Office for National Statistics

Bridging the gap between GDP and Welfare

Richard Heys
Deputy Chief Economist - ONS
February 2019

The views expressed in this presentation are those of the author, and not necessarily those of the Office for National Statistics.

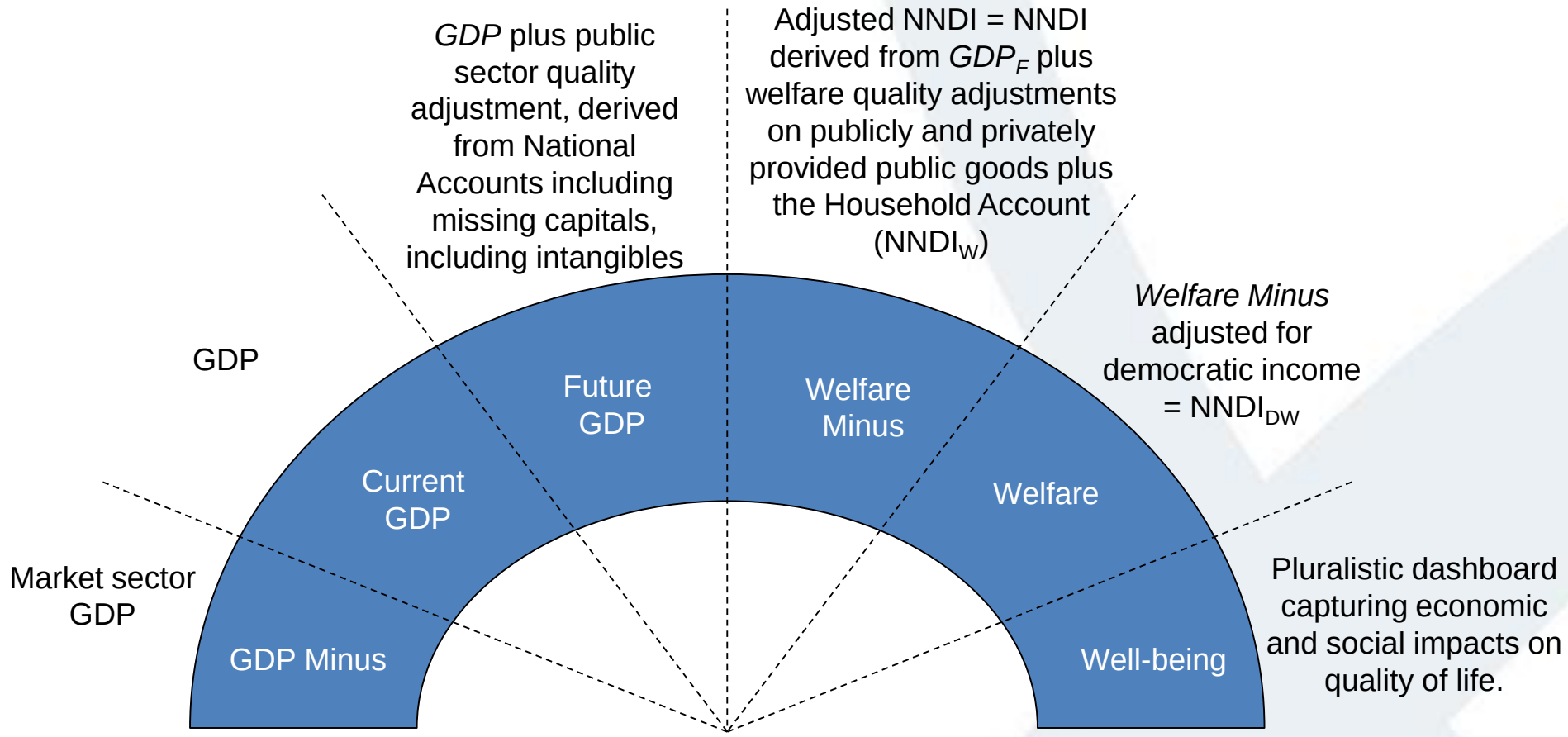
The two philosophies of GDP

- **The Orthodox view:** GDP is a measure of the productive economy, providing insight to economic policy-makers to set fiscal and monetary policy.
- The National Accounts have '*a place for everything and for everything a place*' - complete coverage of the concepts it is designed to cover.
- **Therefore:** GDP is a '*perfect measure*' and does not need substantive revision.

