognized that globalization, in combination with the growing importance of intangible assets, creates several measurement issues in the context of national accounts. Existing statistical measures, such as GDP and GNI, become harder to interpret, and are nowadays less well suited as a proxy of economic performance or material well-being than they used to be. For this reason, Statistics Netherlands (SN) plans to investigate the possibilities of developing a flexible framework based on actual transactions and money flows directly linked to bookkeeping. Definition and classification of transactions are two important aspects in the development in such a framework. From such a framework the transformation to ESA2010 concepts can be carried out in a consistent and transparent way. Next to that the framework may give rise to new additional indicators that will offer a broader view on globalization in economic performance than GDP and other existing indicators. Based on this framework, it should be possible to get a better idea about how much money is actually earned in the Netherlands and what the relevant transactions in this context are.

A flexible framework for describing the economy makes it possible to stay aligned with changes in the institutional (a.o. legislation, what is a company) and operational settings (how do people earn their money, etc.). From this framework, together with an up-to-date knowledge of the content of transactions it will be possible to make the transformation to ESA2010 concepts in a consistent, transparent and more adequate way, with, as a consequence, higher quality estimates of GDP and GNI.

Research questions

The development of a new framework is a rather ambitious goal. The exploratory research proposed here can be seen as a first step towards this goal. In this first step, SN will concentrate on the following topics:

- Identifying, defining and classifying the relevant transactions which determine how much money is earned in the Netherlands;
- Investigate how these transactions are embedded in the present SNA.

Annex 2 Resources and uses in the Dutch National Accounts publication

Resources

million euros			2015	2016	2017*	2018*
Imports of goods and services	Total		2744375	2790406	2889091	3026124
Imports of goods and services	Imports of goods					
Imports of goods and services	Imports of services	Total				
Imports of goods and services	Imports of services	Imports of services excluding FISIM				
Imports of goods and services	Imports of services	Imports of FISIM				
Output	Total		1338856	1360246	1431012	1505788
Output	Market output	Total	1163711	1182481	1248888	1317122
Output	Market output	Financial intermediation service (FISIM)	36452	34746	32757	30000
Output	Market output	Other market output	1127259	1147735	1216131	1287122
Output	Output produced for own final use	Total	57267	59053	60827	62191
Output	Output produced for own final use	Own-account capital formation	15974	16559	17110	17061
Output	Output produced for own final use	Products retained for own consumption	41293	42494	43717	45130
Output	Non-market output	Total	117878	118712	121297	126475
Output	Non-market output	Payments for non-market output	10980	11144	11202	11454
Output	Non-market output	Other non-market output	106898	107568	110095	115021
Compensation of employees	Total		323579	333541	345296	360782
Compensation of employees	Wages and salaries		255152	262959	272309	283753
Compensation of employees	Employers' social contributions		68427	70582	72987	77029
Taxes on production and imports	Total		76313	81627	85175	90309
Taxes on production and imports	Taxes on products	Total	67233	71908	75043	79729
Taxes on production and imports	Taxes on products	Value added tax (VAT)	44746	47849	49833	52619
