Deans of Science meeting

The future of Science in Australian Universities.

Aidan Byrne
25 Oct 2021

Deans of Science meeting

The Challenges facing the HE sector in the next decade and the implications for science teaching and research.

Aidan Byrne
30 Oct 2018
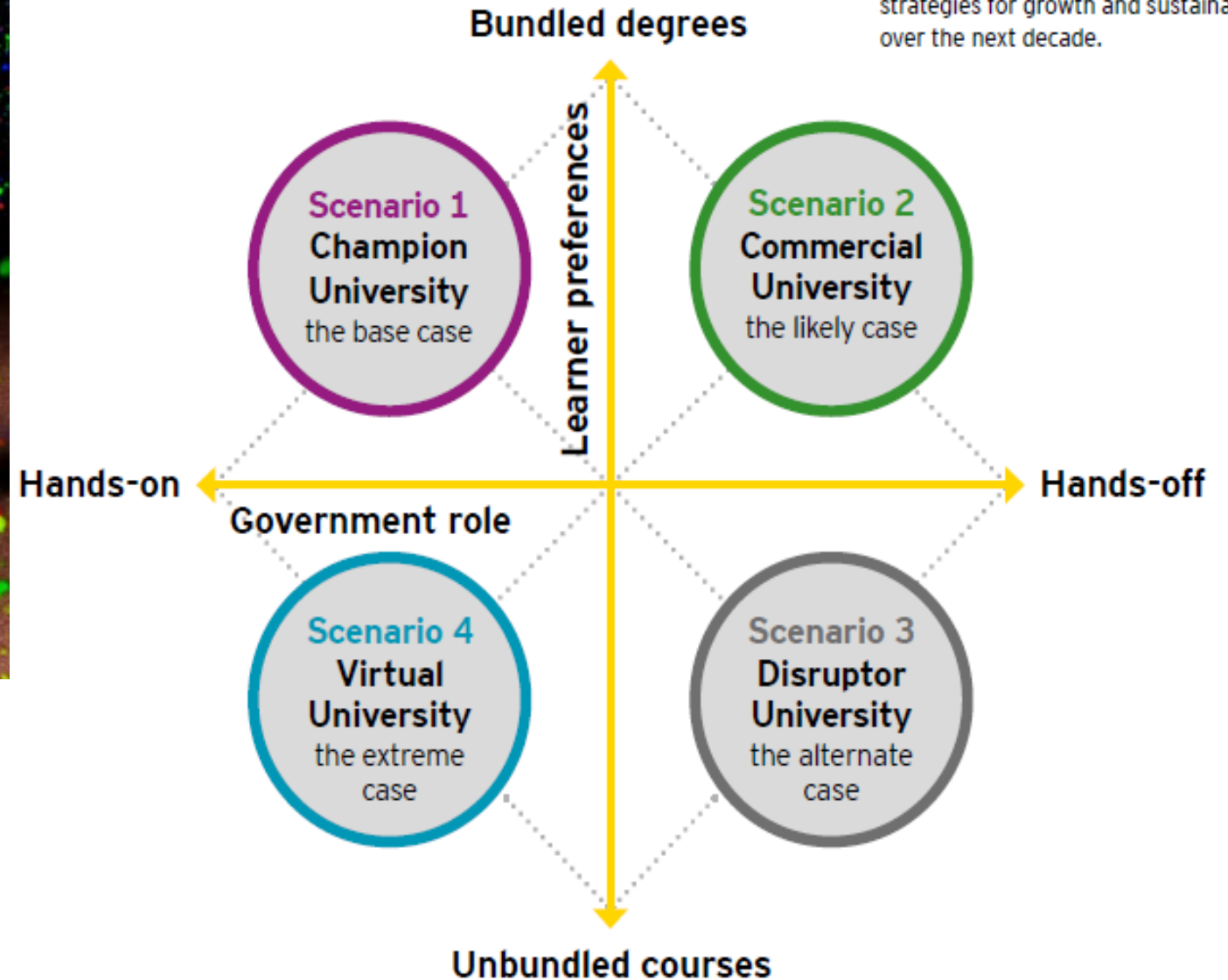
Challenges

- Sector profile

- Near Term Challenges:
  - Exposure to International student volatility
  - Big Data/Big Publishers
  - Federal government disengagement
    - Support for science

- Longer term Threats:
  - What is the relevance of a University in 2030?

Can the universities of today lead learning for tomorrow?

The University of the Future

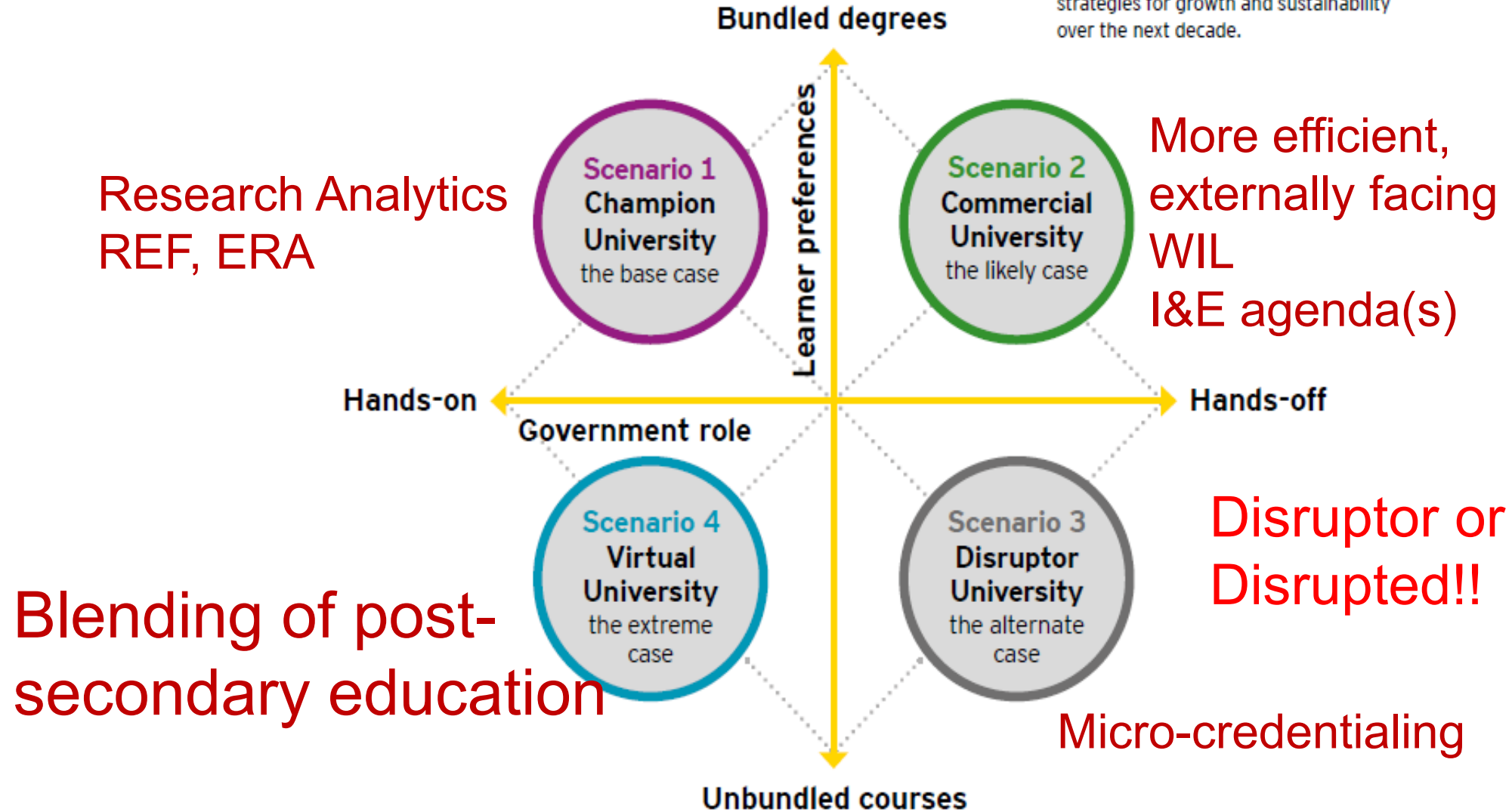strategies for growth and sustainability over the next decade.

Bundled degrees

Learner preferences

Scenario 1
Champion University
the base case

Scenario 2
Commercial University
the likely case

Hands-on ← → **Hands-off**

Government role

Scenario 4
Virtual University
the extreme case

Scenario 3
Disruptor University
the alternate case

Unbundled courses

Lucille Halloran
Managing Partner, Oceania Government and Public Sector, Ernst & Young Australia

Catherine Friday
Partner, Oceania Education Leader, Ernst & Young Australia

http://www.ey.com/au/en/industries/government---public-sector/uof_future-challenges-for-universities

Scenarios

Research Analytics
REF, ERA

More efficient,
externally facing
WIL
I&E agenda(s)

Disruptor or
Disrupted!!