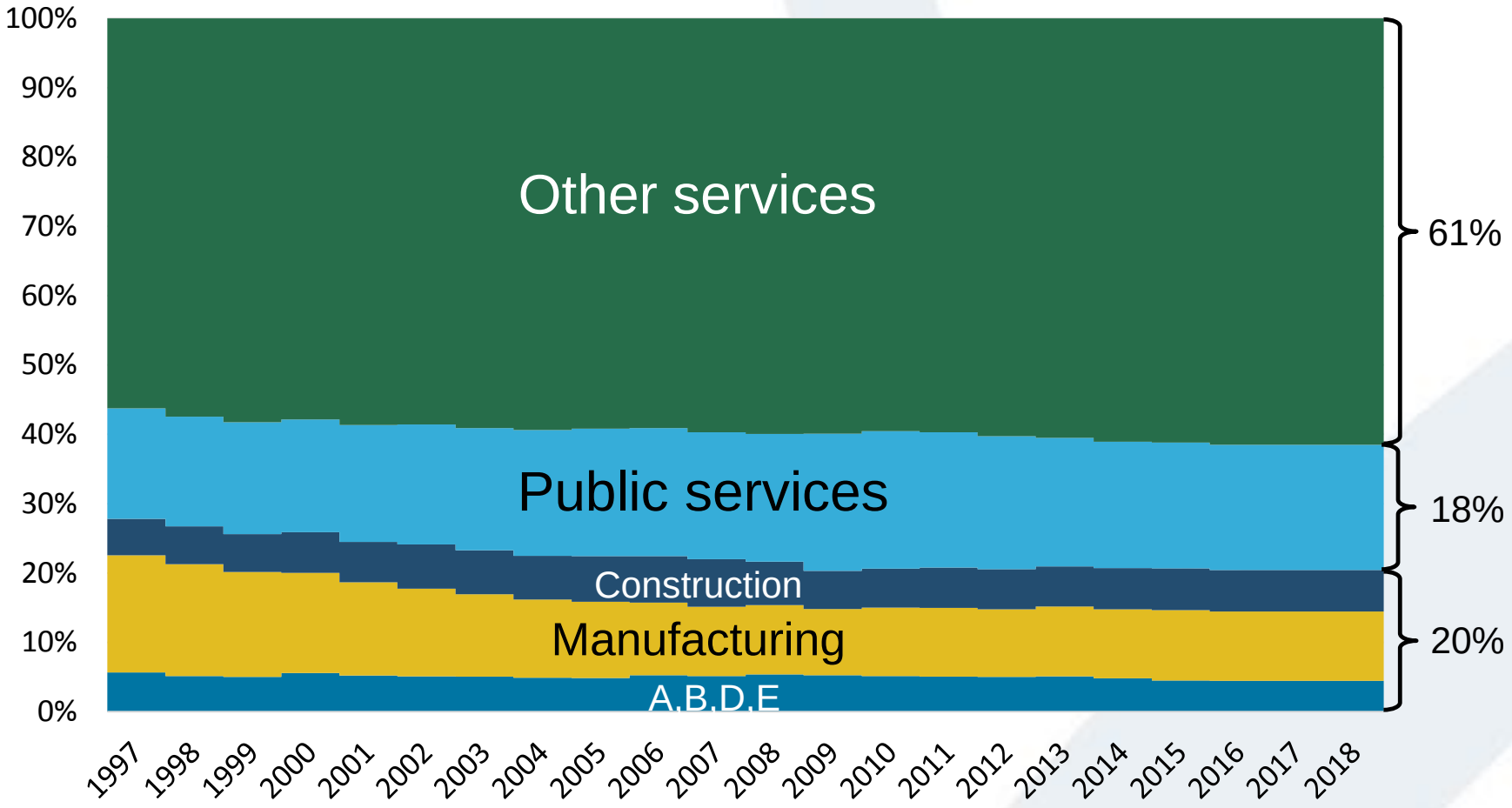
- **The Moderniser view:** What society needs is a measure of welfare which reflects modern life, particularly as the consumption of material goods is becoming ever less important as a measure of living standards.
- Equally society needs a better measure of sustainability as finite raw materials become scarcer.
- **Therefore:** Because GDP is the dominant measure used to proxy for welfare, GDP should be transformed so it can serve this function properly

"*Measurement issues have become akin to a religious war*." (Brynjolfsson – ESCOE Conference 2018)

