



UK Research  
and Innovation

# UKRI Data Pack on Research Financial Sustainability

(Sankey Funding Flows 2022–23)



# Sankey diagram explainer: Funding flows within universities are complex

Our Sankey diagrams (enlarged in subsequent slides) illustrate the cross-flows of funding within the university sector.

## Income Sources

The nodes on the very left-hand side of the diagram show sources of income, with the income levels shown alongside the different income types:

- Research funding: Research councils; UK-based charities; Industry; Postgraduate funders; Other govt department; EU research grants and contracts; quality-related research funding (QR) or equivalent; and Other research-related income.
- Teaching income: Non-publicly funded teaching and Publicly funded teaching.
- Other income: Other income generating activities and Income/gains from other non-commercial activity.

## Full economic cost/no cross-subsidy required

For some activities, such as delivering non-publicly funded teaching, the full economic costs are met by the income intended for these activities.

Therefore, there is no cross-subsidy required from other income streams.

The full economic cost of these activities is shown at the right-hand side of the bar, e.g., full economic cost of delivering non-publicly funded teaching is £7,726 million.

**NB:** This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

**Source:** 2022-23 TRAC data for 150 UK universities.

## Source of cross-subsidy

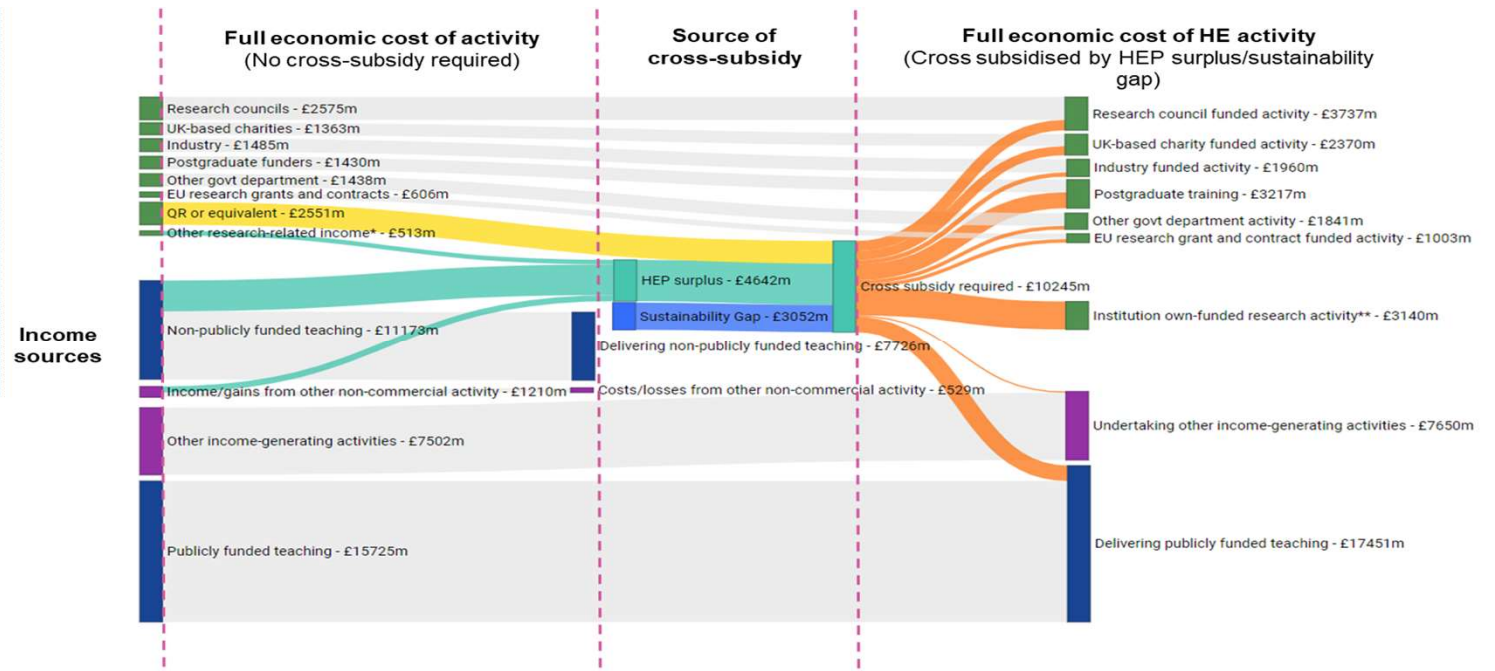
It is also possible that the income received for certain activities is in fact greater than the associated full economic costs, meaning that a surplus is generated. These income surpluses (teal bars) flow into the middle of the diagram to labelled 'HEP surplus' (higher education provider surplus), utilised to support delivering publicly-funded teaching and research and knowledge exchange activities.

Similarly, QR (quality-related research funding) or equivalent funding (yellow bar) can be used flexibly to support research activities.

## Full economic cost of HE activity/cross-subsidy required

The nodes on the right-hand side of the diagram represent activities that require cross-subsidisation from other income streams, with the weight of the orange bars denoting the size of the subsidy. The full economic cost (£m) of each activity is shown against the activity description.

