

## Free services

### 6th World KLEMS Conference

Martin van Elp and Nino Mushkudiani

March 16, 2021

# Have you paid for these services?



WIKIPEDIA  
The Free Encyclopedia

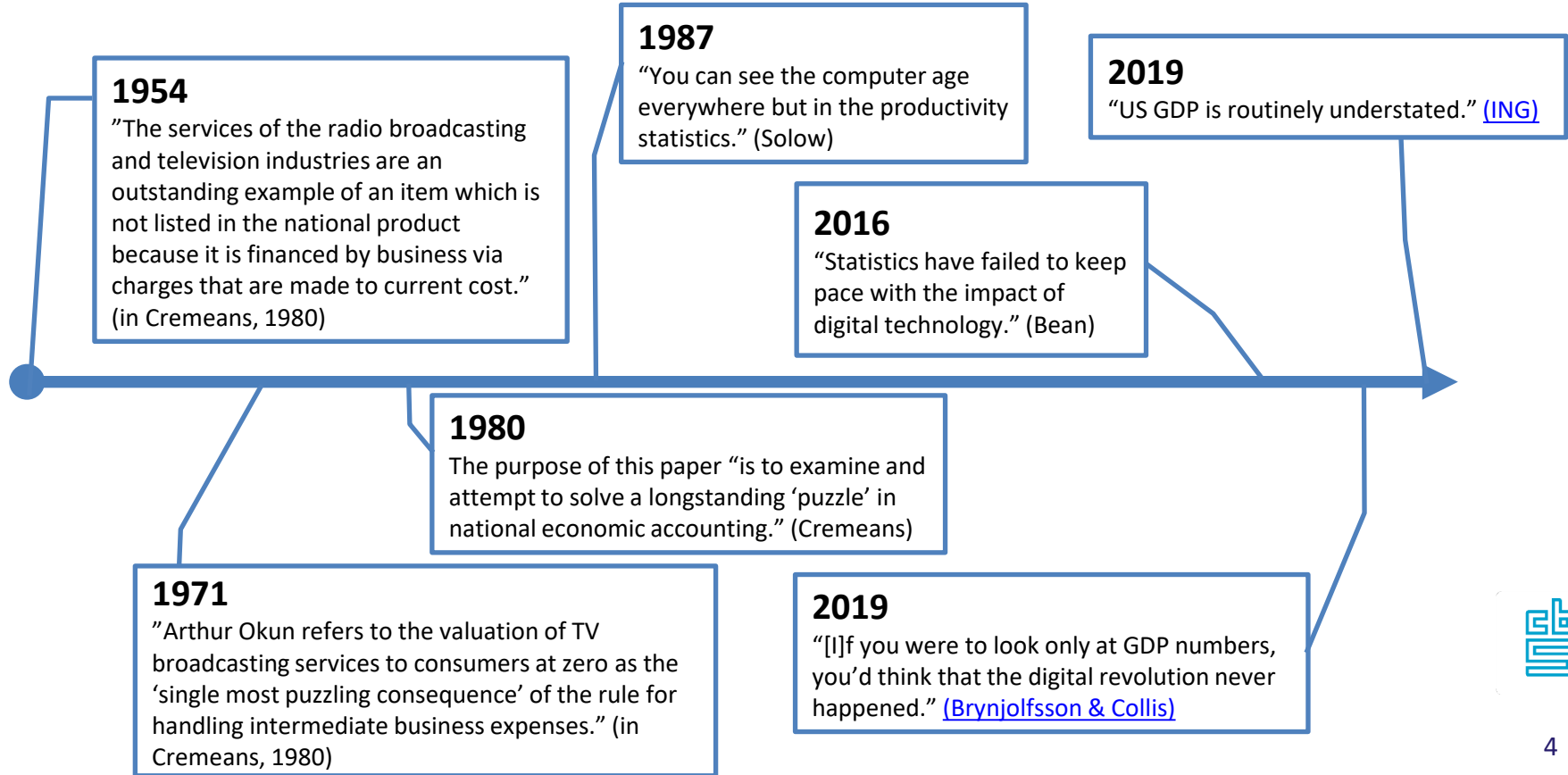


## Free services

*All services provided free of charge by households and companies to households, companies and government.*



# Are the national accounts wrong?



# Where's the confusion?

- **Brynjolfsson, Dieuwert, Fox cs.**

Welfare economics (utility), consumer surplus, reservation price

“The issue of free media (and services) has attracted renewed attention of researchers with the advent of the Internet and digitalisation. Slowing rates of productivity growth have raised questions about the conceptual basis of GDP and output, and whether current compilation methods are adequate to capture them.”