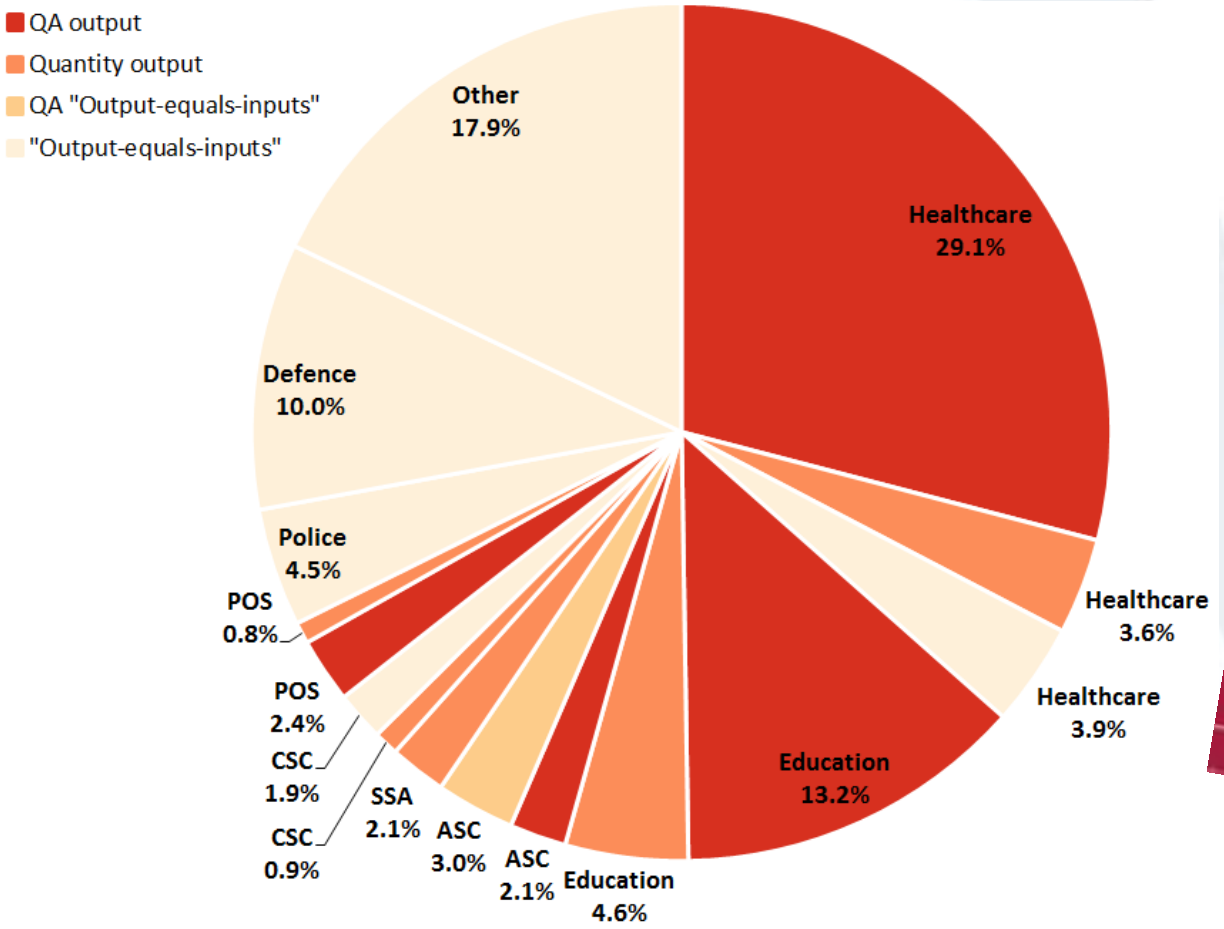
A spectrum of theoretical options



“Free digital goods are everywhere, except the National Accounts. Unlike free goods: 30% of GDP is free goods.”