Blending of post-
secondary education

Micro-credentialing

- http://www.ey.com/au/en/industries/government---public-sector/uof_future-challenges-for-universities

University Budget model UNI101

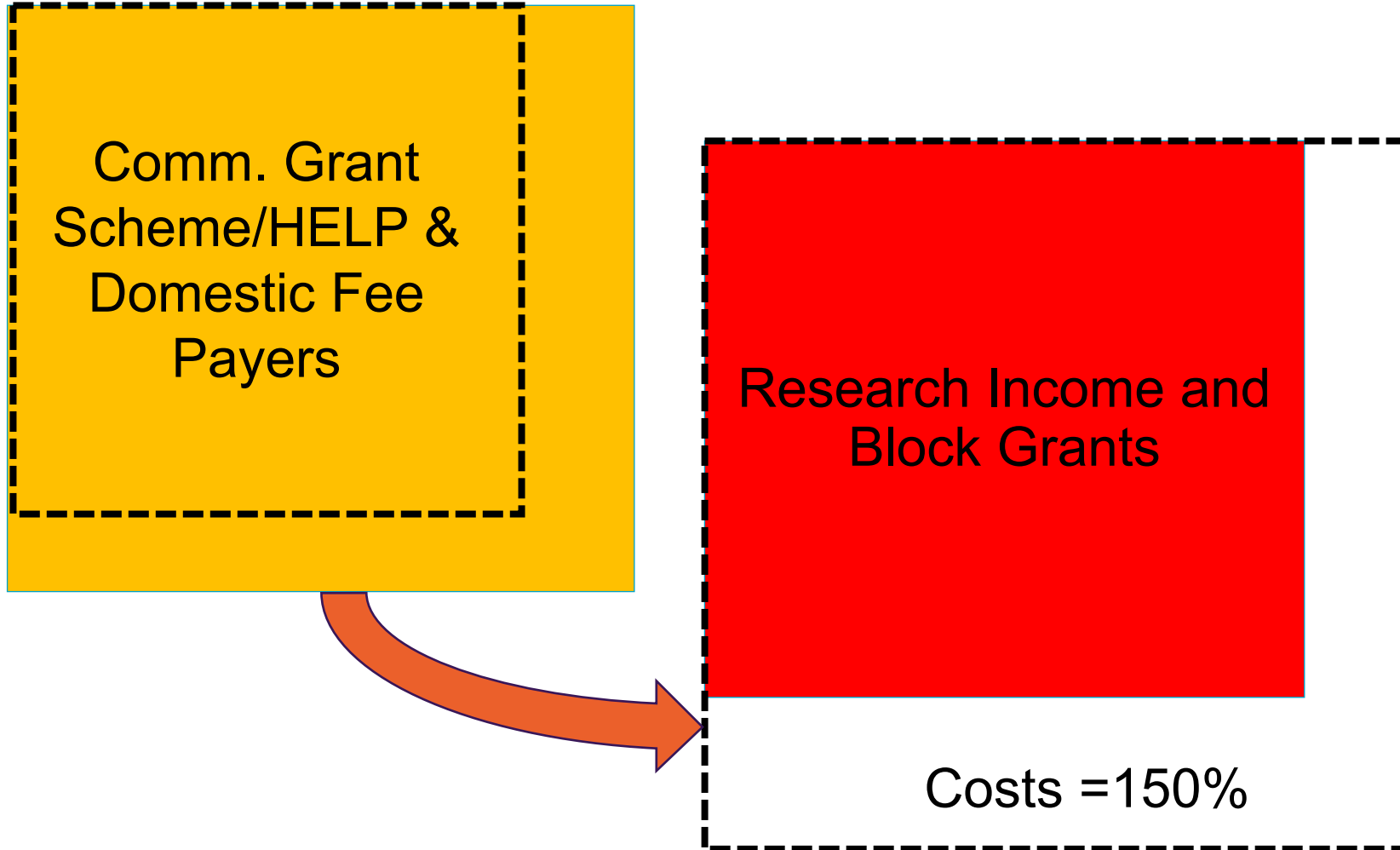Actual costs

"Rivers of gold"

Comm. Grant Scheme/HELP & Domestic Fee Payers

Income exceeds costs of delivery!

DETCOT 2018

(Why not 40/40/20 ?)

University Budget model (Old model)

Comm. Grant Scheme/HELP & Domestic Fee Payers

Research Income and Block Grants

Costs =150%

University Budget model (Research Intensive)
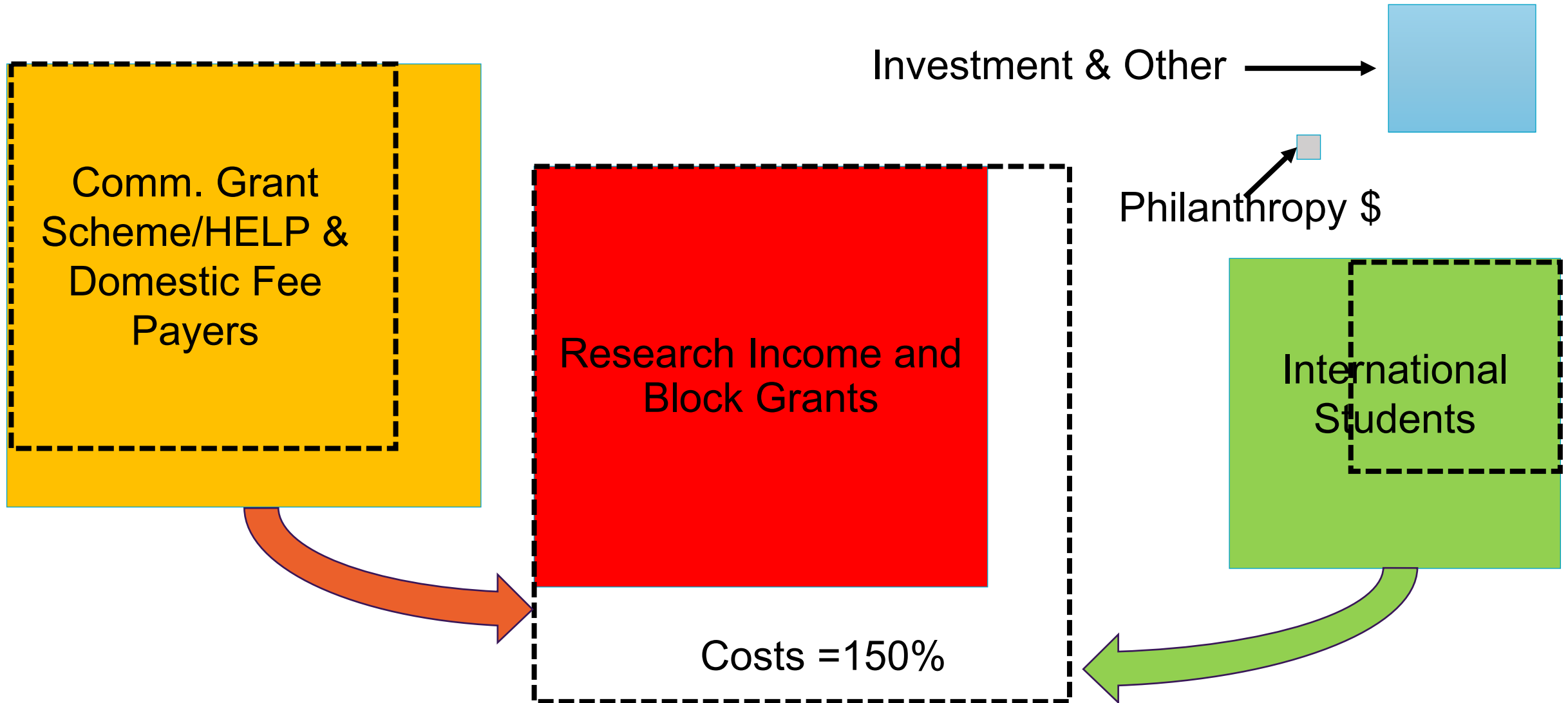
Investment & Other

Philanthropy $

Comm. Grant Scheme/HELP & Domestic Fee Payers

Research Income and Block Grants

Costs =150%

International Students

- Sector profile

- Near Term Challenges:
  - Exposure to International student volatility
  - Big Data/Big Publishers   (Govt confusion !!)
  - Federal government disengagement
    - Support for science

- Longer term Threats:
  - What is the relevance of a University in 2030?
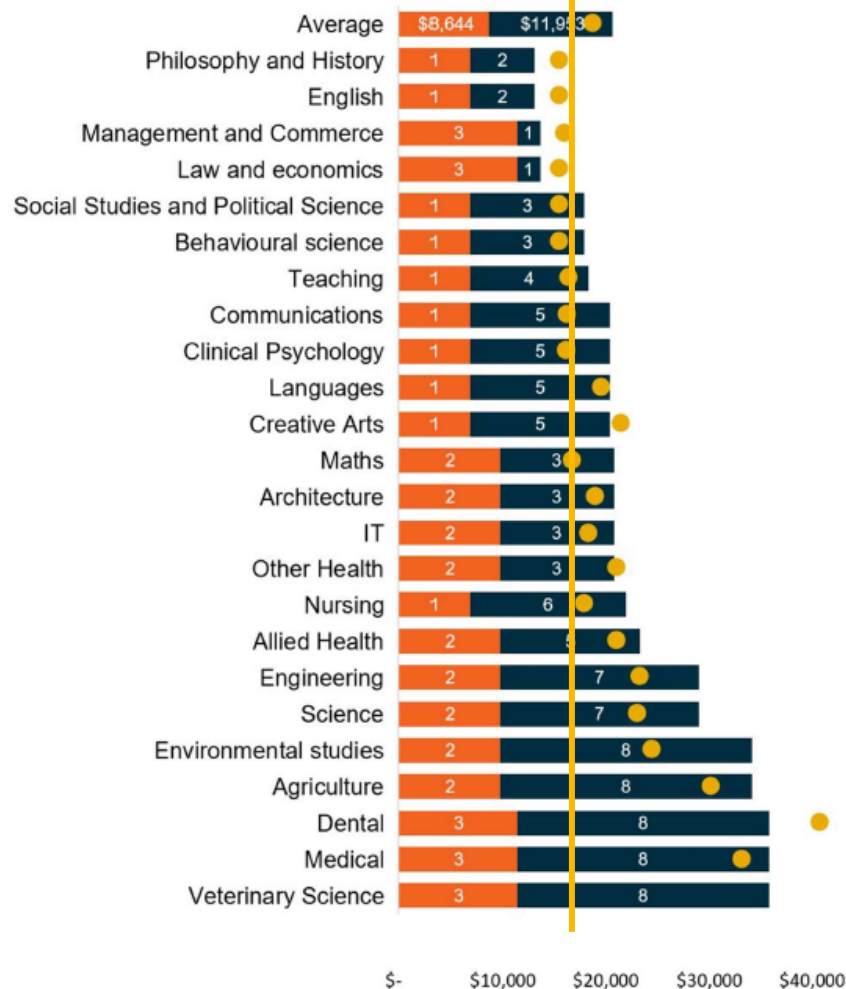
- Covid