(Ahmad & Schreyer, 2016)

# Today

1. Where are free services in the big picture?
2. How can free services be included in the national accounts?
3. What is Dutch GDP, adjusted for free services?

Summary & Ongoing work



# Where are free services in the big picture?

- Separate class, besides goods and services (because the price is zero)
- Users: all sectors
- Producers: businesses and households
- Diverse business models



# Where are free services in the big picture?

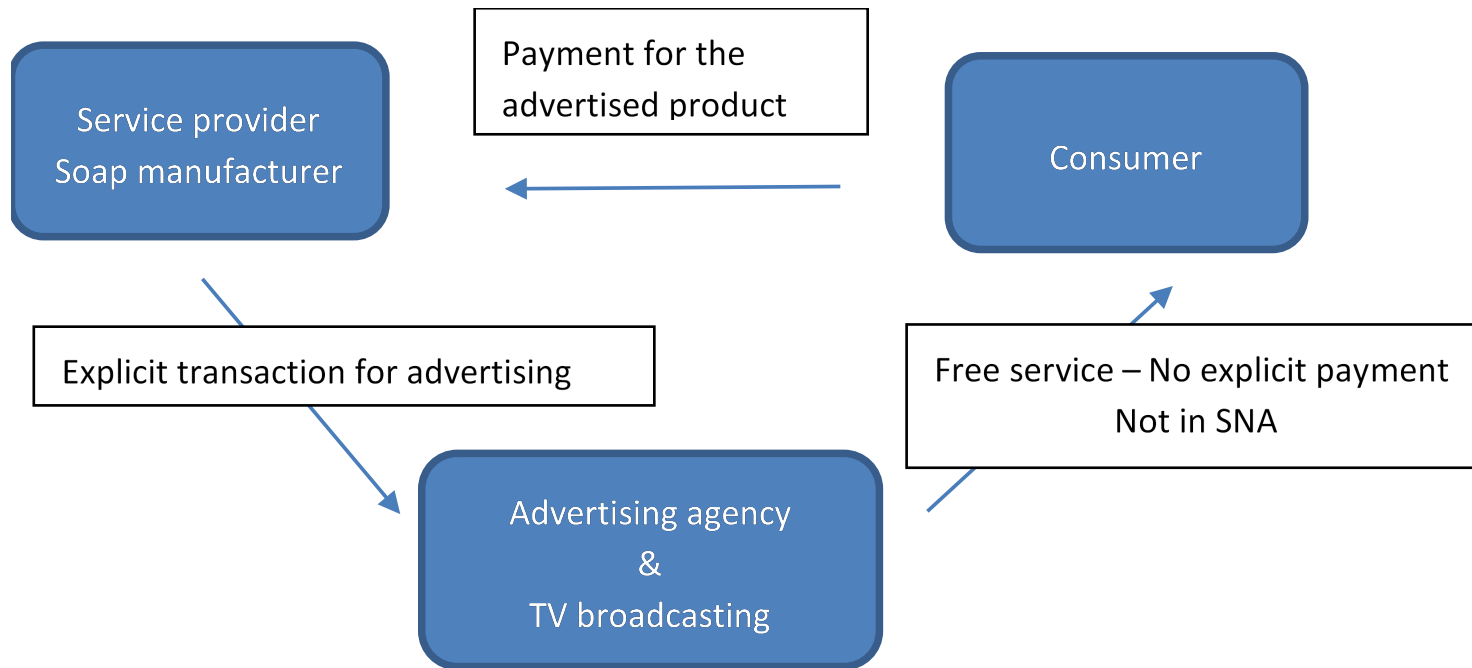
## Business model perspective





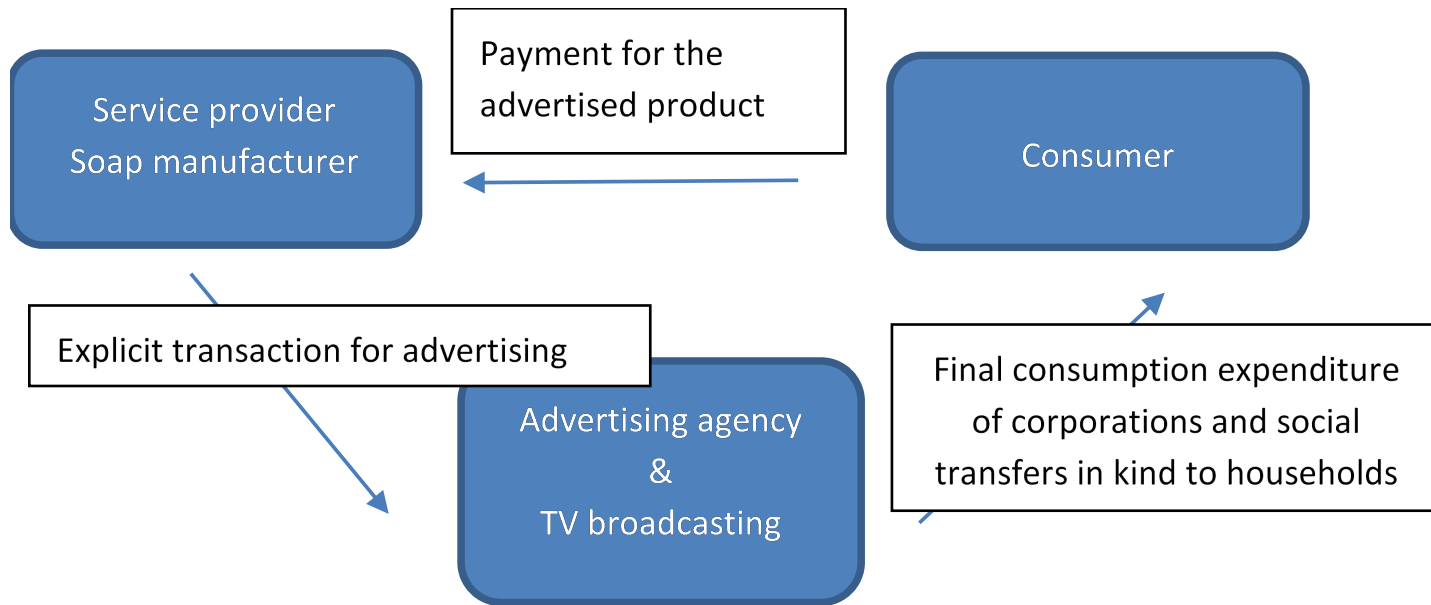
# How can free services be included in the NA?

## Current System of National Accounts



# How can free services be included in the NA?

## Final consumption of corporations



# How can free services be included in the NA?

## Other approaches

- Production by households of viewership services, and bartering transactions for entertainment.  
See for example Nakamura, Samuels & Soloveichik (2017).
- Quality adjustment, based on complementary goods.

# What is Dutch GDP adjusted for free services?

Chosen approach:

**Final consumption of corporations**

Which fraction of intermediate use is final consumption?

- Occupations (8) that generate free services
- Labour accounts
- Input-output table

# What is Dutch GDP adjusted for free services?

Eight occupations, from the Labour Force Survey

1. Authors and linguists
2. Journalists
3. Visual artists
4. Other creative and performing artists
5. Graphic and product designers
6. Artistic and cultural associate professionals
7. Sales, marketing and public relations professionals
8. Telecommunications and broadcasting technicians



