Office for National Statistics

Measuring and valuing unpaid household service work

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- Why is it important to measure it?
- How do we measure it?
- Time use surveys, and alternatives
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Unpaid household service work

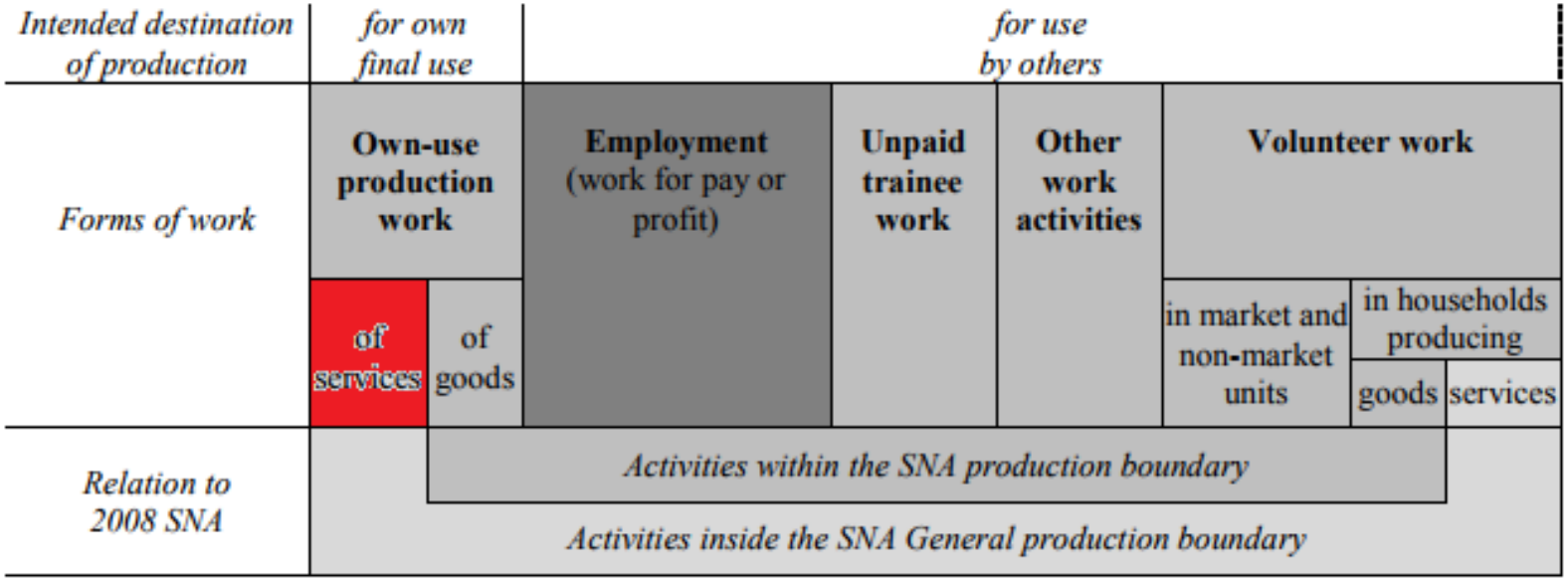
- Unpaid household service work defined within Resolution 1 of 19th International Conference of Labour Statisticians.

- Activities include:
  - Preparing and serving meals
  - Looking after children and adults
  - Cleaning and maintaining one's own dwelling.

- Activities for inclusion usually dictated by the third party criterion.

How does it fit within the SNA?

Diagram 1. Forms of work and the System of National Accounts 2008



- Unpaid household service work (red box) sits outside of the SNA production boundary.
- This means that outside of measures such as GDP.