Overall, there is a sustainability gap of £3,052 million, representing the amount by which the full economic cost of all universities' activities exceeds income.



# Interpretation of the Sankey diagrams

## **Sustainability gap**

- When the full economic cost of teaching, research and other activities across UK universities exceeds the sector's income, this is referred to as the 'sustainability gap'.
- Universities may have various means to cover their sustainability gap, such as through borrowing or drawing down their reserves, but a worsening position places greater reliance on surplus-generating income streams and makes the sector less resilient.
- The sustainability gap is not evenly distributed across the sector - some universities can meet the required levels of sustainable investment more than others.

## **Variability within the TRAC groups**

- The following slides include analysis of the funding flows within the different TRAC groups (explained in subsequent slides).
- Whilst it is useful to draw comparisons between TRAC groups, there is variability between institutions within each group that is not captured within the analysis.
- Therefore, conclusions about a TRAC group as a collective cannot necessarily be applied to individual institutions within that group.

## **Further caveats**

- In Sankey form, this is of course a simplification of financial flows within the university sector. For example, the 'Income/gains from other non-commercial activity' may include new donations or new endowments for which the income has been recognised in full in the university's financial accounts, but in reality this income is intended to be spent on activity over many years.

## General findings from the Sankey diagrams

### Sustainability gap

- In academic year (AY) 2022-23, the sustainability gap for the whole higher education sector was £3,052m. This represents 6 per cent of the total amount of income received by the sector.
- Generally, across the higher education sector, the full economic cost of research activities and delivering publicly-funded teaching exceeds the income received for these activities. Therefore, universities utilise quality-related research (QR) funding to support research activities, and surplus income from delivering non-publicly funded teaching to support all activities. This 'cross-subsidy requirement' – the amount of funding required for those activities where the full economic cost of an activity exceeds the income intended for that activity – was nearly £10,250m in AY 2022-23. This represents 20 per cent of the total full economic cost of all teaching, research and other activities.

### Research income

- Research-intensive institutions in TRAC groups A and B tend to receive a significant proportion of their research income through competitive project grants from Research Councils. In contrast, less research-intensive institutions tend to fund a higher proportion of their research activity through unhypothecated block-grant funding (QR or equivalent).
- UK charity research income is a major source of project funding for TRAC group A institutions, but not other peer groups. 93 per cent of UK-based charity income for research is received by TRAC group A institutions.

### Teaching income

- The relative proportion of teaching income between publicly and non-publicly funded sources varies between TRAC peer groups. Publicly-funded teaching tends to be a more significant income source for less research-intensive universities, forming just under half (46 per cent) of all teaching income for group A institutions compared with 67 per cent group D and 75 per cent for group E institutions.

# The gap between costs and income on research and public teaching is widening, increasing the reliance on cross-subsidy

In AY 2022-23, the gap between income and costs for research was £5,307 million and for public teaching was £1,725 million. These gaps have grown for both activities since 2018-19 (an increase of £221 million and £1,027 million respectively).

**Table 1: University sector funding gaps by activity (£ million, 2022/23 prices)**

Activity	Funding gap (£ million)				
	2018/19	2019/20	2020/21	2021/22	2022/23
Teaching (Public)	-698	-781	-460	-1,084	-1,725
Teaching (Private)	2,237	2,596	2,803	3,207	3,447
Research	-5,086	-5,109	-4,488	-5,297	-5,307
Other (Income-Generating)	327	-889	-574	257	-148
Other (Non-Commercial) <sup>1</sup>	1,304	643	2,698	605	682
<b>Total</b>	<b>-1,916</b>	<b>-3,541</b>	<b>-21</b>	<b>-2,311</b>	<b>-3,052</b>

Teaching and research activities are interdependent: cross-subsidy from international student income supports research activities and cutting-edge research informs curriculum design and practice-led teaching.

The gap between the income received for research and the costs of undertaking research activities arises from a number of factors, including strategic decisions made by universities regarding their research portfolios and the various funding flows that combine to make up the full economic costs of grant-funded activity, support Postgraduate Research training, and institution-own funded research.