# What is Dutch GDP adjusted for free services?

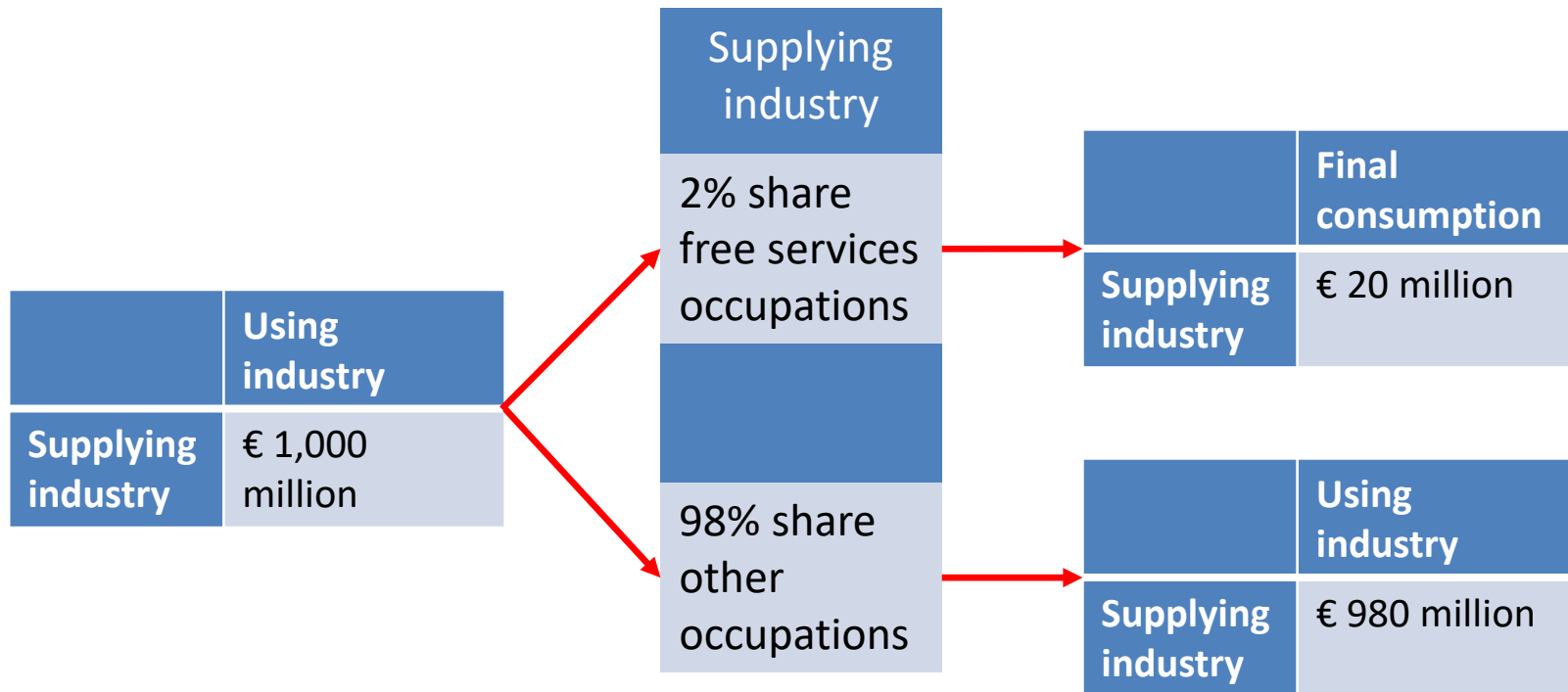
## The eight occupations in the labour accounts

NACE	Description	Profession	Hours Share	Salary Share
01	Agriculture	All, except marketing	0.43	0.47
01	<b>Agriculture</b>	<b>Marketing</b>	1.40	<b>2.22</b>
10-12	Manufacture of food and beverages	All, except marketing	1.49	1.43
10-12	Manufacture of food and beverages	Marketing	4.72	5.58
19	<b>Manufacture of coke and petroleum</b>	<b>All, except marketing</b>	<b>1.73</b>	1.43
19	Manufacture of coke and petroleum	Marketing	2.48	2.91
35	Energy supply	All, except marketing	1.35	0.97
35	Energy supply	Marketing	5.17	4.17
41	Construction buildings, development	All, except marketing	0.27	0.14
41	Construction buildings, development	Marketing	0.41	0.36



# What is Dutch GDP adjusted for free services?

## Input-output table



# What is Dutch GDP adjusted for free services?

## Results (2015)

Component	Hours	Wages
Consumption of free services, excluding marketing	8,651	6,910
Consumption of free services, marketing	15,038	13,949
GDP	23,689	20,858

This translates to **1.0 - 3.4%** of GDP.

## FREE SERVICES MATTER





# Summary

- Free services are services provided free of charge, by households and businesses, and are currently outside of the SNA production boundary.
- Experimental inclusion of free services in the national accounts has material impact on the level of GDP, for the Netherlands.