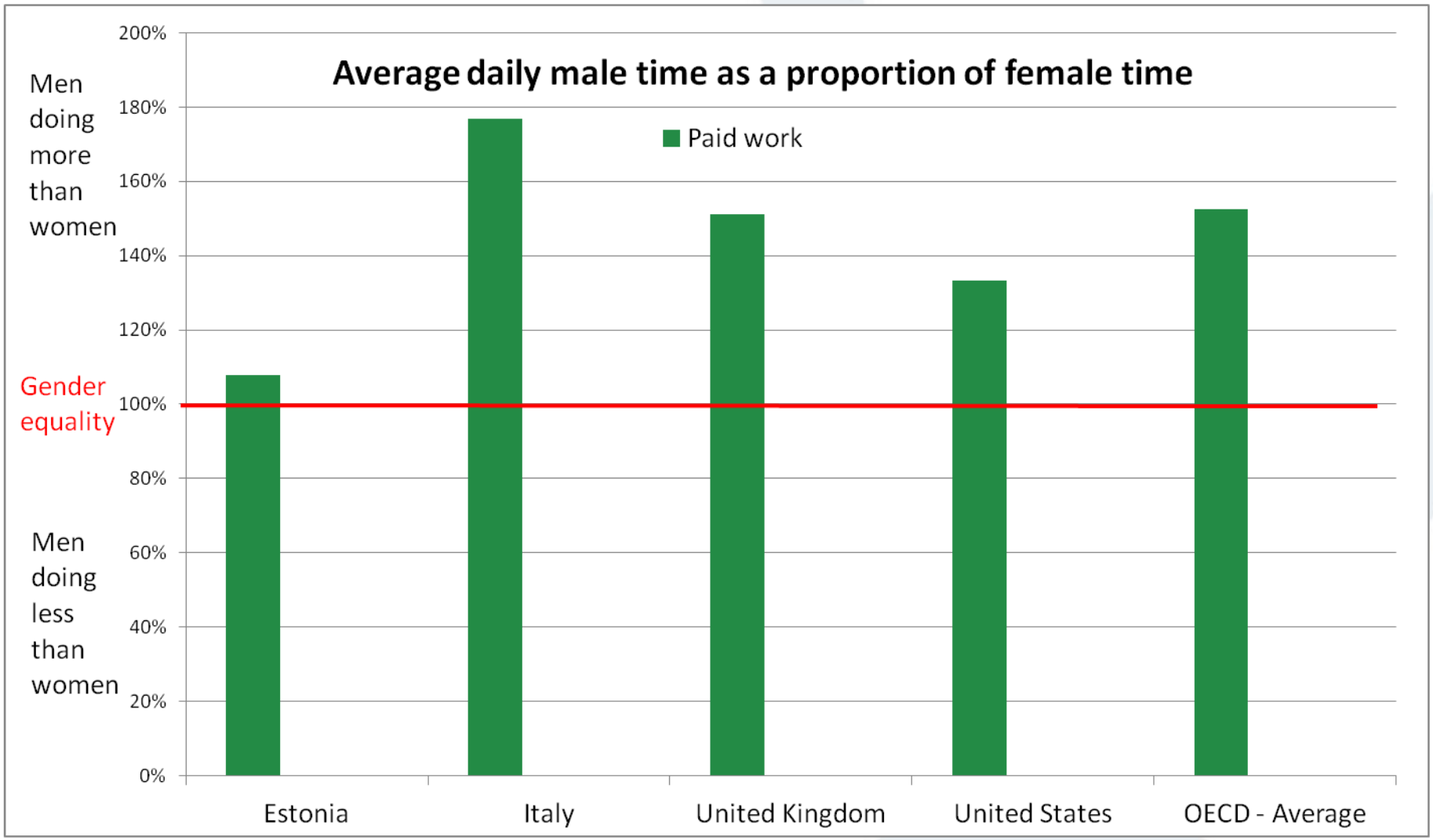
Why is it important?

- Traditional measures of the economy (GDP) ignore this work. However, unpaid household work is closely related to well-being.

- Plays an important contribution to the successful functioning of the economy, labour market and society.

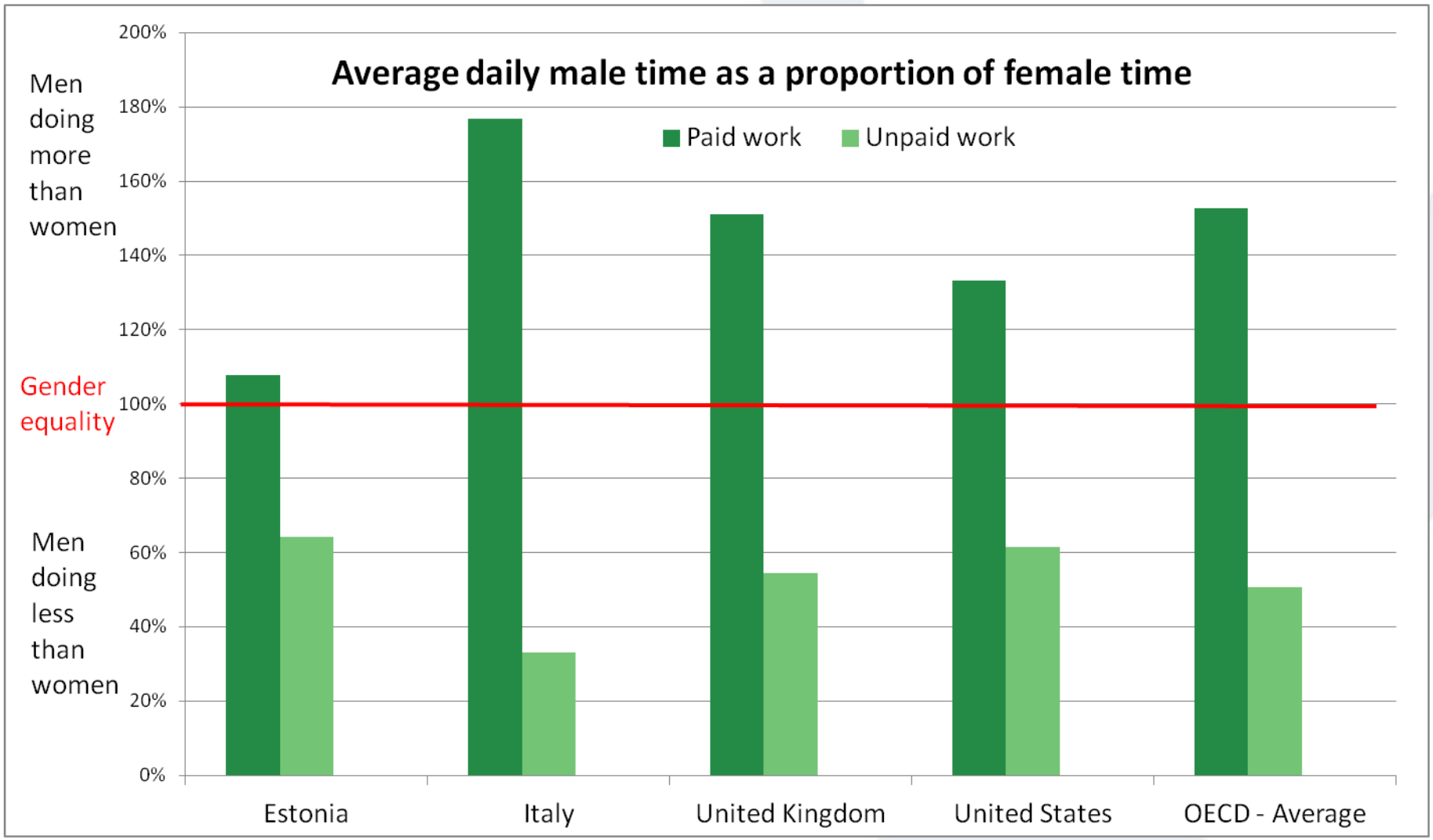
- Vital in examining the gender division of work.