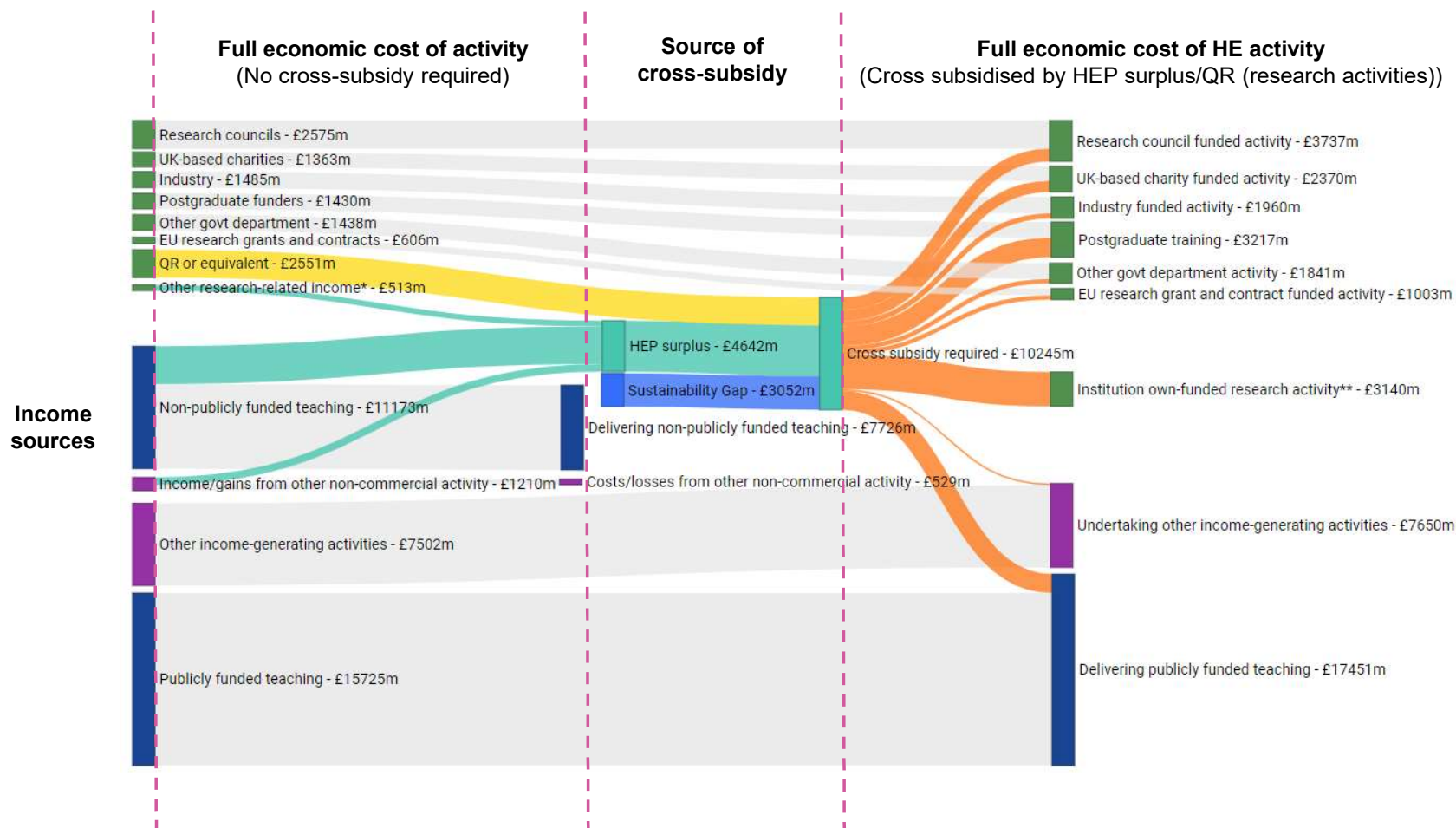
Other factors to consider in terms of the funding gap:

- Growth in teaching income has been driven by increases in international (non-EU) fee income.
- Universities increasingly rely on international tuition fees as an income stream that can support cross-subsidy of teaching and research activities.
- Universities' international reputations and rankings are linked to quality metrics for teaching and research.

<sup>1</sup> Other (Non-Commercial)<sup>1</sup>, can include endowments, donations, and investment gains and losses, with fluctuations from year to year ([TRAC Guidance](#)). In particular, there was significant fluctuation in academic year 2020-21 due to changes brought about by the pandemic.

# Sankey diagram of funding flows in UK universities (AY2022-23)

Full HE sector view for 2022-23



- Across the university sector, at an aggregate level, surplus income primarily derived from delivering non-publicly funded teaching supported the delivery of research activities and publicly-funded teaching.
- QR funding or equivalent funding also supported the delivery of research activities.
- Despite cross-subsidy from surplus-generating income streams, there was still an overall sustainability gap of £3,052 million on all activities.