- Covid19

- COVID

CDC
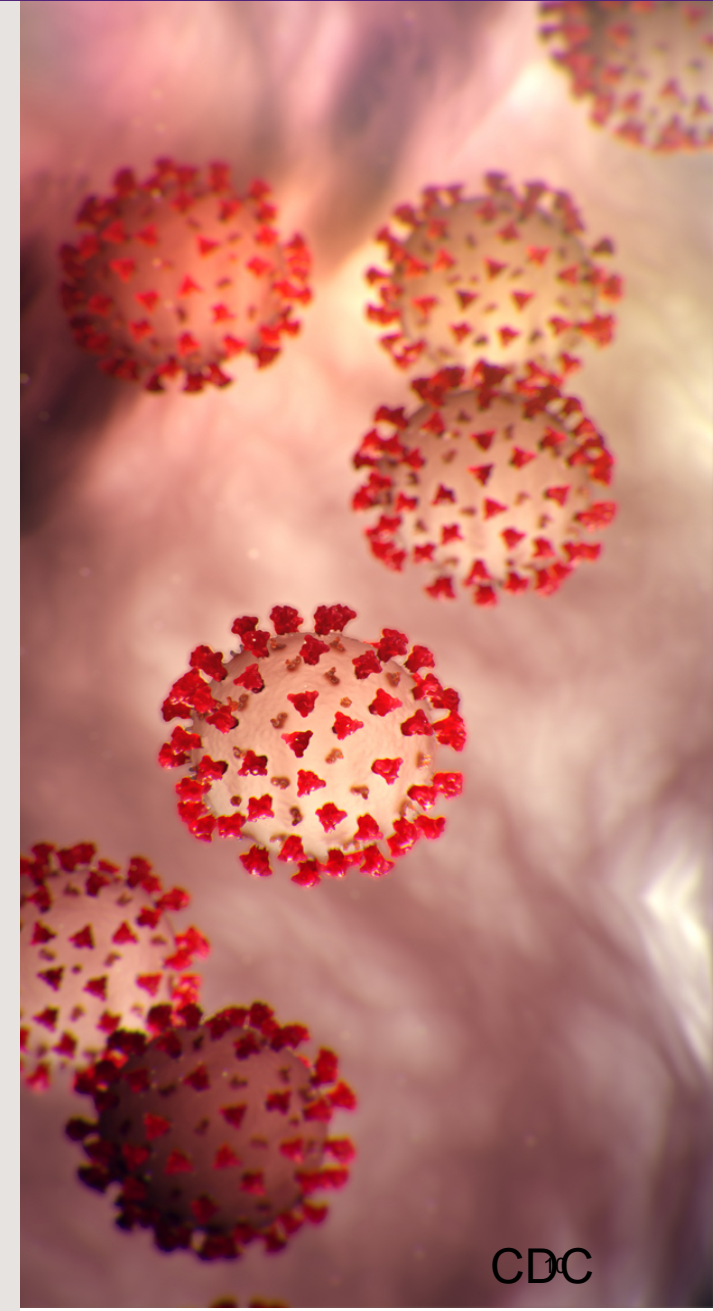
Commonwealth Grant Scheme Reforms

- Funding envelope remains **capped**. No longer able to respond with full flexibility to student demand.

- Students to pay 48% on average up from 42% (but varies significantly by discipline)

- Total revenue per student reduced to **align with cost of teaching**, reducing margin available to cover research.

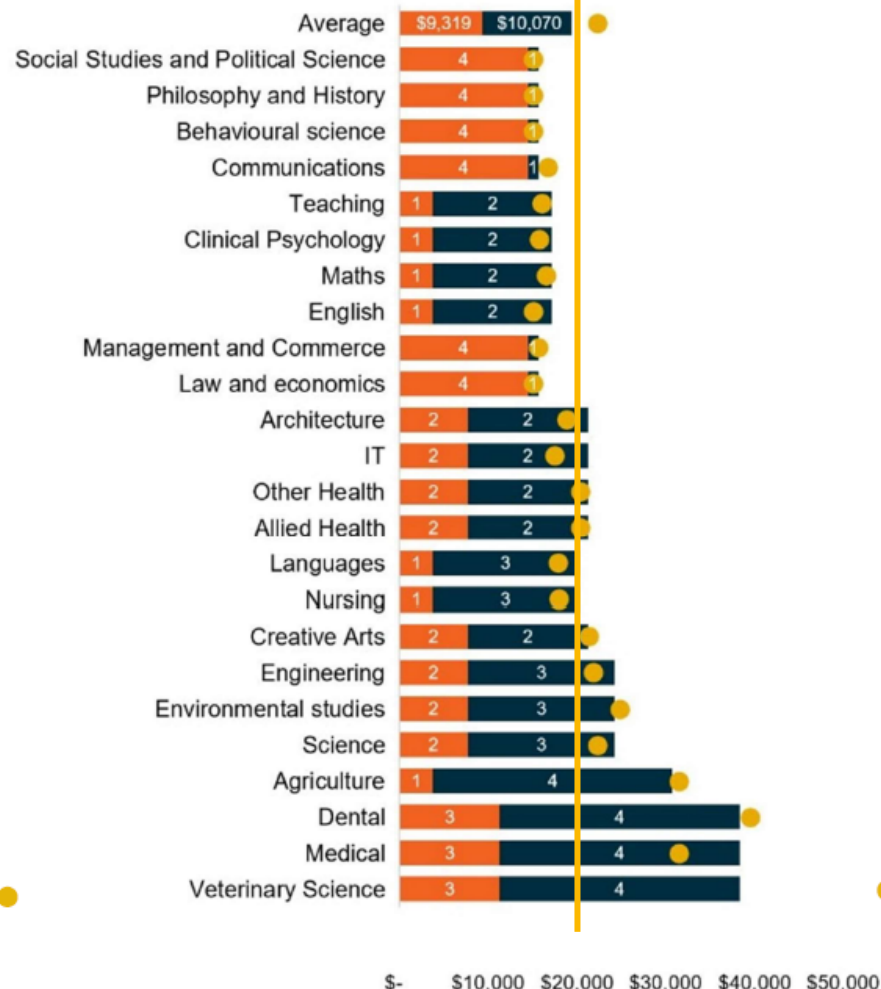- Greater flexibility to use funding for Post Grad programs.

Current Model

Average | $8,644 | $11,9?3
Philosophy and History | 1 | 2
English | 1 | 2
Management and Commerce | 3 | 1
Law and economics | 3 | 1
Social Studies and Political Science | 1 | 3
Behavioural science | 1 | 3
Teaching | 1 | 4
Communications | 1 | 5
Clinical Psychology | 1 | 5
Languages | 1 | 5
Creative Arts | 1 | 5
Maths | 2 | 3
Architecture | 2 | 3
IT | 2 | 3
Other Health | 2 | 3
Nursing | 1 | 6
Allied Health | 2 |
Engineering | 2 | 7
Science | 2 | 7
Environmental studies | 2 | 8
Agriculture | 2 | 8
Dental | 3 | 8
Medical | 3 | 8
Veterinary Science | 3 | 8

New Model

Average | $9,319 | $10,070
Social Studies and Political Science | 4 | 1
Philosophy and History | 4 | 1
Behavioural science | 4 | 1
Communications | 4 | 1
Teaching | 1 | 2
Clinical Psychology | 1 | 2
Maths | 1 | 2
English | 1 | 2
Management and Commerce | 4 |
Law and economics | 4 | 1
Architecture | 2 | 2
IT | 2 | 2
Other Health | 2 | 2
Allied Health | 2 | 2
Languages | 1 | 3
Nursing | 1 | 3
Creative Arts | 2 | 2
Engineering | 2 | 3
Environmental studies | 2 | 3
Science | 2 | 3
Agriculture | 1 | 4
Dental | 3 | 4
Medical | 3 | 4
Veterinary Science | 3 | 4

Legend:
- Student Contribution
- Commonwealth Contribution
- Cost
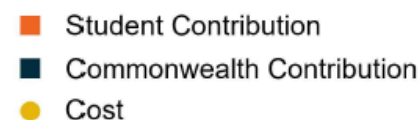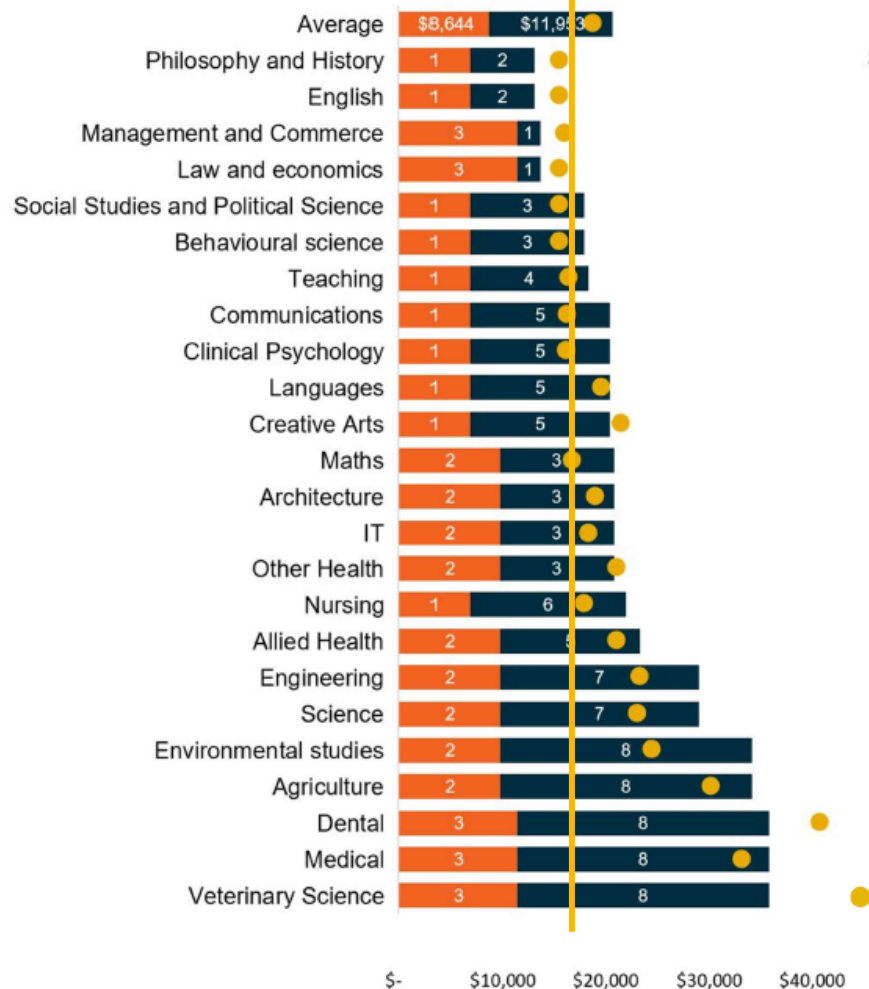
Used industry provided "cost of teaching data"