Men spend more time than women doing paid work….



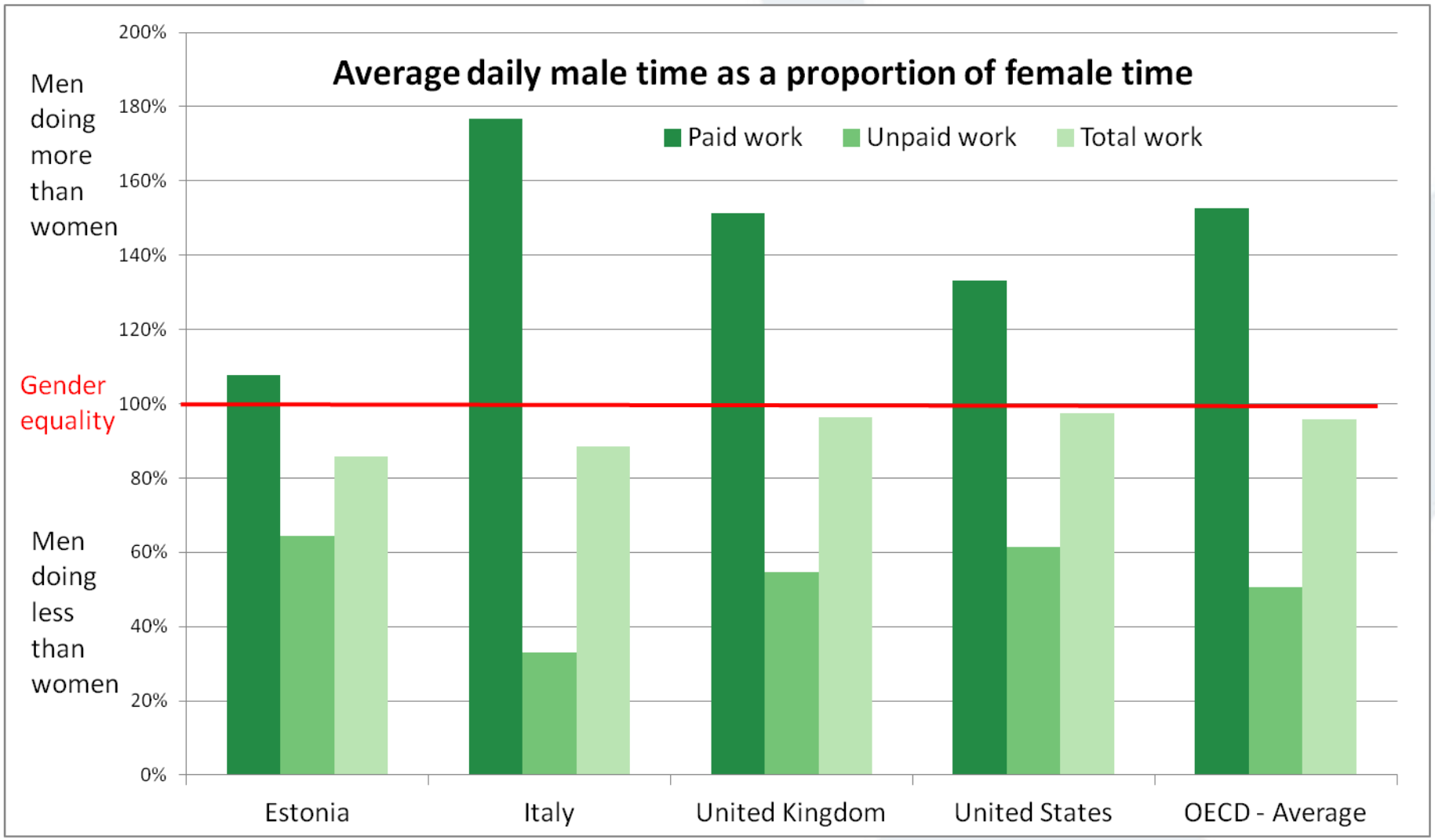
Source: OECD time use database. Latest year data available.

…while women spend more time doing unpaid work…



Source: OECD time use database. Latest year data available.

…to the extent that women spend more time in total working than men.



Source: OECD time use database. Latest year data available.