Public Services in the UK (2016)

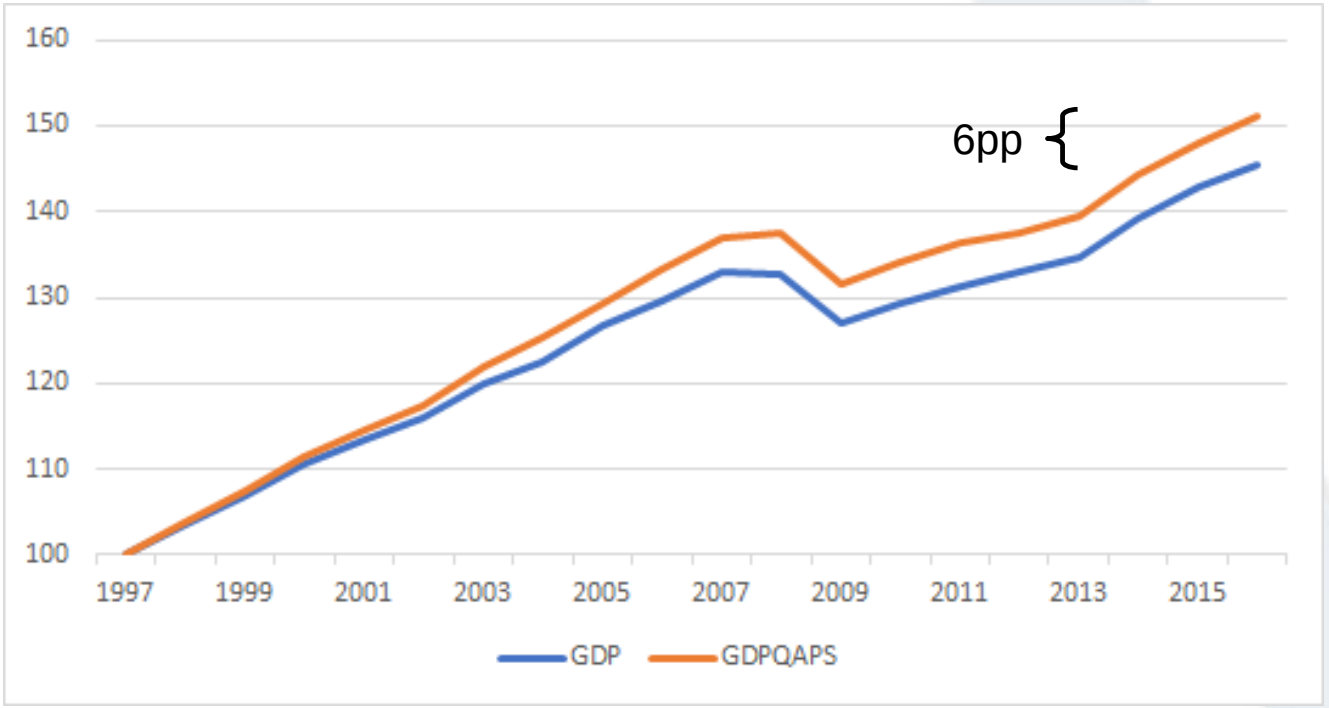


One should augment output data with ‘quality adjustments’ to capture value – this should give a better proxy for welfare overall.

SNA v ESA – different approaches

- SNA08 includes provision to include the quality adjustment of public services into National Accounts.
- ESA10 explicitly prevents inclusion of quality adjustments of public services in National Accounts.
    - Key rationale: methodological consistency for GNI calculations – Could different countries with very different systems deliver consistent adjustments?
- So National Accounts in the UK are not quality adjusted, as with the rest of the world, but Public Service Productivity statistics are quality adjusted.
- Clashes between standards are confusing and need resolution.
- Assuming this happens, GDP_F would likely include these adjustments.