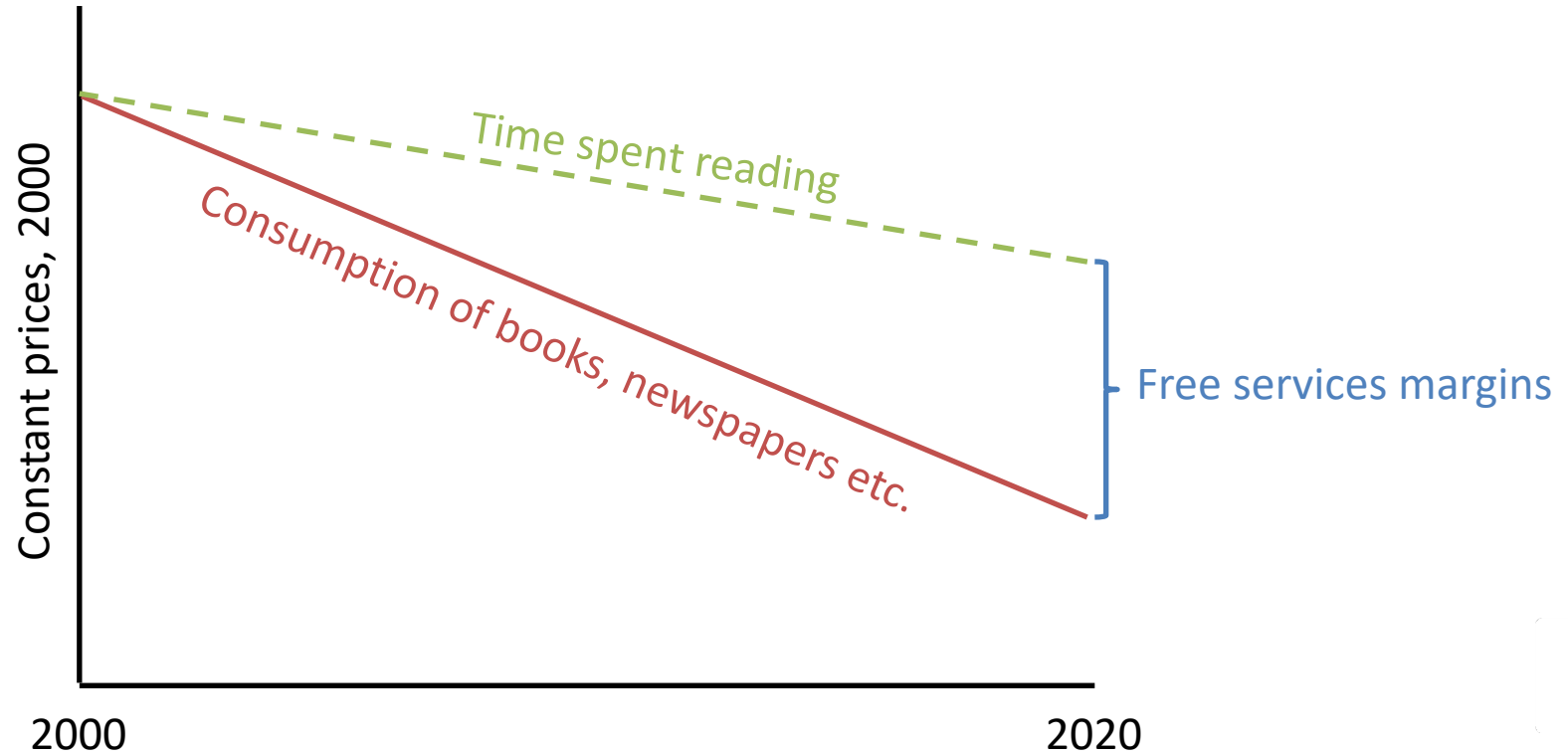


# Ongoing work

1. Sensitivity analysis of the preceding results
  - Include IT professions
  - Differentiate shares applied to using industries based on how consumer-oriented they are
  - Maybe volume growth?
2. Free services margins
  - A consumption perspective approach



# What are free services margins?



# Contact

Martin van Elp

< [m.vanelp@cbs.nl](mailto:m.vanelp@cbs.nl) >

Nino Mushkudiani

< [n.mushkudiani@cbs.nl](mailto:n.mushkudiani@cbs.nl) >

Nicky Kuijpers

< [nj.kuijpers@cbs.nl](mailto:nj.kuijpers@cbs.nl) >

# References

- Ahmad, N., & Schreyer, P. (2016). Measuring GDP in a Digitalised Economy. OECD Statistics Working Papers. Paris: OECD.
- Cremeans, J. (1980). Consumer services provided by business through advertising-supported media in the United States. *Review of Income and Wealth (26)*, 151-174.
- IMF. (2018). Measuring the Digital Economy. Washington, D.C.: International Monetary Fund.
- Nakamura, L., Samuels, J., & Soloveichik, R. (2017). *Measuring the "Free" Digital Economy within the GDP and Productivity Accounts*. Philadelphia: Federal Reserve Bank of Philadelphia Working Papers.
- Arthur M. Okun (1971). Social Welfare Has No Price Tag, *Survey of Current Business*, Anniversary Issue, The Economic Accounts of the US.: Retrospect and Prospect, Vol. 51, No. 7, Part 11, p. 131.
- Robert Solow (1987). "We'd better watch out", New York Times Book Review, July 12, 1987, page 36.
- United Nations. (2008). *System of National Accounts*. New York: United Nations.