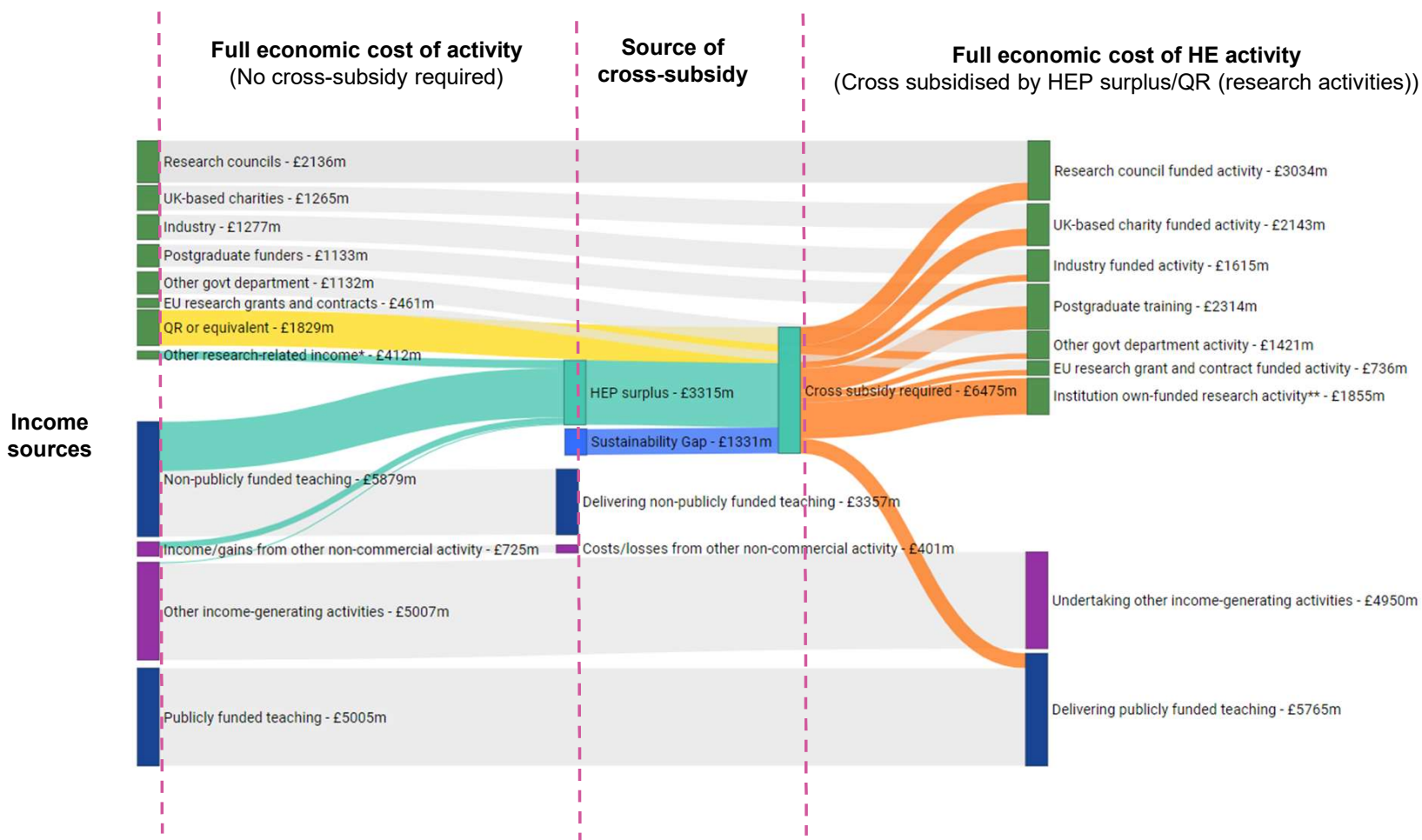
NB: This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

Source: 2022-23 TRAC data for 150 UK universities.



# Sankey diagram of funding flows in TRAC group A universities (AY2022-23)

Peer group A: Institutions with a medical school and research income of 20 per cent or more of total income



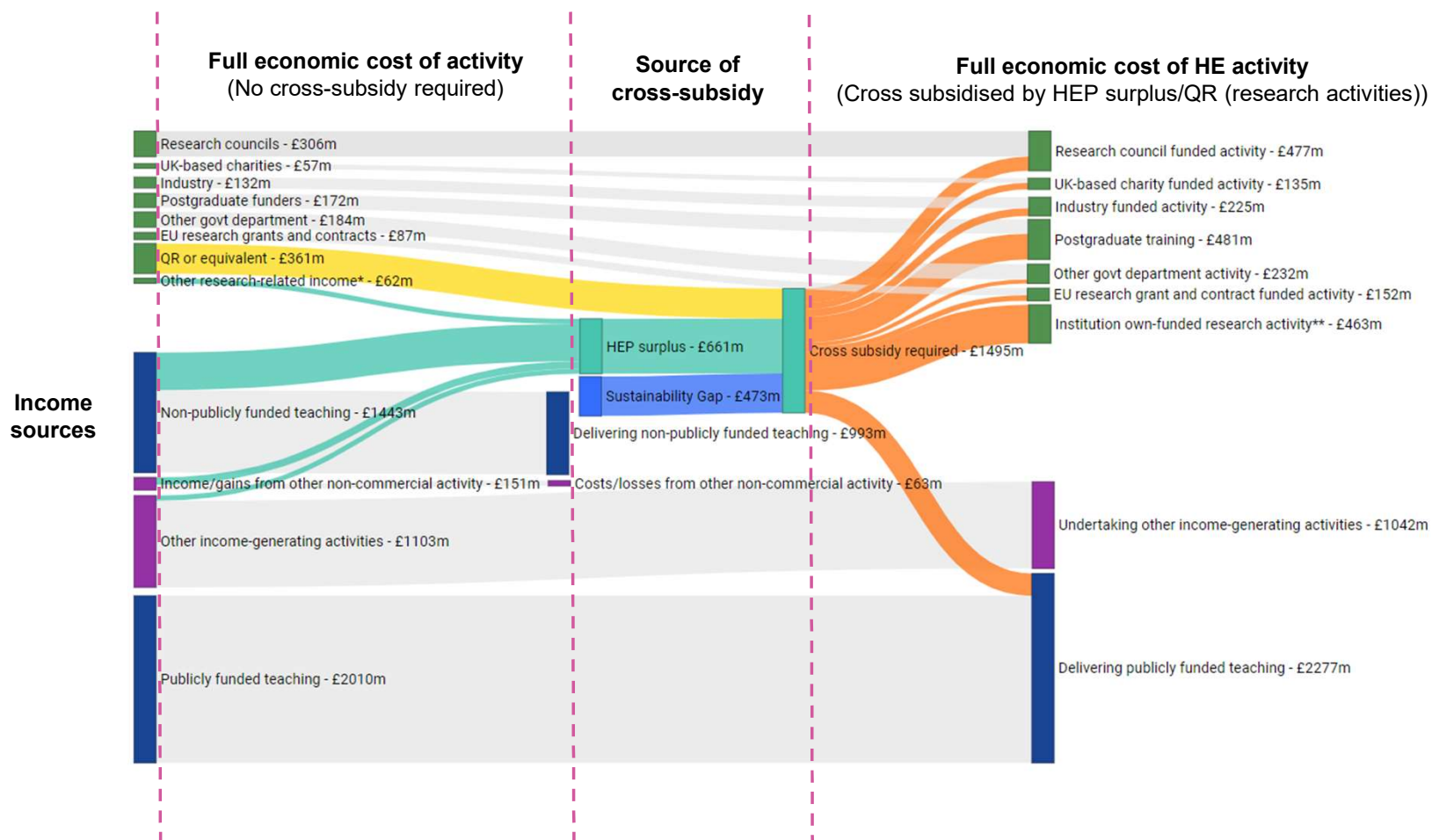
- Between them, TRAC group A universities receive more than 75 per cent of public funds intended for research in universities.
- TRAC A is the only peer group that received more than half of its teaching income for the purpose of delivering non-publicly funded teaching, with this being an income stream that generates surplus income.
- TRAC A universities are typically more research intensive. The surplus income received for non-publicly funded teaching is, as a percentage of total income, highest for this peer group (43%) - which is a large source of cross-subsidy for research activities.