Principle:

Total CSP Revenue per EFTSL reduced so it's closer to the costs of teaching

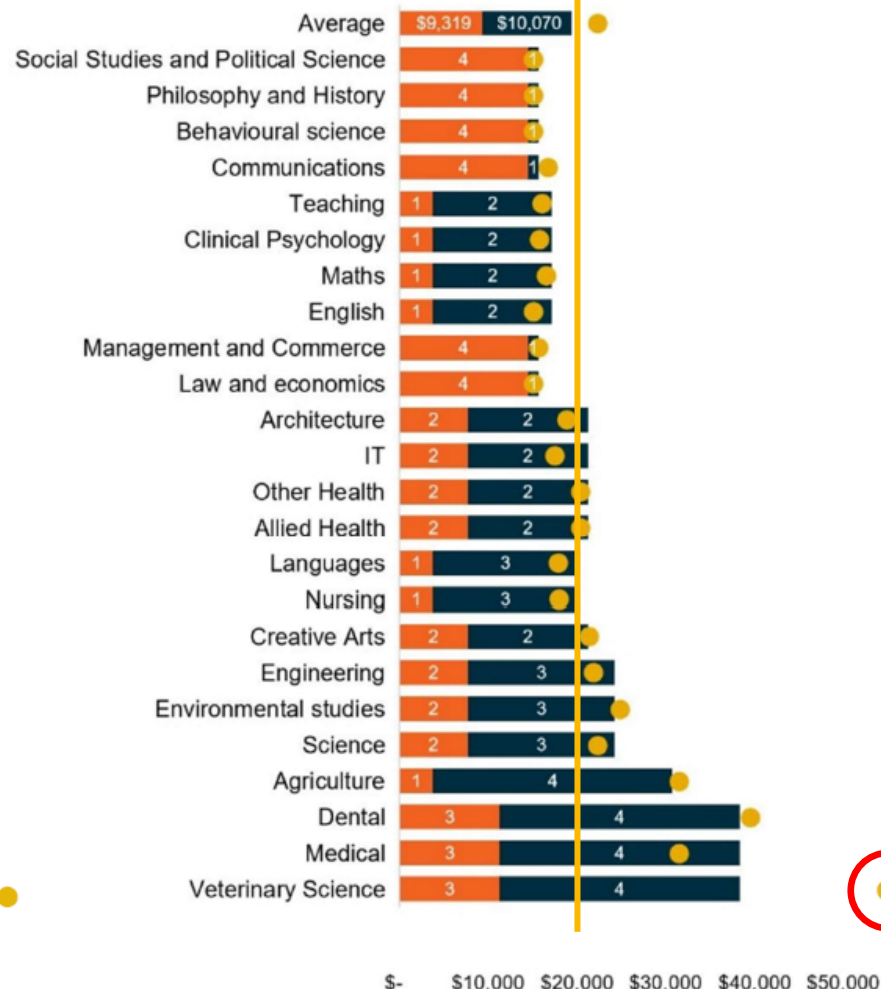# Job Ready Graduates

Current Model

	Student Contribution	Commonwealth Contribution
Average	$8,644	$11,9?3
Philosophy and History	1	2
English	1	2
Management and Commerce	3	1
Law and economics	3	1
Social Studies and Political Science	1	3
Behavioural science	1	3
Teaching	1	4
Communications	1	5
Clinical Psychology	1	5
Languages	1	5
Creative Arts	1	5
Maths	2	3
Architecture	2	3
IT	2	3
Other Health	2	3
Nursing	1	6
Allied Health	2	
Engineering	2	7
Science	2	7
Environmental studies	2	8
Agriculture	2	8
Dental	3	8
Medical	3	8
Veterinary Science	3	8

New Model

	Student Contribution	Commonwealth Contribution
Average	$9,319	$10,070
Social Studies and Political Science	4	1
Philosophy and History	4	1
Behavioural science	4	1
Communications	4	1
Teaching	1	2
Clinical Psychology	1	2
Maths	1	2
English	1	2
Management and Commerce	4	
Law and economics	4	1
Architecture	2	2
IT	2	2
Other Health	2	2
Allied Health	2	2
Languages	1	3
Nursing	1	3
Creative Arts	2	2
Engineering	2	3
Environmental studies	2	3
Science	2	3
Agriculture	1	4
Dental	3	4
Medical	3	4
Veterinary Science	3	4

VET

- ■ Student Contribution
- ■ Commonwealth Contribution
- ● Cost

Used industry provided "cost of teaching data"

Principle:
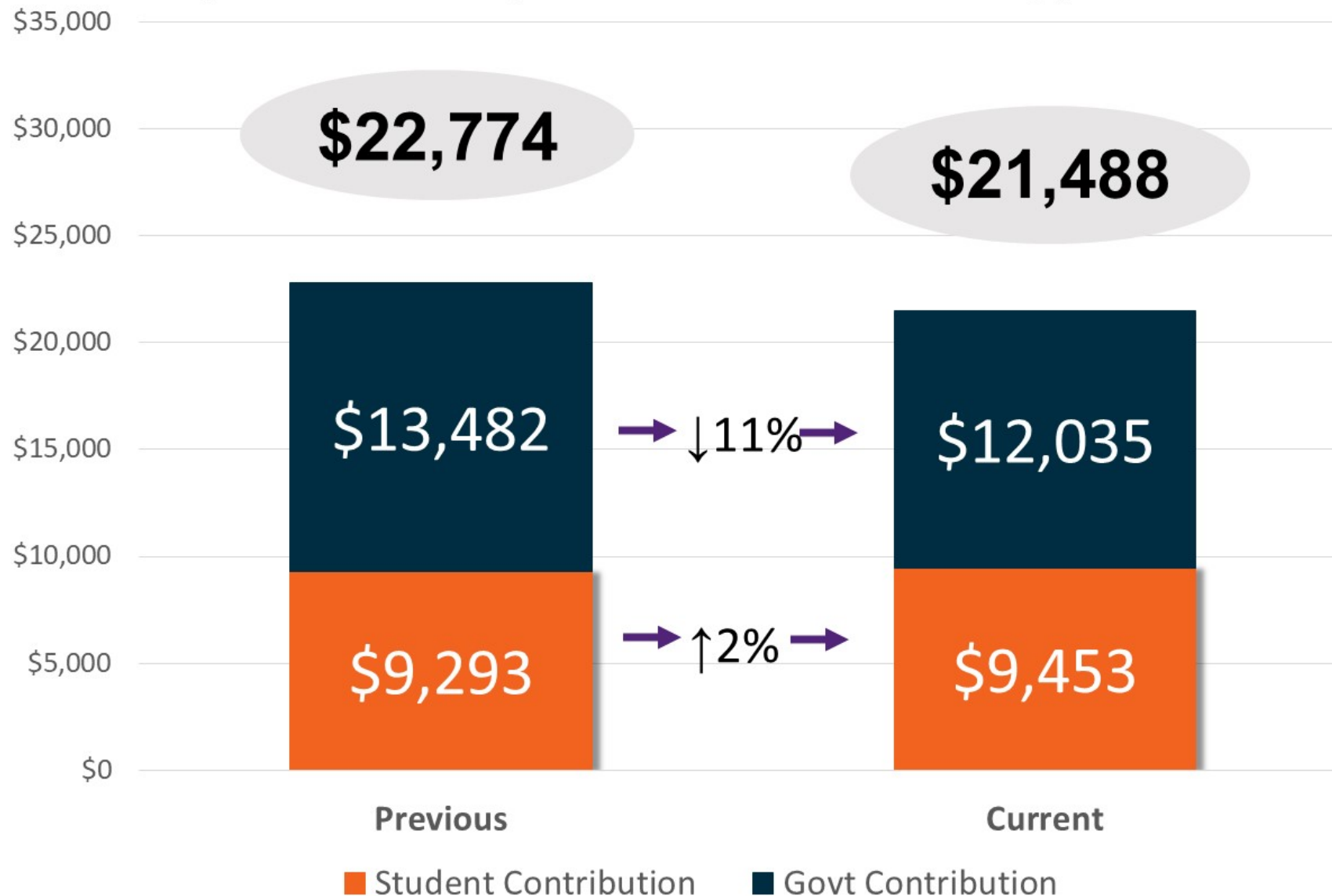
Total CSP Revenue per EFTSL reduced so it's closer to the costs of teaching