Taxes on production and imports	Taxes on products	Taxes, duties on imports excluding VAT	6839	8339	8990	10310
Taxes on production and imports	Taxes on products	Other taxes on products	15648	15720	16220	16800
Taxes on production and imports	Other taxes on production		9080	9719	10132	10580
Subsidies (-)	Total		8640	9321	10058	10387
Subsidies (-)	Subsidies on products		723	991	1126	1208
Subsidies (-)	Other subsidies on production		7917	8330	8932	9179
Property income	Total		417327	412369	410707	432414
Property income	Interest	Interest; definition National Accounts	117677	104943	102301	104193
Property income	Interest	Correction FISIM	-44726	-42362	-36454	-30720
Property income	Interest	Interest before correction for FISIM	162403	147305	138755	134913
Property income	Distributed income of corporations	Total	222529	240809	244265	240501
Property income	Distributed income of corporations	Dividends	220600	239206	242358	238588
Property income	Distributed income of corporations	Withdrawals from income of quasi-corp.	1929	1603	1907	1913
Property income	Reinvested earnings on foreign investm.		6862	709	1029	23637
Property income	Other investment income	Total	64417	62135	59142	60835
Property income	Other investment income	Investm. income attrib. to policy holder	5529	4925	4025	3636
Property income	Other investment income	Income payable on pension entitlements	34212	34217	32101	32911
Property income	Other investment income	Inv. income attributable to shareholders	24676	22993	23016	24288
Property income	Rent		5842	3773	3970	3248
Current taxes on income and wealth	Total		77760	81566	93533	96567
Current taxes on income and wealth	Current taxes on income		70304	73993	85761	88714
Current taxes on income and wealth	Other current taxes		7456	7573	7772	7853
Social contributions and benefits	Total		292139	302496	304210	315798
Social contributions and benefits	Net social contributions	Total	169653	177463	176334	185013
Social contributions and benefits	Net social contributions	Employers' actual social contributions	58422	60182	61625	65023
Social contributions and benefits	Net social contributions	Employers' imputed social contributions	11386	11826	12941	13855
Social contributions and benefits	Net social contributions	Households' actual social contributions	74480	80637	77994	81929
Social contributions and benefits	Net social contributions	Households' social contrib. supplements	34246	34250	32137	32946
Social contributions and benefits	Net social contributions	The social insur. scheme service charges	-8881	-9432	-8363	-8740
Social contributions and benefits	Social benefits in cash	Total	122486	125033	127876	130785
Social contributions and benefits	Social benefits in cash	Social security benefits in cash	52732	53299	53454	53815
Social contributions and benefits	Social benefits in cash	Other social insurance benefits	49714	50841	53066	55483
Social contributions and benefits	Social benefits in cash	Social assistance benefits in cash	20040	20893	21356	21487
Other current transfers	Total		166145	168821	170937	175076
Other current transfers	Net non-life insurance premiums		16229	16364	15967	15998
Other current transfers	Non-life insurance claims		15292	15023	16167	16057
Other current transfers	Current transfers within gen. government		113798	116772	117285	121513
Other current transfers	Current international co-operation		222	249	301	228
Other current transfers	Miscellaneous current transfers		20604	20413	21217	21280
Other current transfers	The VAT- and GNI-based EU own resource					
Adjustm. change in pension entitlements			23279	22199	20813	20971
Capital transfers	Total		20337	18220	17350	18032
Capital transfers	Capital taxes		1614	1846	1841	1731
Capital transfers	Investment grants		8391	6742	6689	6300
Capital transfers	Other capital transfers		10332	9632	8820	10001