NB: This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

Source: 2022-23 TRAC data for 32 UK TRAC A universities.

# Sankey diagram of funding flows in TRAC group B universities (AY2022-23)

Peer group B: All other institutions with research income of 15 per cent or more of total income (research intensive universities)



- At an aggregate level, TRAC B institutions generated significant income surplus from delivering non-publicly funded teaching.
- This surplus, along with 'QR or equivalent' funding, was spent on universities' research activities and training students ('Postgraduate training').
- In contrast to TRAC group A, TRAC group B, as a collective, earned more of its income from delivering publicly-funded teaching (33 per cent of all income compared to 19 per cent for TRAC A).

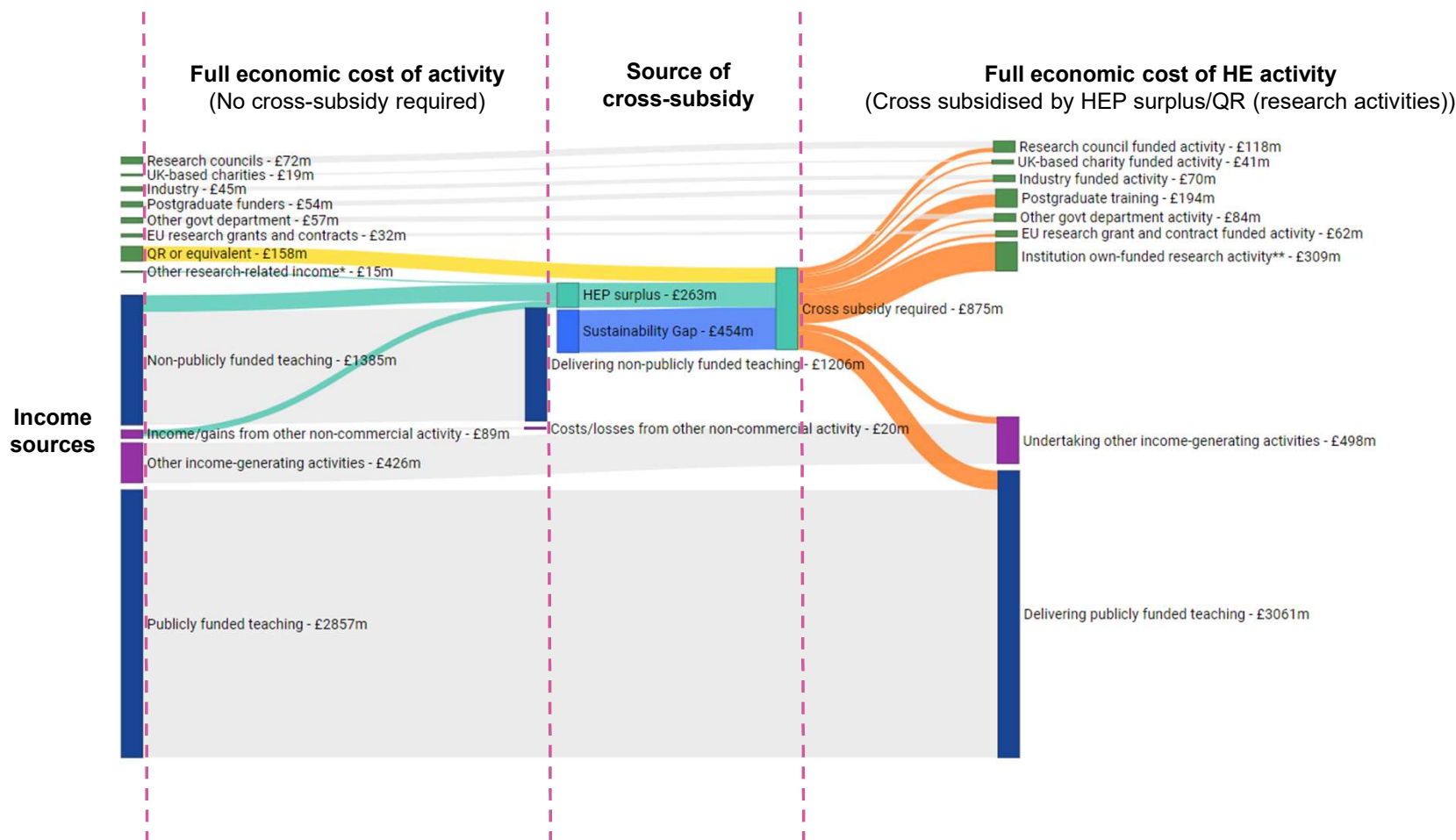
NB: This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

