14th Meeting of the Advisory Expert Group on National Accounts,
5-9 October 2020, Virtual Meeting

Agenda item: 5.3.2

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Treatment of free digital assets and services

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Introduction

Free assets and free services supplied by market producers have been a key part of the debate over possible mismeasurement of the digital economy. Some claim that the proliferation of free products in the digital economy means that price is no longer the sole satisfactory measure of value of outputs of market producers. Others argue that free products are primarily an issue for measurement of prices and volumes, as in many cases they are already captured indirectly within the level of GDP.

Software is the most important type of free asset. Open source software may often be developed by employees whose compensation is already included in estimates of own-account investment in software. Also, open source and other free software may be bundled with other items. However, imputed values of free software in a satellite account may have important analytical applications, and investment in open source software could be missing from GDP in some cases.

Two approaches have been proposed for free services of digital platforms: a bundling approach and a bartering approach.

Bundling Approach

The bundling approach recognizes that platforms typically have a subsidized side, which is often free, and a funded side, which covers the platform's cost of production and leaves it with a positive net operating surplus. The funders of the platform expect to receive at least enough revenue from transactions that the platform facilitates to cover their expenses. For example, many free platforms are funded by advertisers who recover this expense as part of the prices of the advertised items. In the bundling approach, the free services of the platform are viewed as paid for indirectly as part of the transactions that the platform helps to facilitate, and this is already included in GDP. (A distinctive feature of bundling on platforms is that the free components and marked-up components of the bundle of outputs supplied by platforms have different users, and the mark-ups paid by the free side users are on outputs of the funders, not the platform.)

This approach is fully consistent with the recommendations in the guidance note on the 'Recording and valuation of data in national accounts', as the only additional output of the platforms' activity is the production of 'data', be this fixed asset (long-lived data) or something else (short-lived data). Observable phenomena, which the platforms capture and turn into data, are non-produced and are not in the SNA asset boundary. The free services of the platform are thus a lure that attracts users whose presence generates positive externalities for the platform.

This approach argues that succumbing to the attraction of a lure is not the same as agreeing to barter things of value for each other.

Bartering Approach

Under the bartering approach, the digital platform produces a software asset from which a household receives capital services in exchange for a license to observe/collect observable phenomena on the household's activities and characteristics. Imputed payments by the platform for the license to collect observable phenomena and imputed payments by the household for the capital services are recorded in a household satellite account in which the household uses the "purchased" capital services as intermediate consumption in the production of own-account services. The households' imputed purchases of capital services could alternatively be included in the output of the platform in the core national accounts (rather than a household satellite account), which would increase GDP. In either case, the digital platform builds a new data asset from the observable phenomena which acts as a new input into the production of advertising services, which is also fully consistent with the recommendations in the guidance note on the 'Recording and valuation of data in national accounts'.

Under the bartering approach, the participation of the household in the series of transactions – including the household's role in the production of the new data asset – is revealed in the household satellite account. To see the participation of all parties involved in the series of transactions still requires a measurement methodology.

Going Forward

The Task-team to continue to explore the potential to synthesize these two approaches into a single proposal.

The AEG is requested to:

- Comment on the possible approaches to free services offered by digital platforms and suggest the most appropriate treatment in national accounts considering both the core and satellite accounts.

Introduction

Free products supplied by market producers have been a key part of the debate over possible mismeasurement of the digital economy

- Some claim that the proliferation of free products in the digital economy means that price is no longer the sole satisfactory measure of value of outputs of market producers
- Others regard the free products as an issue for measurement of price and volume but as already measured indirectly in GDP value

The main issue is whether to adopt the bundling approach or the barter approach for free services of digital platforms

The AEG is requested to:

-        Comment on the possible approaches to free services offered by digital platforms and suggest the most appropriate treatment in national accounts considering both the core and satellite accounts

The Bundling Approach to Free Platforms

Free and subsidized outputs are common because they help sell other things at a mark-up

- The bundle of cross-subsidized and marked-up outputs generates enough revenue to keep the suppliers' net operating surplus positive

Platforms are suppliers of services that help two (or more) parties to interact

- They usually have a subsidized side, which is often free, and a funder side

Mark-ups paid by the funder side cover the cost of the free side – the platform's net operating surplus remains positive

- The platform's funders recover this expense as part of the sales enabled by the platform's services (e.g., profits on the advertised products fund the ads)
- The users of the free platform services pay for them indirectly
- Free services are offered as a lure – not as part of an agreed exchange of items of value

The Barter Approach to Free Platforms

The platform users and the platform both get something of value

- The platform gets opportunities to observe users' activities and characteristics and create data assets and to monetize users' attention by showing them ads

The free services are bartered for a license to collect observations on the users