Potential Impact of quality adjustments

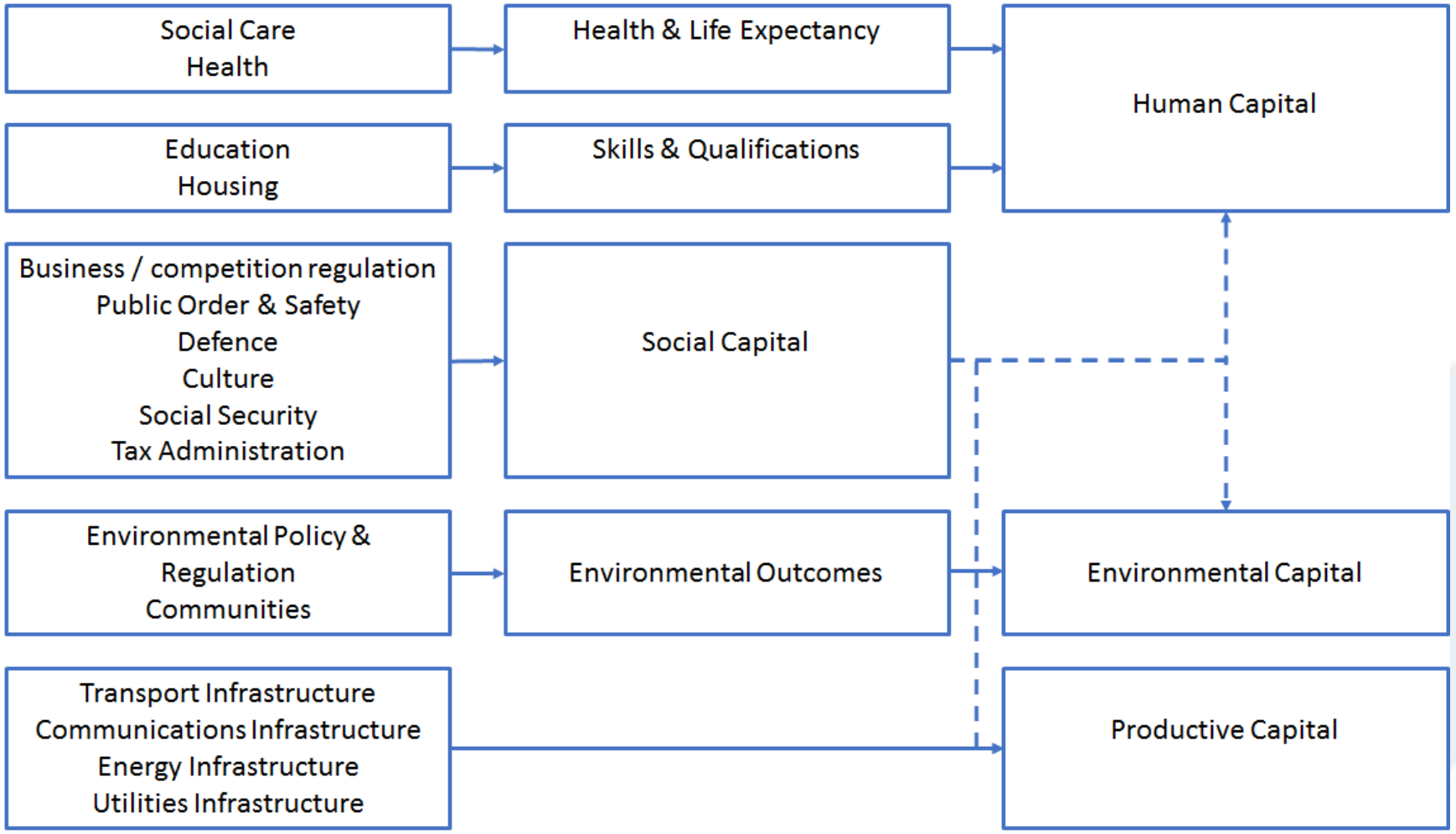


Notes:

1. Growth rates of GDP and industry output taken from GDP(O) low-level aggregates.
2. Output growth not exactly comparable between GDP source data and public service productivity non-quality adjusted output measures, due in part to alignment of service area breakdowns (based on Classification of the Function of Government) and industrial classifications.
3. Public service productivity measures are not a direct match with the activities of government, including some third sector activity.
4. Calculations do not consider second-round effects on GDP weights.

But this is only part of a bigger story

Do we ‘consume’ government services, or are they a form of investment?



The state of the Capitals data

Type	National Accounts?	Investment (CP)	Investment (CVM)	Stock (CP)	Stock (CVM)	Consumption of fixed capital	Other outflows
Fixed Assets	Yes	✔	✔	✔	✔	✔	✔
Inventories	Yes	✔	✔	✔	✔	N/A	✕
Valuables	Yes	✔	✔	✕	✕	N/A	✕
Non-produced assets	Yes	✔	✔	✔	✔	N/A	✕
Natural Capital	No	✕	✕	✔	✔	N/A	✔
Broader intangible assets	No	✔	✕	✕	✕	✕	✕
Human capital	No	✕	✕	✔	✔	✕	✕

Key: ✔ = Data available; ✕ = Data not currently available; N/A = Not applicable.