Source: 2022-23 TRAC data for 22 UK TRAC B universities.



# Sankey diagram of funding flows in TRAC group C universities (AY2022-23)

Peer group C: Institutions with a research income\* of between 5 per cent and 15 per cent of total income



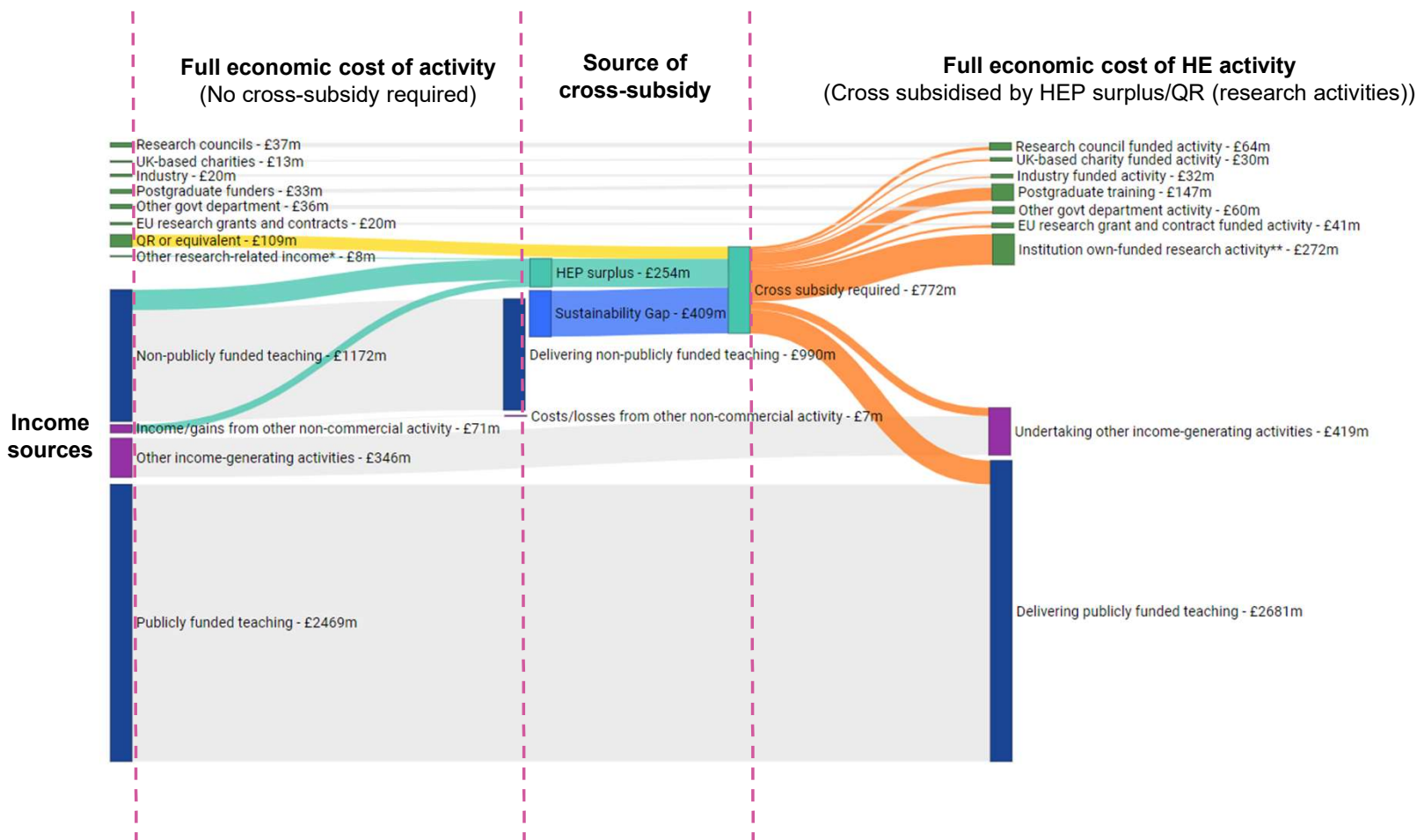
- TRAC group C is more focused on teaching than TRAC groups A and B, with 'Non-publicly funded teaching' and 'Publicly-funded teaching' accounting for 81 per cent of this TRAC group's income.
- QR or equivalent funding and the income surplus ('HEP surplus') helped to fund the delivery of institutions' own-funded research activities, which accounted for 35 per cent of the total full economic cost of research activities for this TRAC group.