Goal 5: Achieve gender equality and empower all women and girls

Indicator 5.4

Recognise and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate

Two main approaches to valuing unpaid work

‘Output’ method to value productive activity

Market Equivalent Price x Number of Units

‘Inputs’ method to value productive activity

T… x …

Input approach= **Recommended**

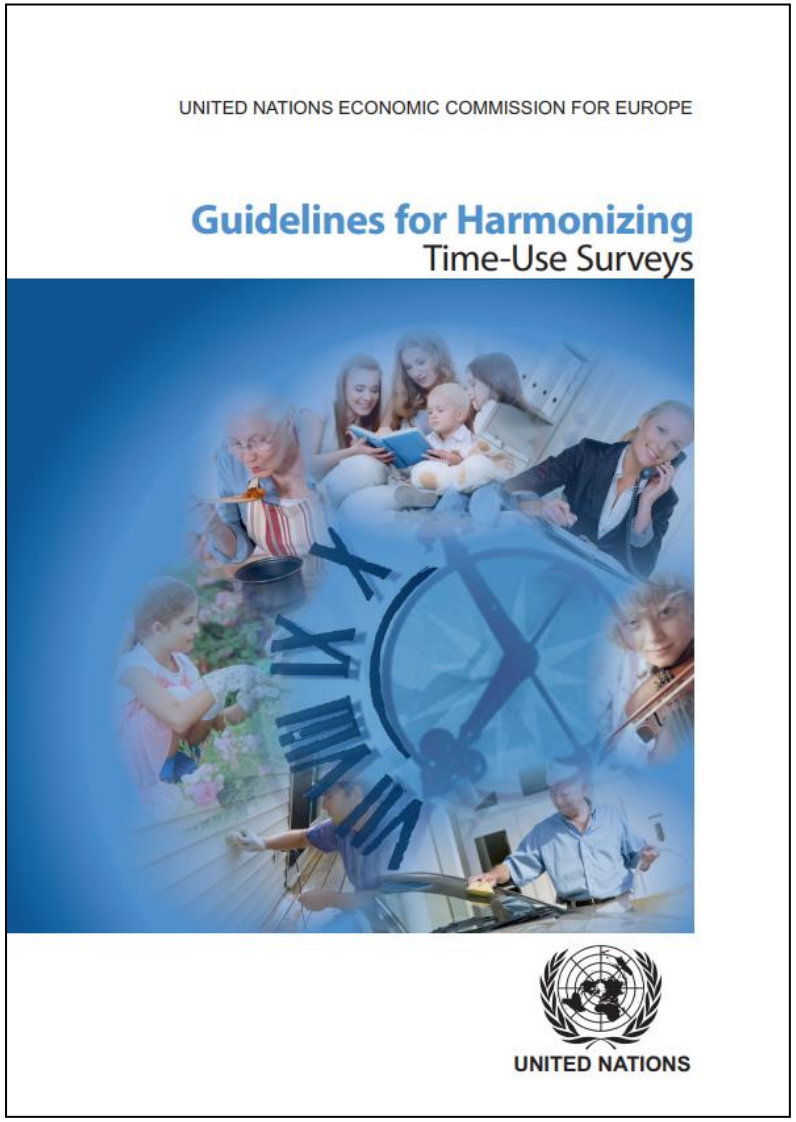
Measuring labour inputs – time use surveys

- Usual approach to measuring labour inputs is via a **time use survey.**
- Individuals record all activities over a 24-hour period.
- Usually option to record primary and secondary activities,

  which means we can

  capture the multi-taskers.

UNECE Guidelines for Harmonizing Time-Use Surveys

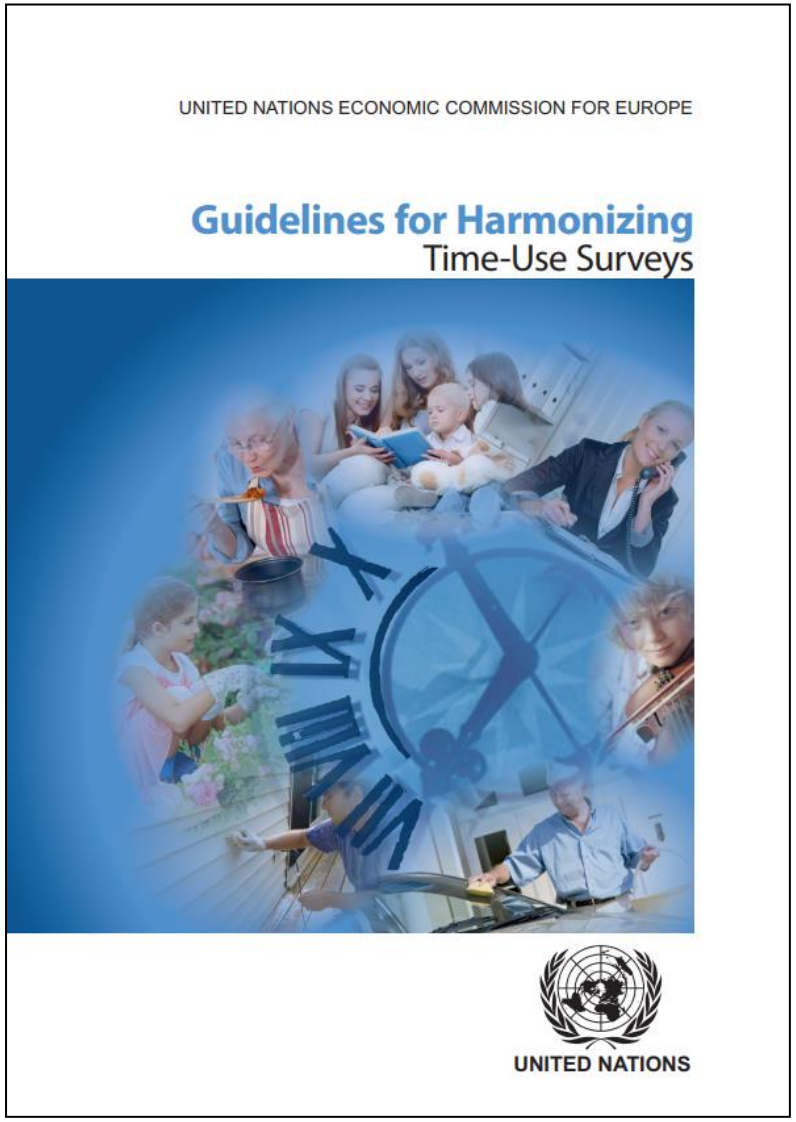


Aims

- **Help** countries in carrying out time use surveys.