Notes:

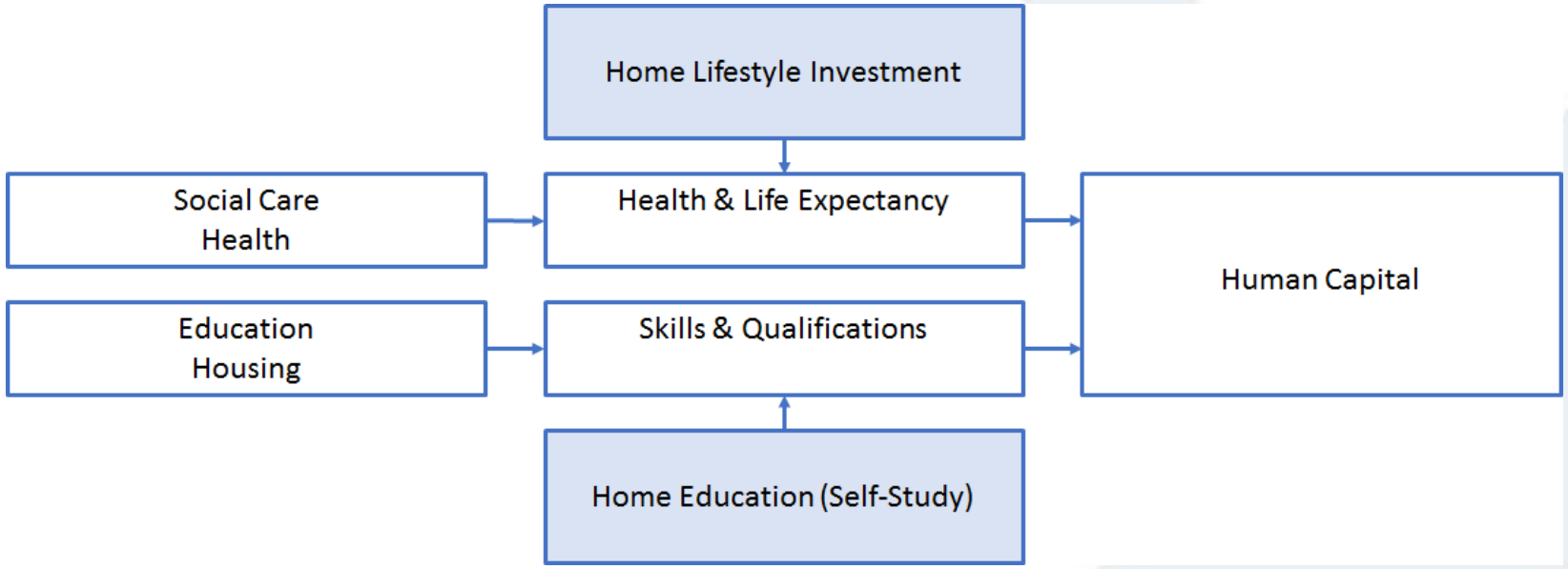
- Consumption of fixed capital is only recorded on fixed assets, such as buildings, machinery, software, etc. Human capital could be thought of as a type of fixed asset, as it could reduce in value over time due to anticipated obsolesce, i.e. the normal aging of the population and resultant decrease in its human capital.
- Investment flows between sectors are possible for non-produced natural resources and natural capital, but must sum to zero across the whole economy. Other non-produced assets in the national accounts include contracts, leases and licences, and goodwill and marketing assets, for which non-zero investment flow across the economy are possible.
- The quality of the available data in each category is variable.

Allocation of capital services (Heys, Martin, Franklin, Vassilev and Dutton (forthcoming)

Type	Example	Capitalised?	Ownership?	Capital services flow to	Allocation in growth accounting
Private capital (tangible & intangible)	IT Hardware	Yes	Private	Owners of assets	Correct
Private infrastructure	Energy network	Yes	Private	Owners of assets and rest of economy	Only to owners of assets
Public infrastructure	Roads	Yes	Public Sector	Whole economy	None, in residual
Uncapitalised intangibles	Branding	No	Private	Owners of assets	None, in residual
Free/open information	Official statistics	No	Public	Whole economy?	None, in residual
Natural resources	Land	Yes (non-produced)	Public/private	Whole economy? Especially users	None, in residual
Inventories		Yes	Private	Owners of assets	None, in residual
Social infrastructure	Healthcare	No	Public	Whole economy?	None, in Hours/LC/Residual
Human capital	Education	No	Household sector	Owners of assets, and employers	None, in Hours/LC/Residual
Consumer Durables	Car / washing machine	No	Household Sector	Owners of assets / shared economy users	None, in residual
Capital replacement services	Cloud Computing	No	Private	Whole economy	Intermediate consumption / final output of computing services industry
Labour replacement services	Outsourced labour	No	Private	Whole economy	Intermediate consumption / final output of employment agencies industries

Household Own-Account Investment in Missing Capital

- Is it logical to include government / productive sector investment in missing capital, but not the investments carried out by households?