Uses

Total			2773465	2807991	2886117	3021215
Exports of goods and services	Total					
Exports of goods and services	Exports of goods					
Exports of goods and services	Exports of services	Total				
Exports of goods and services	Exports of services	Exports of services excluding FISIM				
Exports of goods and services	Exports of services	Exports of FISIM				
Intermediate consumption (-)			718021	725422	769446	813011
Compensation of employees	Total		330267	340586	352818	369439
Compensation of employees	Wages and salaries		260690	268805	278473	290828
Compensation of employees	Employers' social contributions		69577	71781	74345	78611
Taxes on production and imports	Total		79430	84725	88314	93526
Taxes on production and imports	Taxes on products		69896	74504	77706	82470
Taxes on production and imports	Other taxes on production		9534	10221	10608	11056
Subsidies (-)	Total		7042	7894	8561	8881
Subsidies (-)	Subsidies on products		723	951	1090	1190
Subsidies (-)	Other subsidies on production		6319	6943	7471	7691
Property income	Total		408591	414128	395978	414367
Property income	Interest	Interest; definition National Accounts	111930	99898	101713	103040
Property income	Interest	Correction FISIM	-47022	-44860	-38024	-32486
Property income	Interest	Interest before correction for FISIM	158952	144758	139737	135526
Property income	Distributed income of corporations	Total	178359	193462	194136	202029
Property income	Distributed income of corporations	Dividends	176498	191576	192068	199783
Property income	Distributed income of corporations	Withdrawals from income of quasi-corps.	1861	1886	2068	2246
Property income	Reinvested earnings on foreign investm.		51714	58035	40161	48559
Property income	Other investment income	Total	60746	58960	55998	57491
Property income	Other investment income	Investm. income attrib. to policy holder	5631	4932	4033	3645
Property income	Other investment income	Income payable on pension entitlements	34246	34250	32137	32946
Property income	Other investment income	Inv. income attributable to shareholders	20869	19778	19828	20900
Property income	Rent		5842	3773	3970	3248
Current taxes on income and wealth	Total		76248	79755	91842	94042
Current taxes on income and wealth	Current taxes on income		68920	72327	84223	86340
Current taxes on income and wealth	Other current taxes		7328	7428	7619	7702
Social contributions and benefits	Total		291872	302235	303893	315210
Social contributions and benefits	Net social contributions	Total	166887	174659	173348	181747
Social contributions and benefits	Net social contributions	Employers' actual social contributions	57041	58756	60046	63174
Social contributions and benefits	Net social contributions	Employers' imputed social contributions	11386	11826	12941	13855
Social contributions and benefits	Net social contributions	Households' actual social contributions	72964	79118	76461	80380
Social contributions and benefits	Net social contributions	Households' social contrib. supplements	34212	34217	32101	32911
Social contributions and benefits	Net social contributions	The social insur. scheme service charges	-8716	-9258	-8201	-8573
Social contributions and benefits	Social benefits in cash	Total	124985	127576	130545	133463
Social contributions and benefits	Social benefits in cash	Social security benefits in cash	54476	55075	55293	55633
Social contributions and benefits	Social benefits in cash	Other social insurance benefits	50428	51568	53856	56298
Social contributions and benefits	Social benefits in cash	Social assistance benefits in cash	20081	20933	21396	21532
Other current transfers	Total		176921	175852	178270	184552
Other current transfers	Net non-life insurance premiums		15887	15560	15831	15794
Other current transfers	Non-life insurance claims		15640	15739	16239	16139
Other current transfers	Current transfers within gen. government		113798	116772	117285	121513
Other current transfers	Current international co-operation		2736	2667	2644	3300
Other current transfers	Miscellaneous current transfers		22843	22835	22879	22961
Other current transfers	The VAT- and GNI-based EU own resource		6017	2279	3392	4845
Adjustm. change in pension entitlements			23106	21993	20565	20712
Final consumption expenditure	Total		483170	490883	506752	529064
Final consumption expenditure	Actual individual final consumption	Total	427351	433259	448239	468004
Final consumption expenditure	Actual individual final consumption	Social transfers in kind Total	121979	122829	126639	132372
Final consumption expenditure	Actual individual final consumption	Social transfers in kind Transfers in kind non-r	51079	49944	51582	53961
Final consumption expenditure	Actual individual final consumption	Social transfers in kind Transfers in kind mark	70900	72885	75057	78411
Final consumption expenditure	Actual individual final consumption	Other individual final consumption	305372	310430	321600	335632
Final consumption expenditure	Actual collective final consumption		55819	57624	58513	61060
Capital transfers	Total		20634	19240	17696	18415
Capital transfers	Capital taxes		1622	1855	1851	1742
Capital transfers	Investment grants		7923	6339	6270	5988
Capital transfers	Other capital transfers		11089	11046	9575	10685
Gross capital formation	Total		155079	145121	152004	159903
Gross capital formation	Gross fixed capital formation	Total	152533	141675	148670	157502
Gross capital formation	Gross fixed capital formation	Consumption of fixed capital	115742	117912	121452	127261
Gross capital formation	Gross fixed capital formation	Net fixed capital formation	36791	23763	27218	30241
Gross capital formation	Changes in inventories incl. valuables	Total	2546	3446	3334	2401
Gross capital formation	Changes in inventories incl. valuables	Changes in inventories	2244	3140	3131	2268
Gross capital formation	Changes in inventories incl. valuables	Acquisitions less disposals of valuables	302	306	203	133
Acq. less disposals of non-prod. assets			3084	157	-22	93

Explanation of symbols

Empty cell	Figure not applicable
.	Figure is unknown, insufficiently reliable or confidential
*	Provisional figure
**	Revised provisional figure
2018–2019	2018 to 2019 inclusive
2018/2019	Average for 2018 to 2019 inclusive
2018/19	Crop year, financial year, school year, etc., beginning in 2018 and ending in 2019
2016/17–2018/19	Crop year, financial year, etc., 2016/17 to 2018/19 inclusive

Due to rounding, some totals may not correspond to the sum of the separate figures.

Colophon

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