- Improve the international **comparability** of their results.

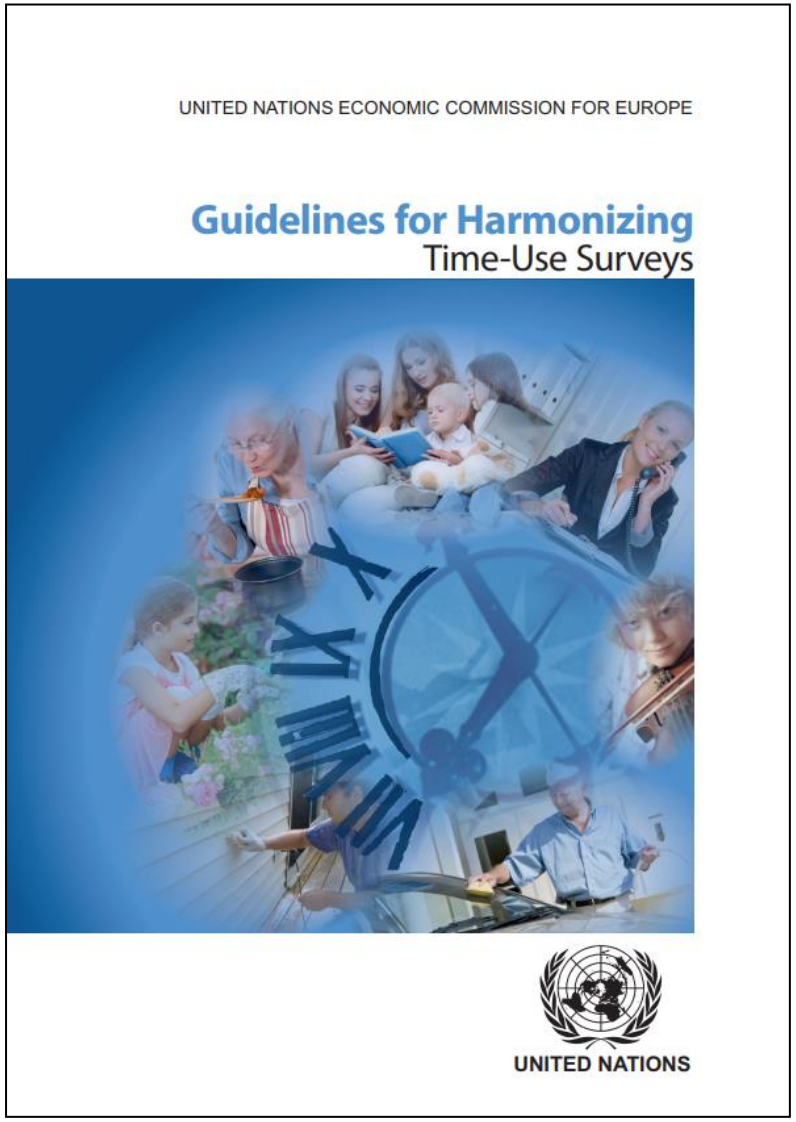
UNECE Guidelines for Harmonizing Time-Use Surveys



Key recommendations

1. Diary preferred to other methods
2. Full-scale preferred to light diary
3. Carried out every ten years, at least.

UNECE Guidelines for Harmonizing Time-Use Surveys



Key recommendations

4. Time use over weeks, months and years
5. At least one simultaneous activity
6. Use the International Classification of Activities for Time Use Statistics 2016 (ICATUS)*

ICATUS classification 2016

ICATUS 2016 classification – top level

1 – Employment and related activities
2 – Production of goods for own final use
3 – Unpaid domestic services for household and family members (own-use production work of services)
4 – Unpaid care giving services for household and family members (own-use production work of care services)
5 – Unpaid volunteer, trainee and other unpaid work
6 – Learning
7 – Socializing and communication, community participation and religious practice
8 – Culture, leisure, mass media and sports practices
9 – Self-care and maintenance

Alternatives to time use surveys

- While full-scale time use surveys are the recommended approach, they can be **complex**, and **costly**.
- Alternative methods may be explored if increases the likelihood of obtaining data on unpaid work.
- Options include:
  - Light time diary with a household survey
  - Stylized questions in a household survey

Example of a light diary.

Source: Gershuny, Oxford University Centre for Time Use Research, UK

Valuing labour inputs

- Once the amount of time spent doing unpaid work is measured, we need to value this time.

- 4 main approaches considered

  - Opportunity cost
  - Replacement cost – generalist
  - Replacement cost – specialist
  - Replacement cost - hybrid

Opportunity cost vs. replacement cost

A lawyer and baker spend 3 hours baking a cake at home

Statistician's cake

Opportunity cost =
3*£25.04p.h. = £75.12

Baker's cake

Opportunity cost =
3*£8.51p.h. = £25.53

So the statistician's cake is three times the value of a baker's cake??