Job Ready Graduates

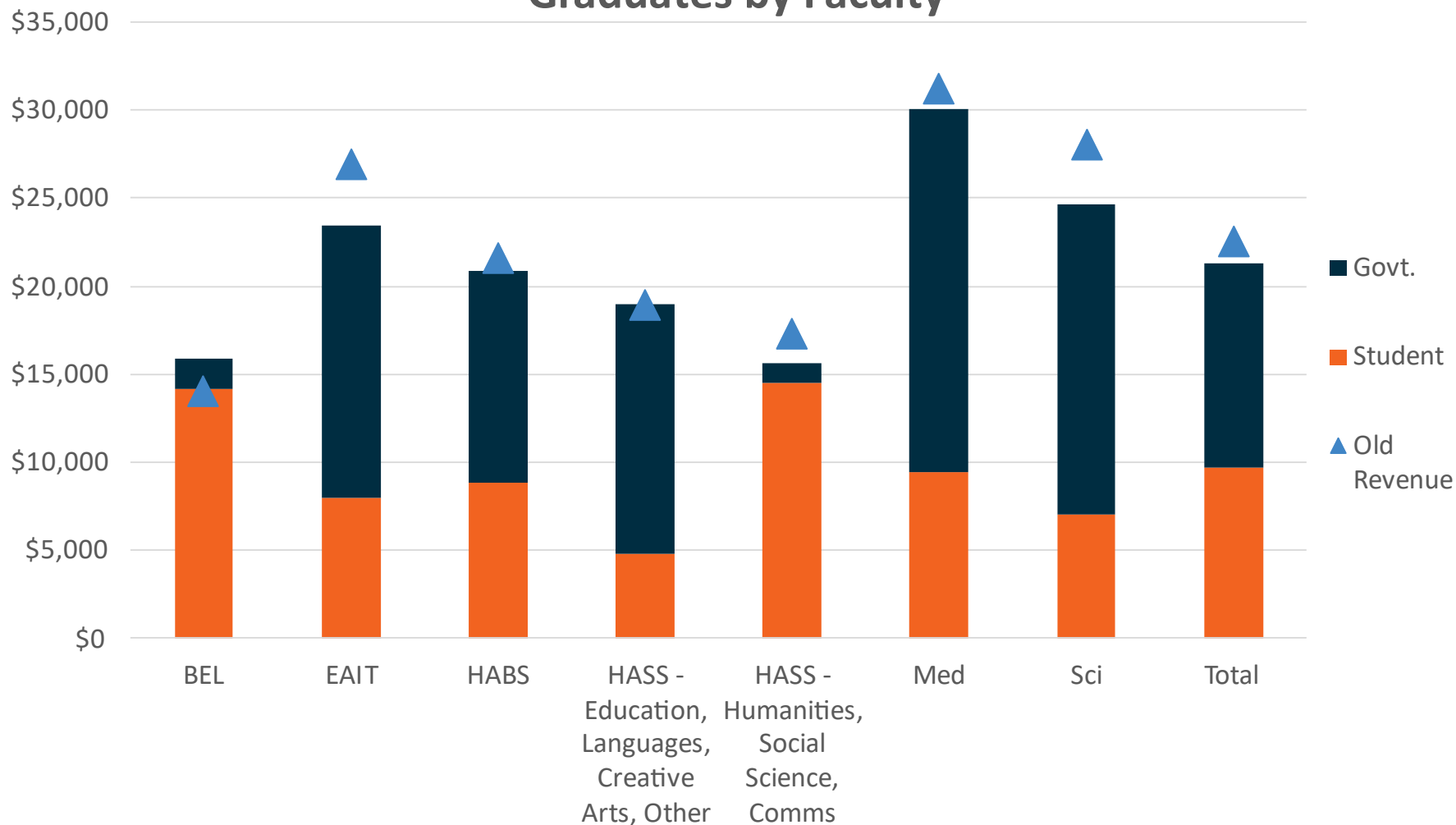At UQ, the funding per EFTSL will drop approx. 6%.

On average, students will pay 2% more and govt will pay 11% less per EFTSL.

Our funding envelope was been reset down accordingly with a small increase of 1.6% by 2024 added for extra places

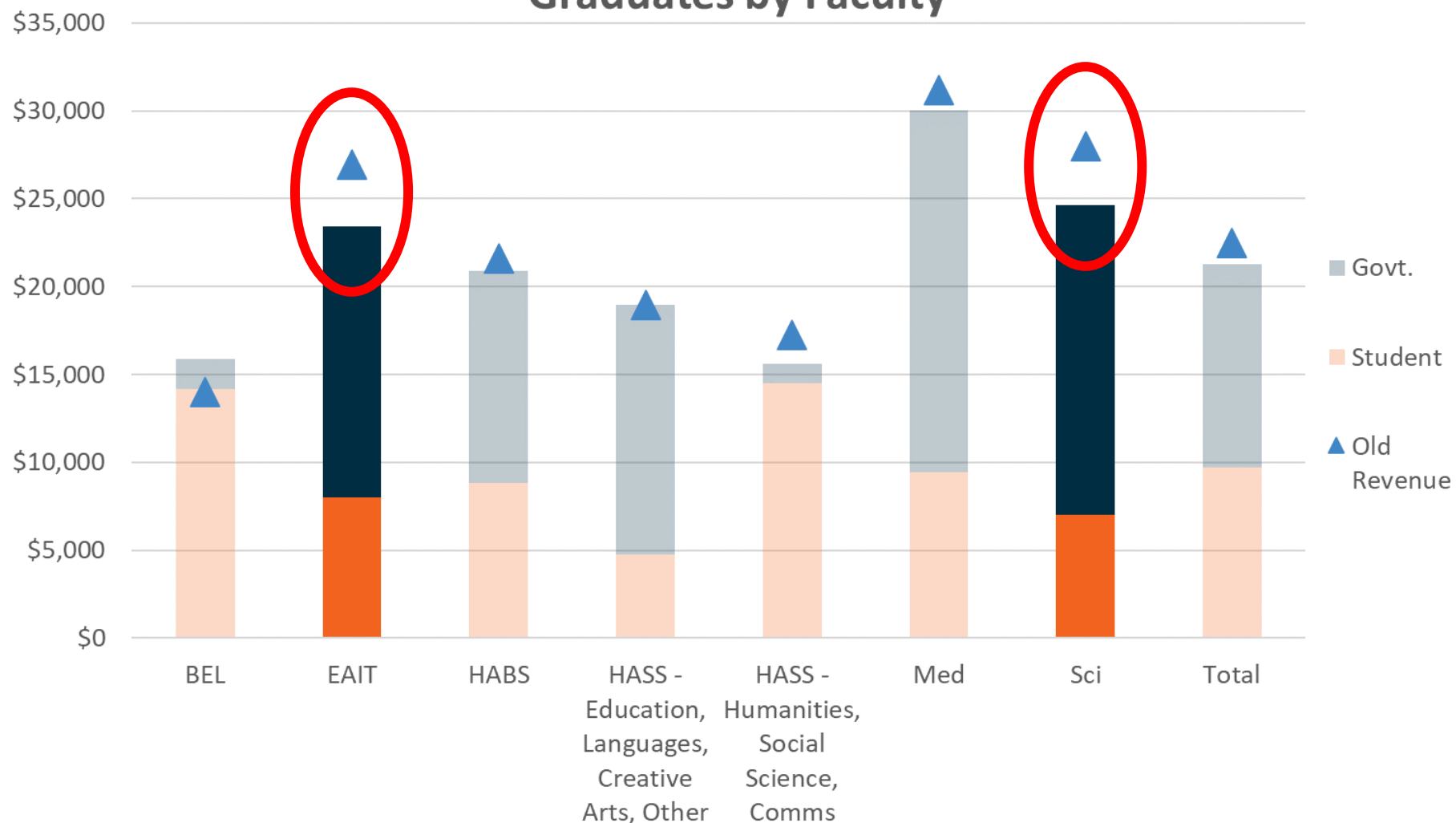**Based on UQ's discipline mix in 2021**

Job Ready Graduates

Student vs Cwlth Revenue per EFTSL under Job Ready Graduates by Faculty

Legend:
- Govt.
- Student
- ▲ Old Revenue
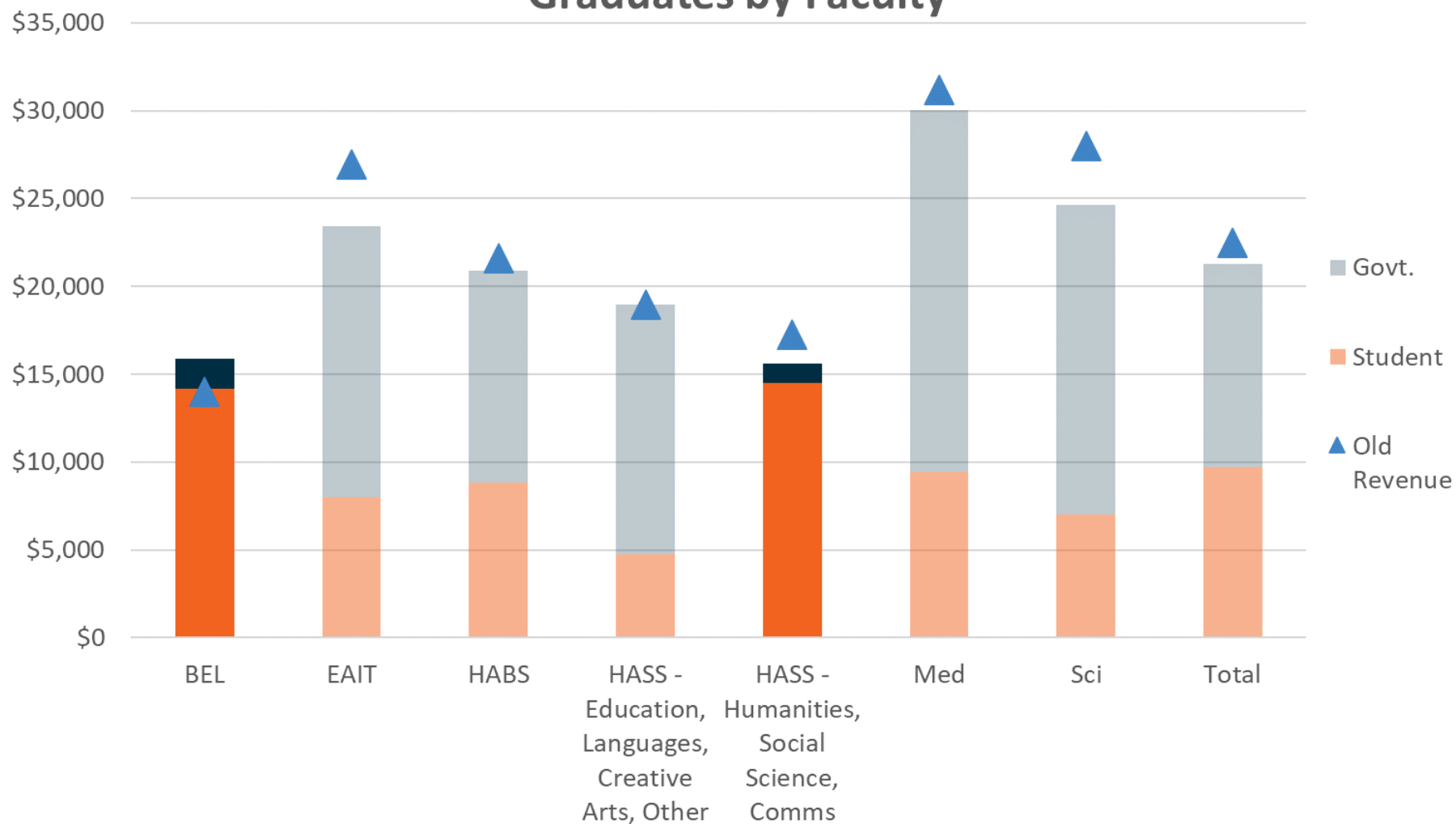
Significant change in student contribution.