To record the barter transaction, payments for a license to observe the users and expenditures by the users on the free services must be imputed
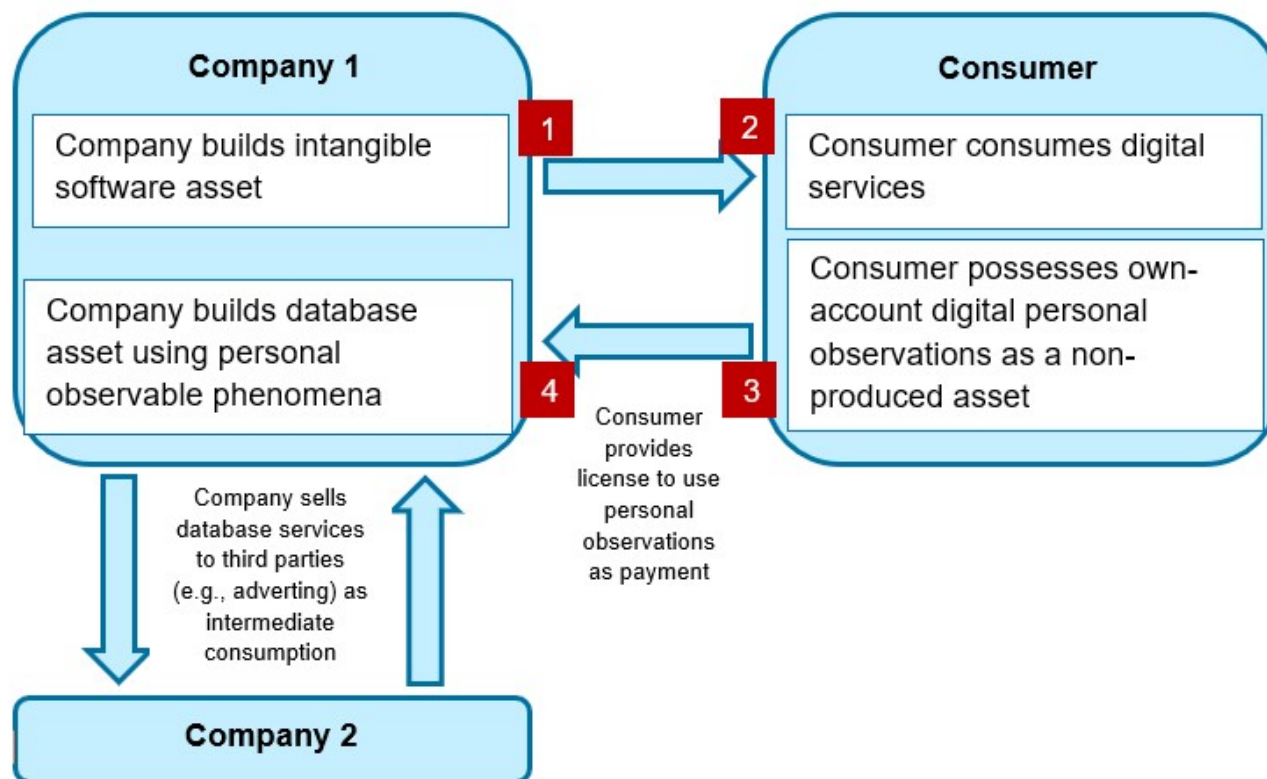
Because payments for the license to observe the users are a rent, the imputed expenditures on the free services increase the platform's value added by the same amount as its output

The imputed expenditures on free services add to GDP under the barter approach

Investment in data assets adds to GDP under both approaches

Barter of license to observe and record the user's activities in exchange for access to "free" content

Figure 1: Barter of Personal Observable Phenomena for "Free" Services

Company 1
- Company builds intangible software asset
- Company builds database asset using personal observable phenomena

1 → 2
← 4   3

Consumer provides license to use personal observations as payment

Company sells database services to third parties (e.g., adverting) as intermediate consumption

Company 2

Consumer
- Consumer consumes digital services
- Consumer possesses own-account digital personal observations as a non-produced asset

Source: Adapted from Heys (2020).

Imputed payment for the license to collect data on the user represents <u>a rent</u>

Entire imputed value of the free digital services consumed by the platform user flows into the platform's value-added

Own-account investment in a long-lived database also adds to the platform's output

SNA 2008 already counts selling the database services to third parties as output

Free Products and Price and Volume Growth

GDP level focuses on productive activities that generate income (or, in some cases, free up income)

Changes in consumer surplus are relevant for measures of price and volume growth of household final consumption

Making an item free, or adding a new free item to the bundle, reduces the quality-adjusted price of the bundle

Compiling a quality-adjusted deflator for household final consumption expenditures that accounts for changes in the availability of free products may require assumptions and techniques that would be more suitable for a supplementary indicator than for official measures of GDP price and volume growth (e.g. Brynjolfsson et al., 2019 and 2020)