Opportunity cost vs. **replacement cost**

A lawyer and baker spend 3 hours baking a cake at home

Statistician's cake

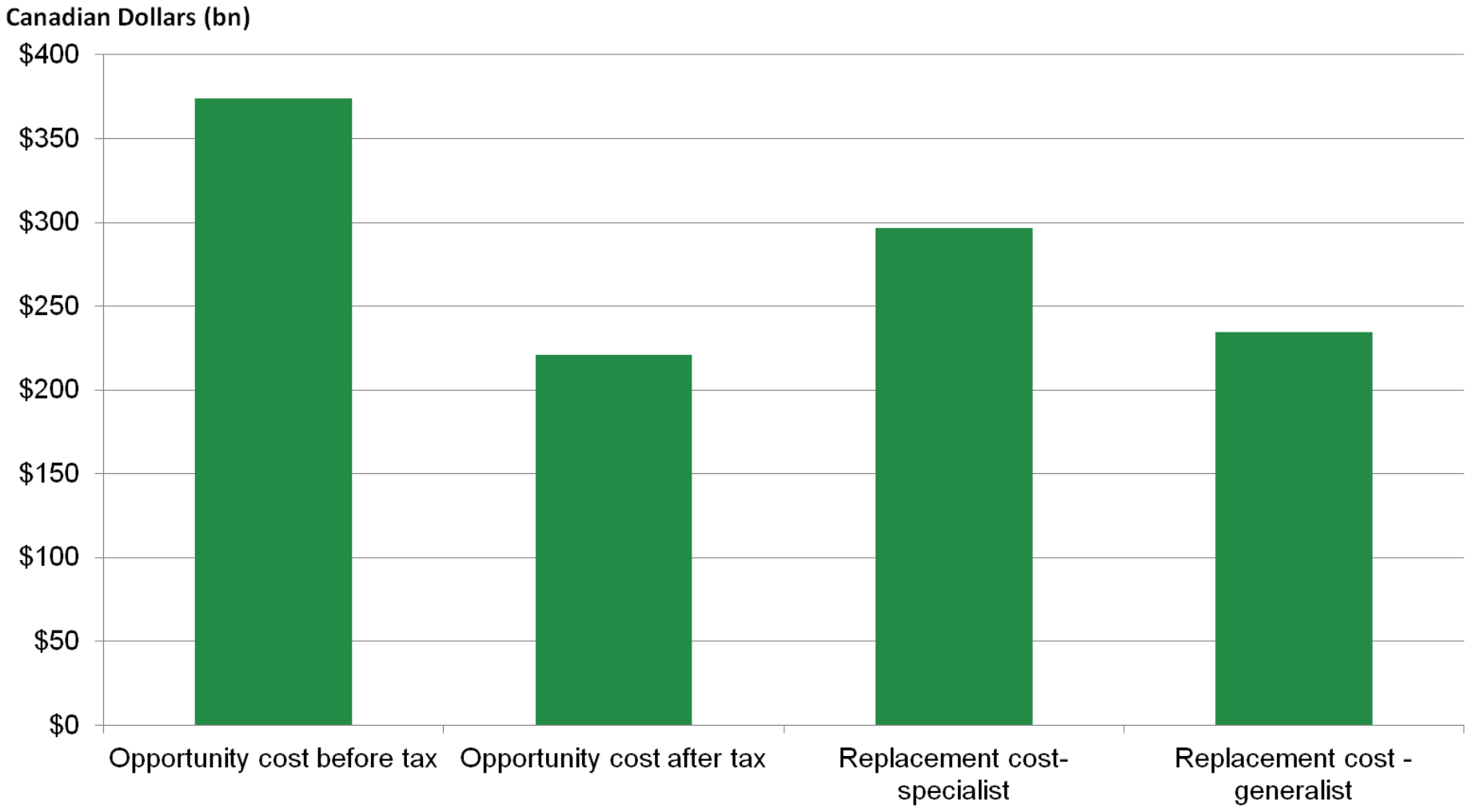
Replacement cost =
3*£8.51p.h. = £25.53

Baker's cake

Replacement cost =
3*£8.51p.h. = £25.53

Now each persons cake is worth the same. What about quality-adjustment?

The valuation approach makes a difference….



Source: Statistics Canada (1995)