Will HECS determine student choice?

Cluster	Load	Cost	HECS	CGS	HECS + CGS
Law Com	1000	15300	14500	1100	15600
English	1000	15300	3700	13500	17200
Humanities	1000	15300	14500	1100	15600
Comp Built	1000	19040	7700	13500	21200
Math	1000	16864	3700	13500	17200
SocSci	1000	15096	14500	1100	15600
Education	1000	16184	3700	13500	17200
Communication	1000	17000	14500	1100	15600
Languages	1000	18020	3700	16500	20200
VisPerfArts	1000	21420	7700	13500	21200
ClinPsy	1000	15980	3700	13500	17200
AlHealth	1000	20400	7700	13500	21200
Nursing	1000	18020	3700	16500	20200
EngSci	1000	22440	7700	16500	24200
DenMedVet	1000	40800	11300	27000	38300
Agri	1000	31960	3700	27000	30700
Enviro	1000	25160	7700	16500	24200
HumanMov	1000	15980	7700	13500	21200

Costs from Deloitte

Current student profile (CGS, Clusters)

CGS cap!!

CGS (capped)+ HECS

+/- 10%

Income

EFTSL

Pie chart labels: Agri, Enviro, LawCom, English, Humanities, CompBuilt, Math, SocSci, HumanMov, Education, Communication, Languages, ClinPsy, VisPerfArts, AIHealth, Nursing, EngSci, DenMedVet
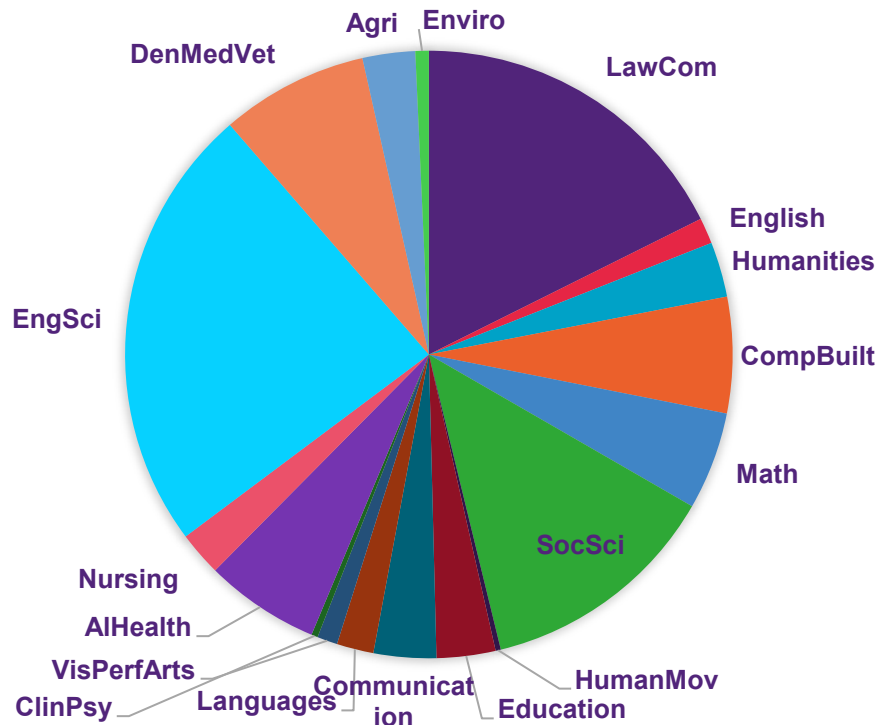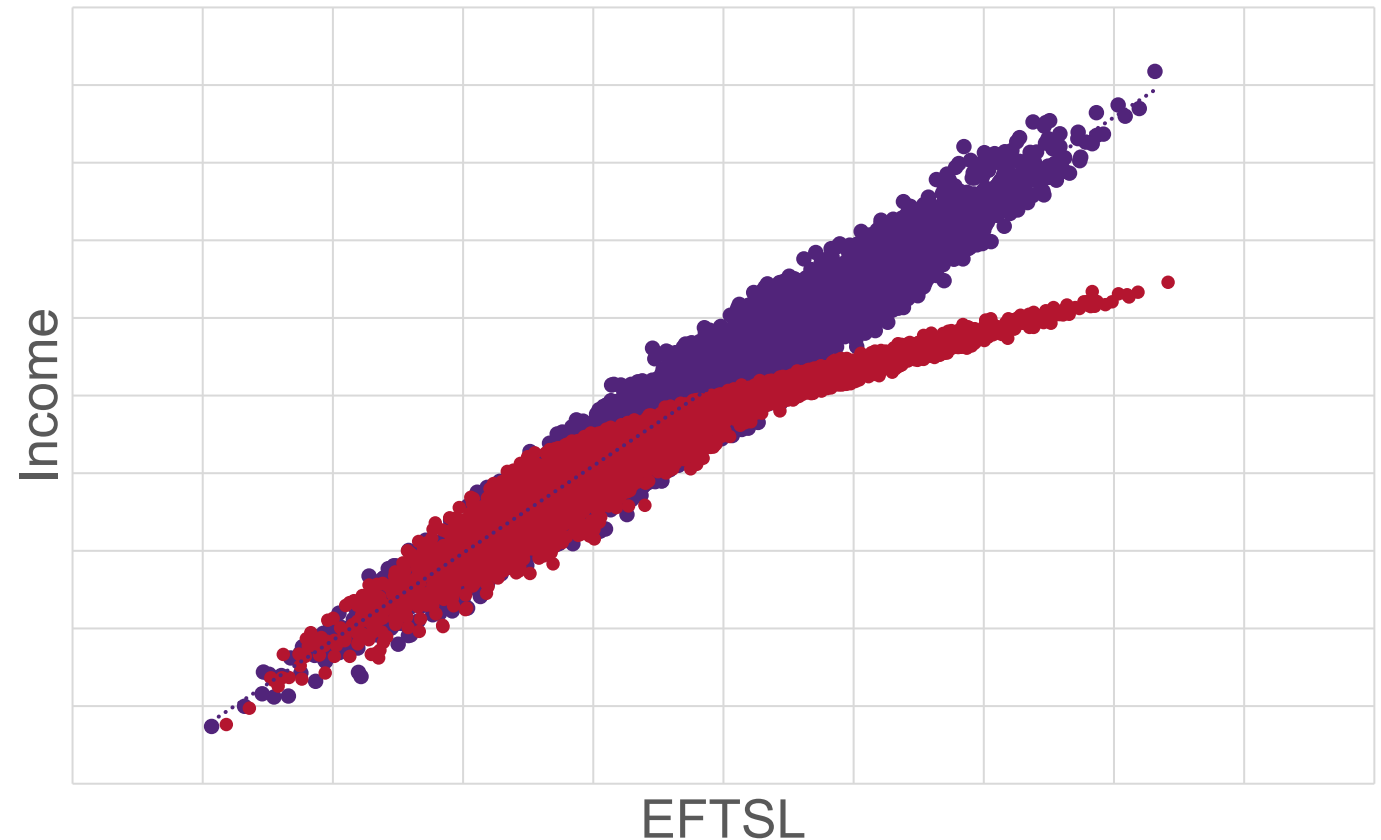
Margins are more important!!

Cluster	Load	Cost	HECS	CGS	HECS + CGS	Margin	No CGS Margin
Law Com	1000	15300	14500	1100	15600	300	-800
English	1000	15300	3700	13500	17200	1900	-11600
Humanities	1000	15300	14500	1100	15600	300	-800
Comp Built	1000	19040	7700	13500	21200	2160	-11340
Math	1000	16864	3700	13500	17200	336	-13164
SocSci	1000	15096	14500	1100	15600	504	-596
Education	1000	16184	3700	13500	17200	1016	-12484
Communication	1000	17000	14500	1100	15600	-1400	-2500
Languages	1000	18020	3700	16500	20200	2180	-14320
VisPerfArts	1000	21420	7700	13500	21200	-220	-13720
ClinPsy	1000	15980	3700	13500	17200	1220	-12280
AlHealth	1000	20400	7700	13500	21200	800	-12700
Nursing	1000	18020	3700	16500	20200	2180	-14320
EngSci	1000	22440	7700	16500	24200	1760	-14740
DenMedVet	1000	40800	11300	27000	38300	-2500	-29500
Agri	1000	31960	3700	27000	30700	-1260	-28260
Enviro	1000	25160	7700	16500	24200	-960	-17460
HumanMov	1000	15980	7700	13500	21200	5220	-8280

Costs from Deloitte

Capped CGS

Margin !