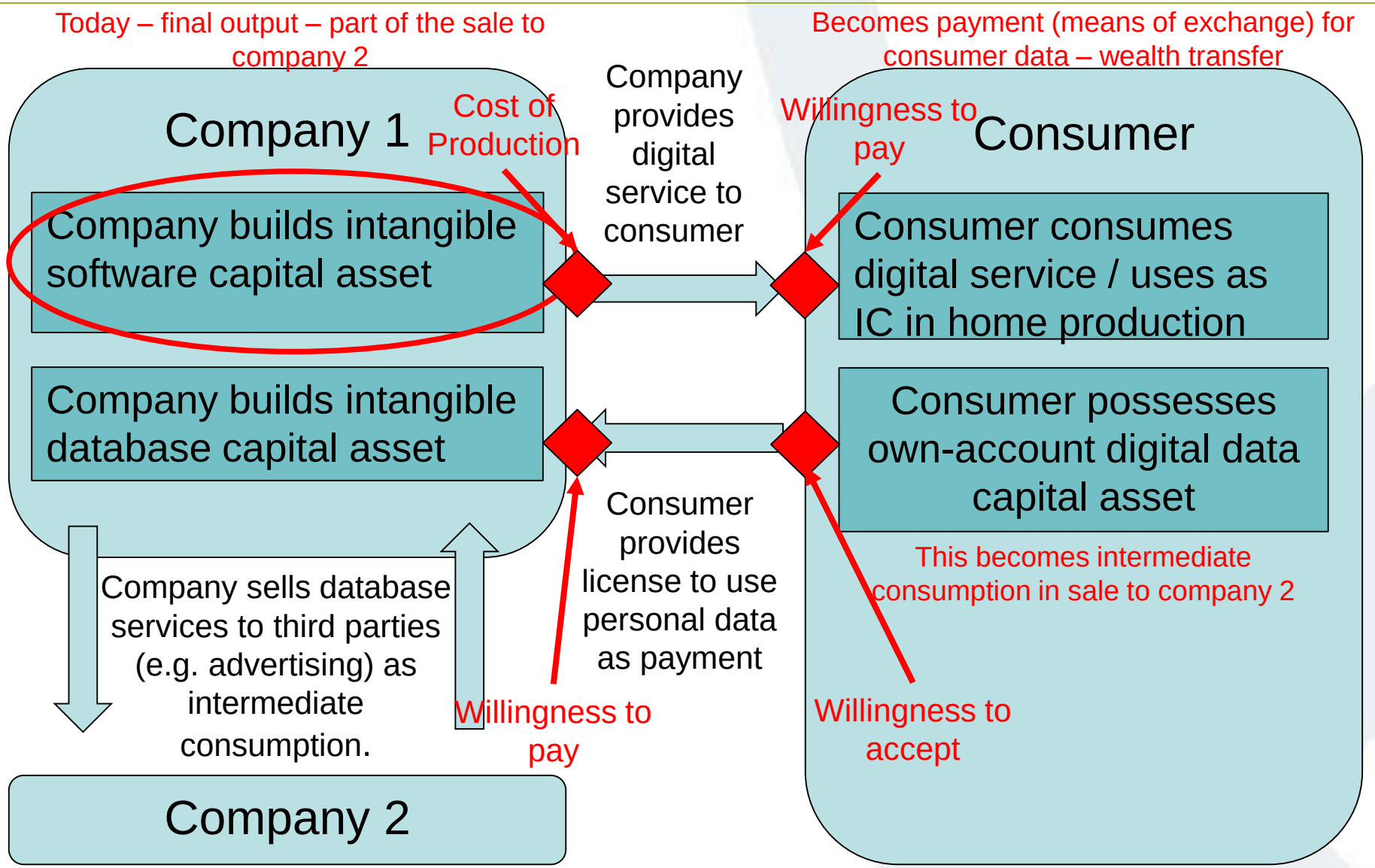
Inclusion of the Household Account into a welfare measure…

- Allows us to capture more ‘free goods’ – childcare, catering, cleaning, gardening, care, DIY, taxi services.
- Conceptually clear distinction for welfare from GDP.
- Consistent treatment of all investment into missing capitals
- Outstanding question – what do we do with leisure?