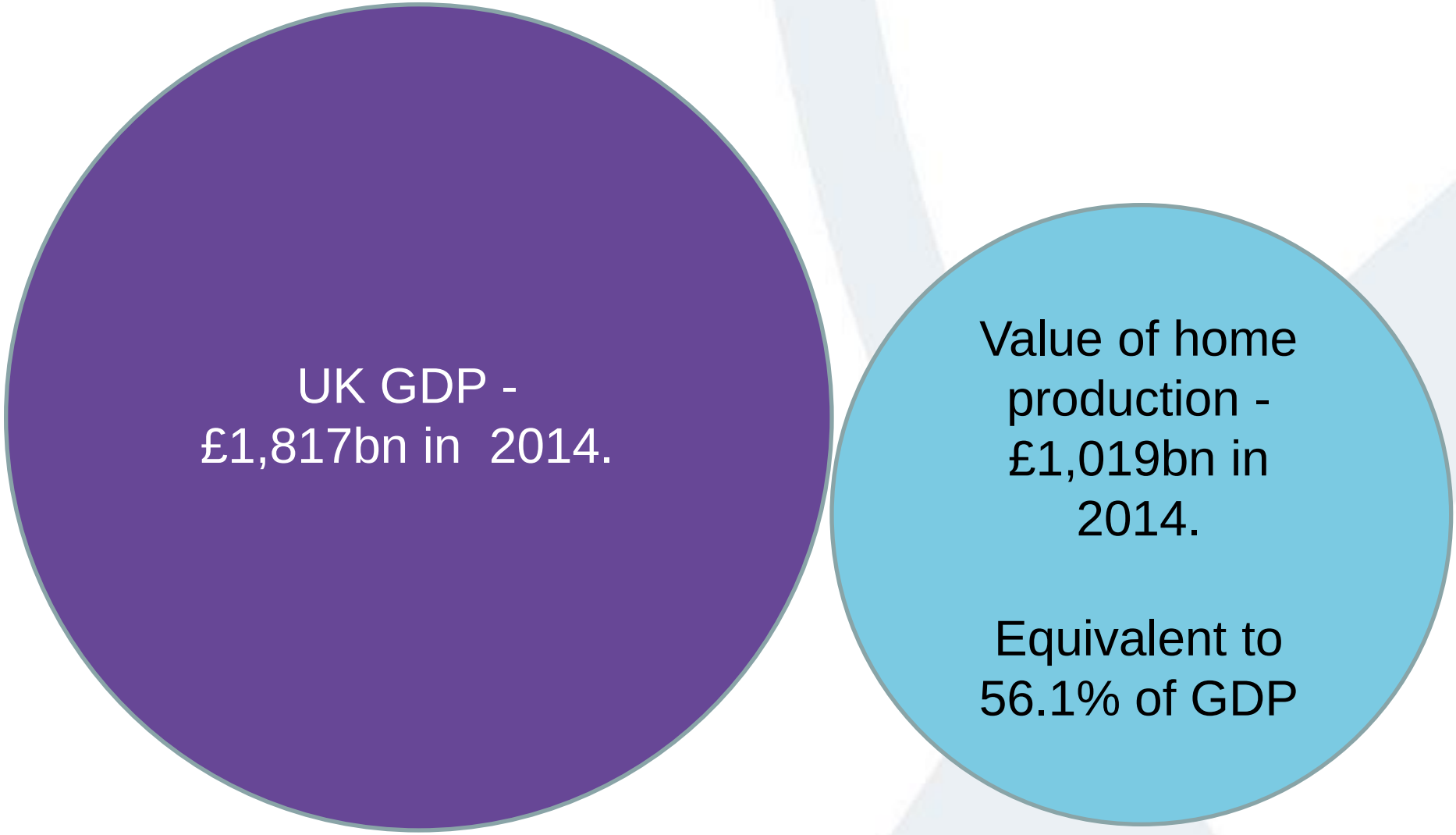
…so which approach to choose?

- Opportunity cost? – **NO! We recommend the replacement cost approach**
- Which replacement cost method? **– The specialist approach.**
- Before or after taxes? **Both**! **– Each are useful for different reporting purposes.**
- And the hybrid method? **Needs more testing, so please report unpaid work using this method as well.** ☺

The household satellite account

- Integrating measures of unpaid household work into the system of national accounts.
- Challenges
  - Allocating intermediate consumption
  - Estimating consumption of fixed capital
- Benefits
  - Enables comparisons with market-based substitutes.
  - Can compare to overall economic activity

Satellite accounts enable direct comparisons with GDP



Source: Office for National Statistics, UK. 2014.

What calculation are required?

Calculation	Component
	Time
multiply	Wage
equals	**Imputed compensation for labour input**
plus	Taxes less subsidies
plus	Consumption of fixed capital
plus	Return to capital
equals	**Gross value added**
plus	Intermediate consumption
equals	**Value of output (sum of costs)**

Imputed compensation for labour input estimated using time use survey data

Calculation	Component
	Time
multiply	Wage
equals	**Imputed compensation for labour input**
plus	Taxes less subsidies
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equals	**Value of output (sum of costs)**

Taxes less subsidies

Calculation	Component
	Time
multiply	Wage
equals	**Imputed compensation for labour input**
plus	Taxes less subsidies
plus	Consumption of fixed capital
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equals	**Gross value added**
plus	Intermediate consumption
equals	**Value of output (sum of costs)**

Taxes less subsidies

- Some taxes and benefits are explicitly linked to the provision of unpaid work.
- For instance, taxes on the use of buildings and machinery involved in the production unpaid household service work.
- Some people receive subsidies for the care of children and adults, which needs to allocated to that production.

Capital goods

Calculation	Component
	Time
multiply	Wage
equals	**Imputed compensation for labour input**
plus	Taxes less subsidies
plus	Consumption of fixed capital
plus	Return to capital
equals	**Gross value added**
plus	Intermediate consumption
equals	**Value of output (sum of costs)**

The treatment of capital goods

- Some final consumption expenditure needs to be reallocated to gross fixed capital formation.
- E.g. household appliances, cars etc that are used to provide own-use production work of services.
- Further, depreciation and return to capital need to be accounted for.

Intermediate consumption

Calculation	Component
	Time
multiply	Wage
equals	**Imputed compensation for labour input**
plus	Taxes less subsidies
plus	Consumption of fixed capital
plus	Return to capital
equals	**Gross value added**
plus	Intermediate consumption
equals	**Value of output (sum of costs)**

Intermediate consumption

- Household goods for own-consumption are generally recorded as final consumption expenditure.

- Need to reflect that some goods are used in the production of unpaid household service work.

- Reallocate goods from household final consumption expenditure to intermediate consumption.