Cluster	Load	Cost	HECS	CGS	HECS + CGS	Margin	No CGS Margin
Law Com	1000	15300	14500	1100	15600	300	-800
English	1000	15300	3700	13500	17200	1900	-11600
Humanities	1000	15300	14500	1100	15600	300	-800
Comp Built	1000	19040	7700	13500	21200	2160	-11340
Math	1000	16864	3700	13500	17200	336	-13164
SocSci	1000	15096	14500	1100	15600	504	-596
Education	1000	16184	3700	13500	17200	1016	-12484
Communication	1000	17000	14500	1100	15600	-1400	-2500
Languages	1000	18020	3700	16500	20200	2180	-14320
VisPerfArts	1000	21420	7700	13500	21200	-220	-13720
ClinPsy	1000	15980	3700	13500	17200	1220	-12280
AlHealth	1000	20400	7700	13500	21200	800	-12700
Nursing	1000	18020	3700	16500	20200	2180	-14320
EngSci	1000	22440	7700	16500	24200	1760	-14740
DenMedVet	1000	40800	11300	27000	38300	-2500	-29500
Agri	1000	31960	3700	27000	30700	-1260	-28260
Enviro	1000	25160	7700	16500	24200	-960	-17460
HumanMov	1000	15980	7700	13500	21200	5220	-8280

Margin with -100/+100% load
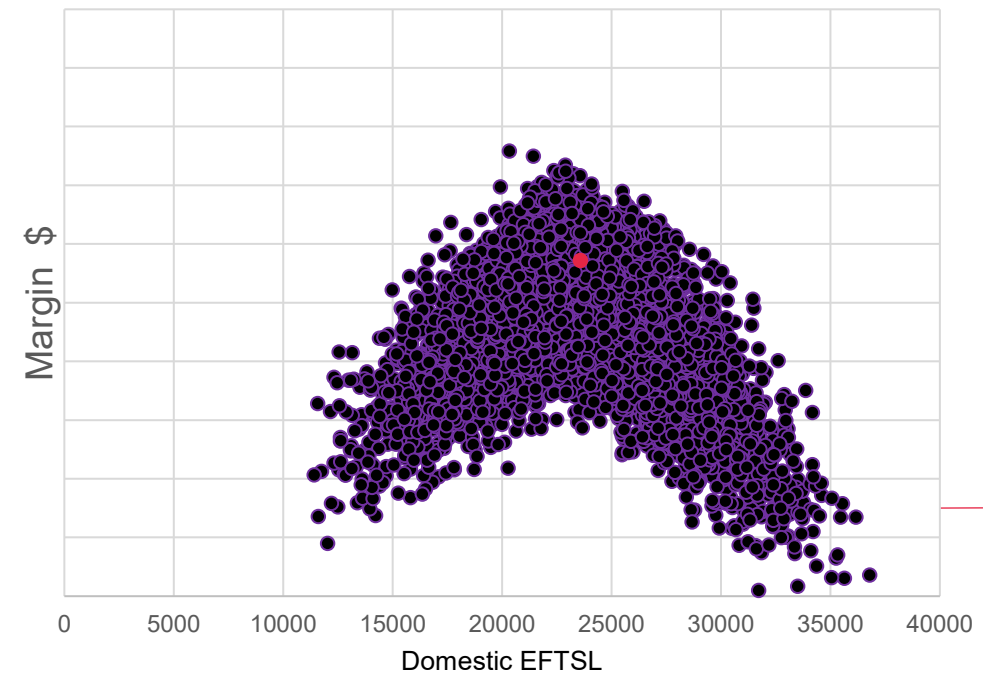
(y-axis: Margin $; x-axis: Domestic EFTSL)

Optimisation Model

fixed EFTSL +/- 20%

Fixed EFTSL !

Optimisation Model
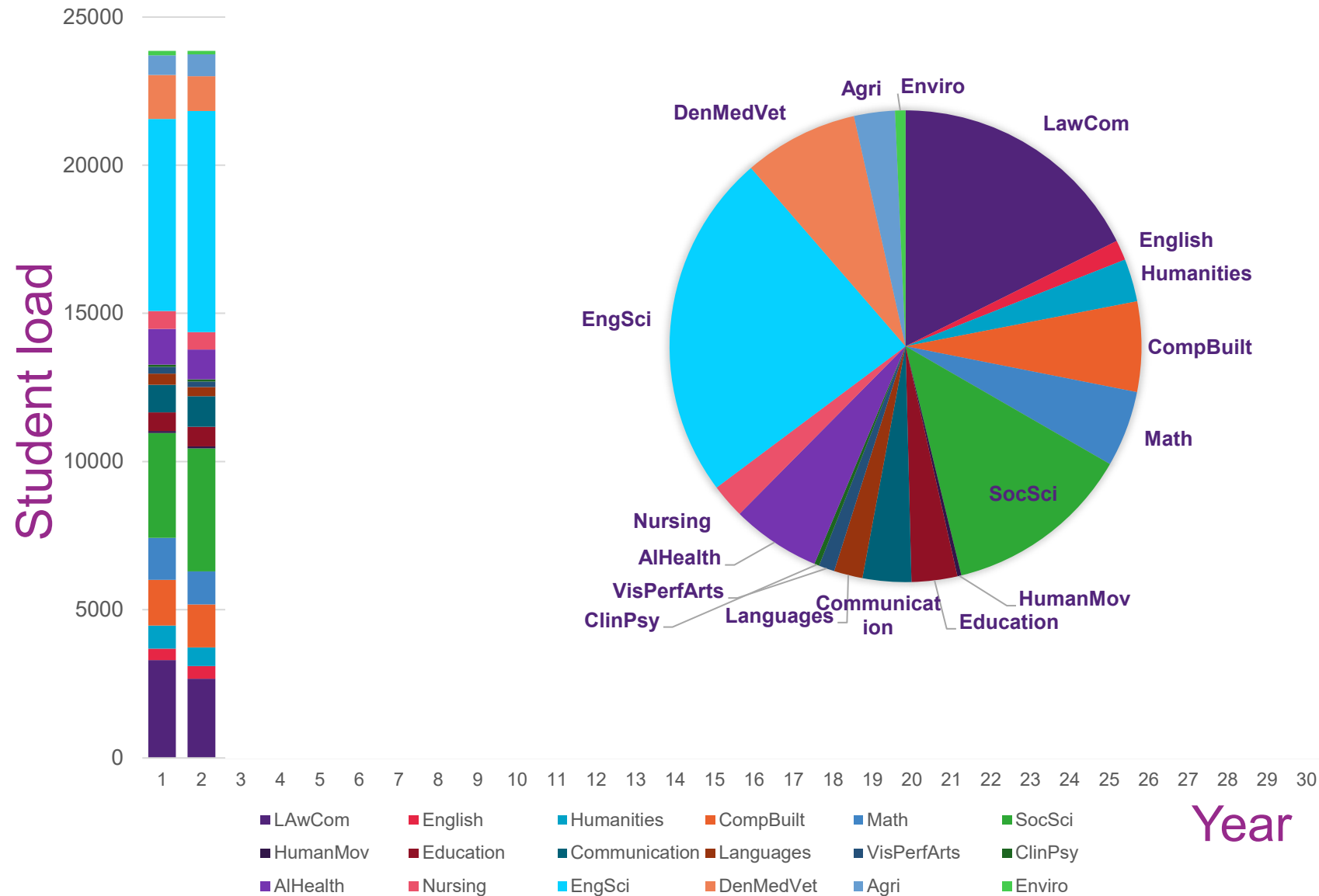
fixed EFTSL +/- 20%
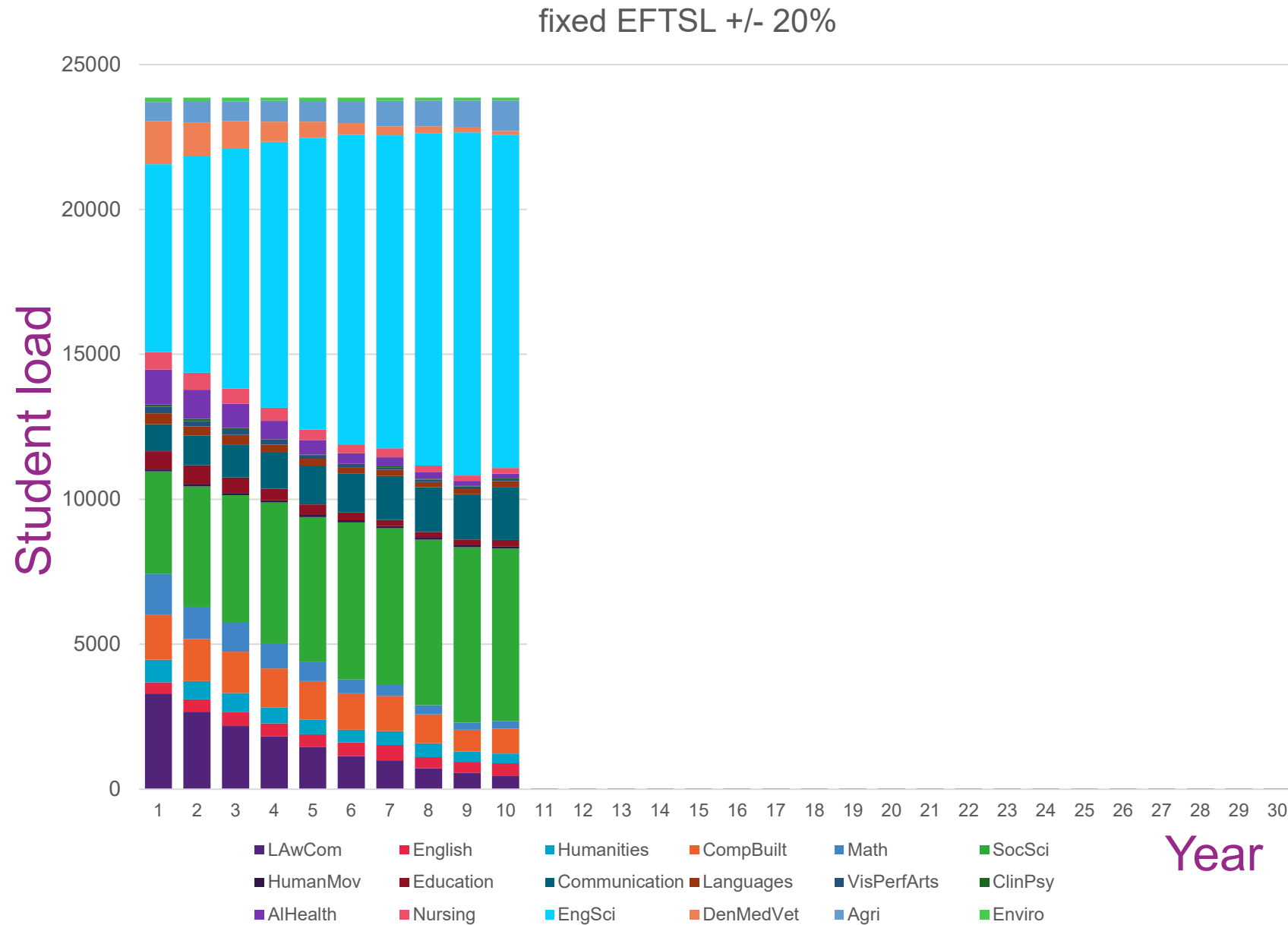
Fixed EFTSL !