NB: This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

Source: 2022-23 TRAC data for 20 UK TRAC C universities.

# Sankey diagram of funding flows in TRAC group D universities (AY2022-23)

Peer group D: Institutions with a research income less than 5 per cent of total income and total income greater than £150M



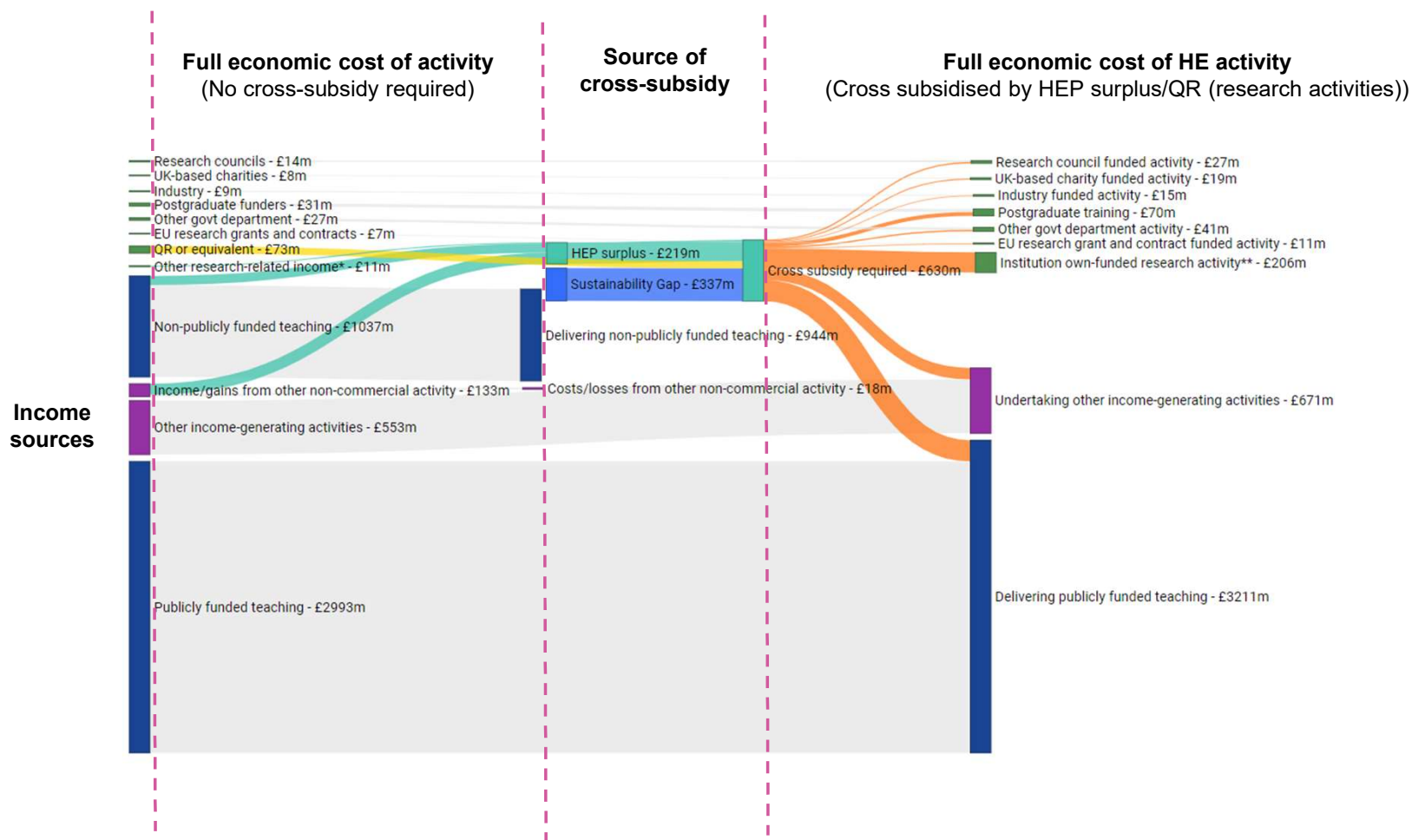
- TRAC group D is similar to TRAC group C, in that there is more of a focus on teaching than research: 'Non-publicly funded teaching' and 'Publicly-funded teaching' accounted for 84 per cent of TRAC group D's income.
- QR or equivalent funding and income surplus from other income streams was used to support the delivery of research activities – specifically institutions' own-funded research activities.

NB: This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

Source: 2022-23 TRAC data for 14 UK TRAC D universities.