Supply and use table

£billions	Manufacturing	Transport and storage	Of which: Passenger land transport	Own-use production work of travel services	Human health and social work activities	Of which: Residential care activities	Own-use Production work of adult care services	...	Total intermediate uses	Final consumption expenditure by households	...	Gross capital formation	Total exports	Total final uses at purchasers' prices	Total use at purchasers' prices
Agriculture, forestry and fishery products	9.7	0.1	0.0	-	0.0	0.0	-		**14.0**	14.2		1.0	2.1	17.3	**31.3**
Ores and minerals; electricity, gas and water	17.9	6.7	1.7	-	2.1	0.6	-		**112.9**	48.4		-0.6	12.5	60.3	**173.2**
of which: Water supply and miscellaneous services relating to the dwelling	-	-	-	-	-	-	-		**2.8**	1.8		-	-	1.8	**7.3**
of which: Electricity, gas and other fuels	-	-	-	-	-	-	-		**6.2**	2.4		-	-	2.4	**14.5**
of which: Operation of personal transport equipment	-	-	-	18.1	-	-	-		**18.1**	7.8		-	-	7.8	**25.9**
Food products, beverages and tobacco; textiles, apparel and leather products	15.8	0.6	0.2	-	2.1	0.6	-		**120.3**	23.8		0.8	14.7	39.3	**157.3**
of which: Food products for the preparation of home meals	-	-	-	-	-	-	-		**71.4**	-		-	-	-	**71.4**
...															
Other transportable goods, except metal products, machinery and equipment	120.2	4.0	1.0	-	18.0	5.3	-		**265.0**	125.5		32.3	137.8	307.1	**572.1**
of which: Glassware, tableware and household utensils	-	-	-	-	-	-	-		**0.6**	5.2		-	-	5.2	**5.8**
of which: Tools and equipment for house and gardens	-	-	-	-	-	-	-		**0.3**	0.0		0.2	-	0.2	**0.6**
...															
Metal products, machinery and equipment	18.7	1.3	88.9	-	0.5	0.1	-		**32.7**	8.3		37.2	20.7	34.3	**45.7**
of which: Household appliances	-	-	-	-	-	-	-		**0.7**	0.2		1.2	-	1.3	**2.0**
of which: Transport equipment	-	-	-	-	-	-	-		-	7.9		21.7	-	29.6	**29.6**
Constructions and construction services	2.0	2.1	0.5	-	0.8	0.2	-		**89.5**	1.3		102.6	2.1	106.1	**195.5**
of which: Maintenance and repair of the dwelling	-	-	-	-	-	-	-		**1.8**	1.2		-	-	1.2	**4.8**
....															
Own-use production work of clothing services	-	-	-	-	-	-	-		**0.2**	4.2		-	-	-	-
Own-use production work of travel services	-	-	-	-	-	-	32.1		**105.9**	214.9		-	-	-	-
Own-use production work of meal services	-	-	-	-	-	-	15.4		**33.9**	308.5		-	-	-	-
Own-use production work of housing services	-	-	-	-	-	-	1.7		**45.7**	123.6		-	-	-	-
...															
Total	**228.5**	**64.2**	**105.6**	**22.7**	**56.5**	**16.6**	**49.9**		**1444.3**	**1995.7**		**288.9**	**375.1**	**1712.5**	**3002.4**
									Total						
Compensation of employees	81.9	37.6	6.5	-	68.2	26.9	-		**674.5**						
Other taxes on production minus other subsidies on production	12.5	4.0	8.2	-	2.4	8.2	-1.3		**39.2**						
Consumption of fixed capital	19.1	10.0	2.9	19.6	3.6	1.5	-		**166.0**						
Operating surplus and mixed income, net	23.3	7.5	2.2	280.8	18.1	7.4	11.8		**1261.8**						
Return to capital	23.3	7.5	2.2	1.0	18.1	7.4	-		**365.0**						
Imputed comp for labour to own-use production work of services	-	-	-	279.8	-	-	11.8		**896.8**						
Value added, gross	**136.7**	**59.1**	**19.8**	**300.4**	**92.2**	**43.9**	**10.5**		**2141.5**						
Output	**365.2**	**123.4**	**125.4**	**323.1**	**148.8**	**60.5**	**60.3**		**3585.8**						
million hours	-	-	-	-	-	-	-		**Total hours**						
Hours worked in paid employment	5,004	2,173	913	-	6,154	1,127	-		**67,716**						
Hours worked on education and training	-	-	-	-	-	-	-		**14,423**						
Hours worked in own-use production work of services	-	-	-	32,737	-	-	1,379		**104,925**						
Leisure time	-	-	-	-	-	-	-		**118,203**						
Other activities n.e.c.	-	-	-	-	-	-	-		**140,379**						

* Please note that the sub classification of COICOP-groups is only an approximation, for illustrative purposes. Not the whole COICOP (sub)group may fall within the perimeters of the main heading of the use table.

Impact on national account variables

- The Supply and Use Table extends the production boundary by including own-use production work of services. This will impact GDP in a number of ways.
- GDP increases due to imputed compensation for labour income and the total capital services from consumer durables.
- Final consumption expenditure of households will increase because of the additional consumption of own-use production work of services.
- On the other hand, it will decreases because of the alternative recording of goods and services used during own-use production of services work, which adds to intermediate consumption, and the shifting of consumer durables to gross fixed capital formation.
- It’s then possible to examine the impact on household disposable income via the sector accounts.

Thanks for listening!