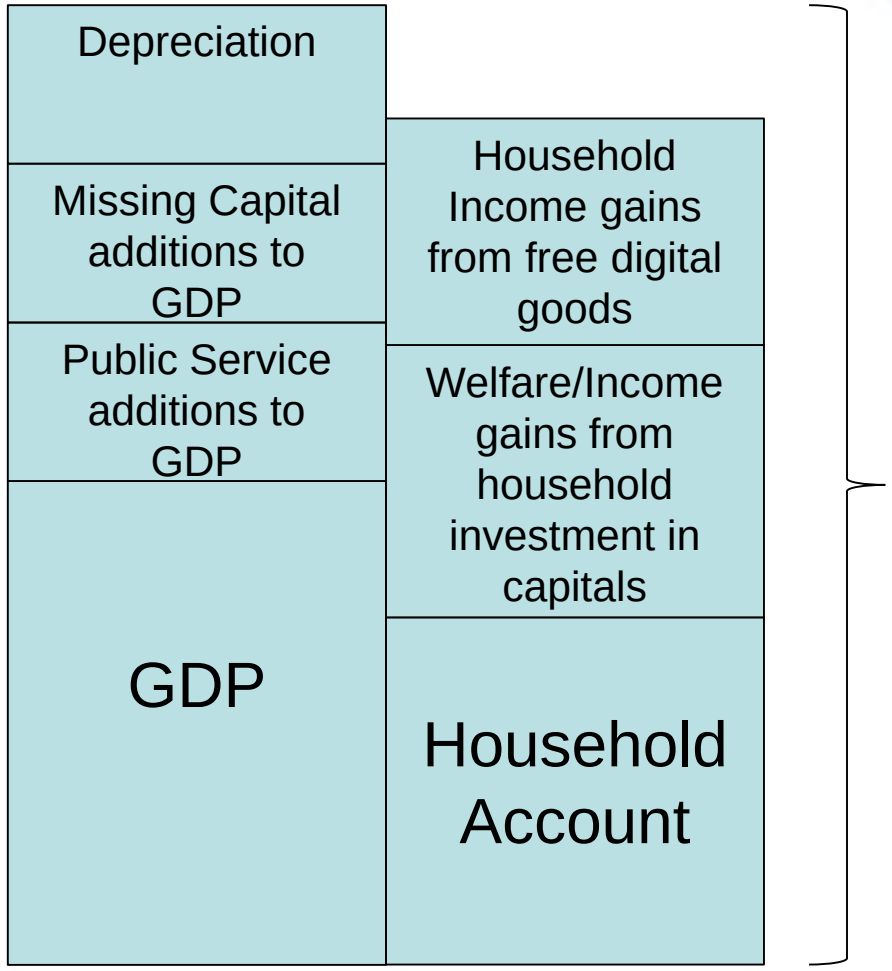
Free digital goods

- The production costs of free digital goods are already in the National Accounts - except the archetypal *'geek coding in their bedroom'* – but let's assume he's going to incorporate when he reaches scale.
- This is paid for from advertising revenues (mainly).
- So, that's it, isn't it?

A simple example.



So what would this welfare measure contain?



*Not to scale

A welfare measure based on the concept of a sum of income (eg NNDI), but adjusted to capture elements of income currently missing – $NNDI_{W.}$ But this is still only 'welfare minus' because we haven't dealt with distribution.

Capturing distributional factors

- Weale & Aitken (2018) – democratic measures of income – the rate of growth for the average household, not the average rate of growth across all households.
- Allows the creation of a single measure which better reflects distributional variation.

Capturing distributional factors

- Weale & Aitken (2018) – democratic measures of income – the rate of growth for the average household, not the average rate of growth across all households.
- Allows the creation of a single measure which better reflects distributional variation.

Conclusions

- GDP in its current form is here to stay, but the world can move around it.
- Producing a new measure is not enough – it has to meet the varied aspects of quality at least as well as GDP to make users shift across.
- Lots of core building blocks to create new measures exist, and the Digital Economy Act and new technology make further exploration feasible.
- Need to complete existing agendas (capitals, Atkinson) at least as important as exploring new ones (free digital goods).