# Sankey diagram of funding flows in TRAC group E universities (AY2022-23)

Peer group E: Institutions with a research income\* less than 5 per cent of total income and total income less than or equal to £150M



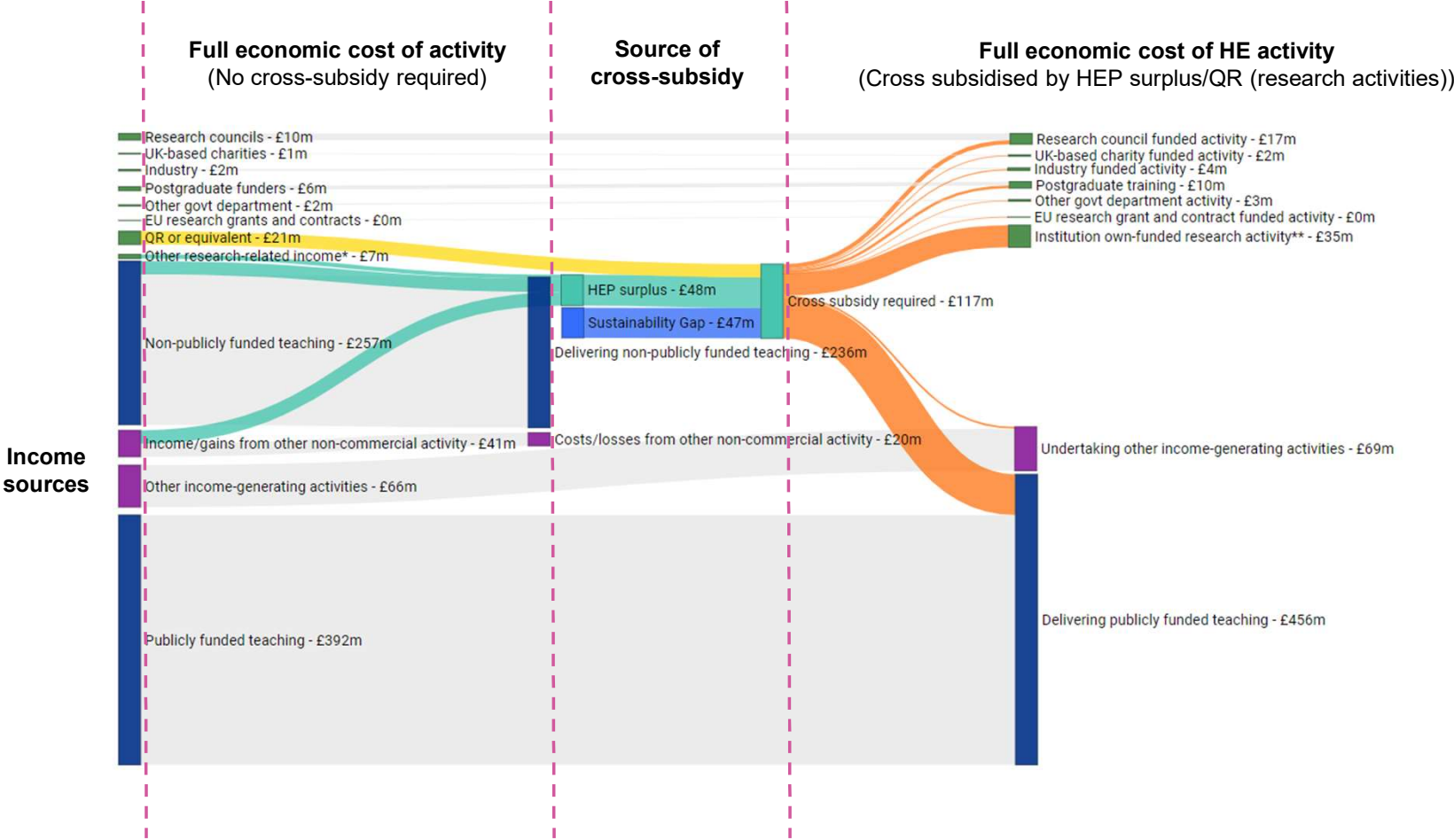
- TRAC E institutions are some of the least research-intensive universities. In terms of the full economic cost of research activities as a proportion of total full economic cost of all activities, TRAC group E recorded the lowest percentage out of all of the TRAC groups at 7 per cent.
- Delivering publicly-funded teaching required the largest cross-subsidy for this TRAC group.

NB: This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

Source: 2022-23 TRAC data for 42 UK TRAC E universities.

# Sankey diagram of funding flows in TRAC group F universities (AY2022-23)

Peer group F: Specialist music/arts teaching institutions



- TRAC F institutions delivered relatively low amounts of research, with almost half (49 per cent) of the research carried out being funded by the institutions themselves.
- Similar to TRAC group E, the largest cross-subsidy was required for delivering publicly-funded teaching. This activity accounted for 54 per cent of the total full economic cost of all activities.

NB: This diagram represents an approximation of how income streams are mapped to costs; in practice this will be different for individual universities. Full Economic Costs include a Margin for Sustainable Investment (MSI) - a measure of the funding required to sustain future plans for investment.

Source: 2022-23 TRAC data for 20 UK TRAC F universities.