Optimisation Model
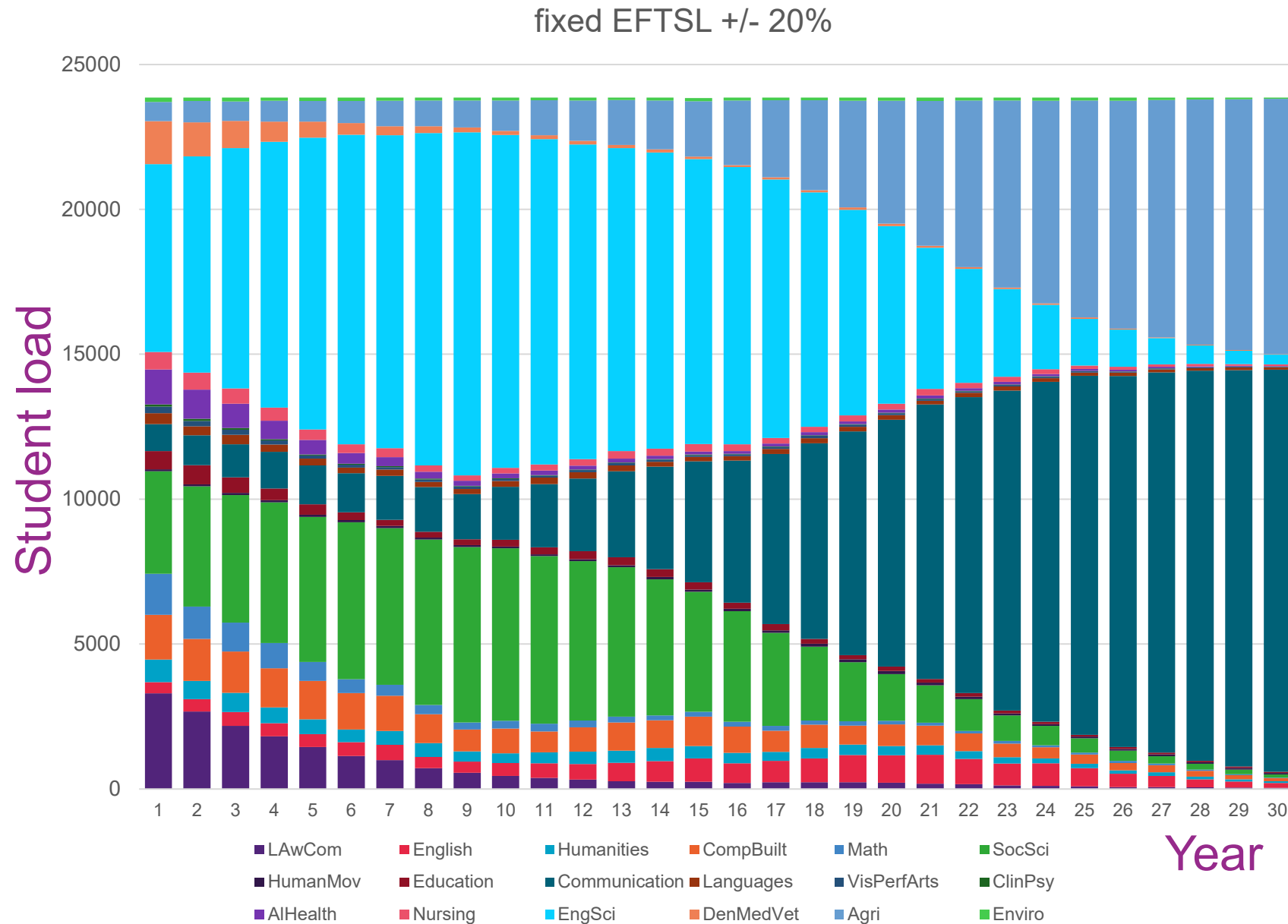
fixed EFTSL +/- 20%

Fixed EFTSL !

Two state solution (obvious)

Student load (y-axis)

Year (x-axis)

Legend: LAwCom, English, Humanities, CompBuilt, Math, SocSci, HumanMov, Education, Communication, Languages, VisPerfArts, ClinPsy, AlHealth, Nursing, EngSci, DenMedVet, Agri, Enviro

- Our international student market lacks diversity.

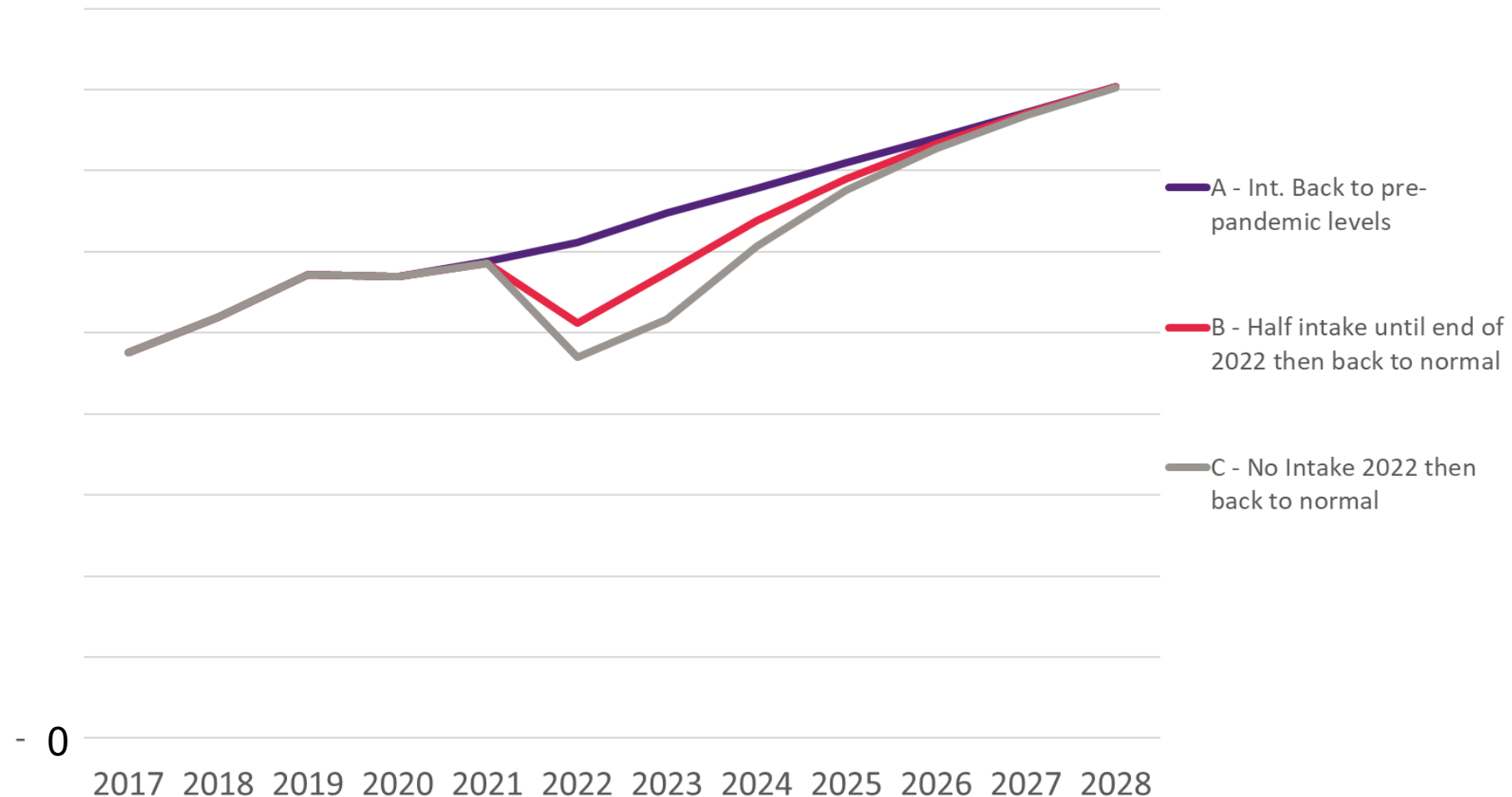- How do we reduce our reliance on a single source market?

When the budget was prepared for 2021 it was expected that borders would start to re-open this year and international students would return to pre-pandemic levels

Coursework Student Revenue Scenarios ($,000)

A - Back to pre-pandemic levels

2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028
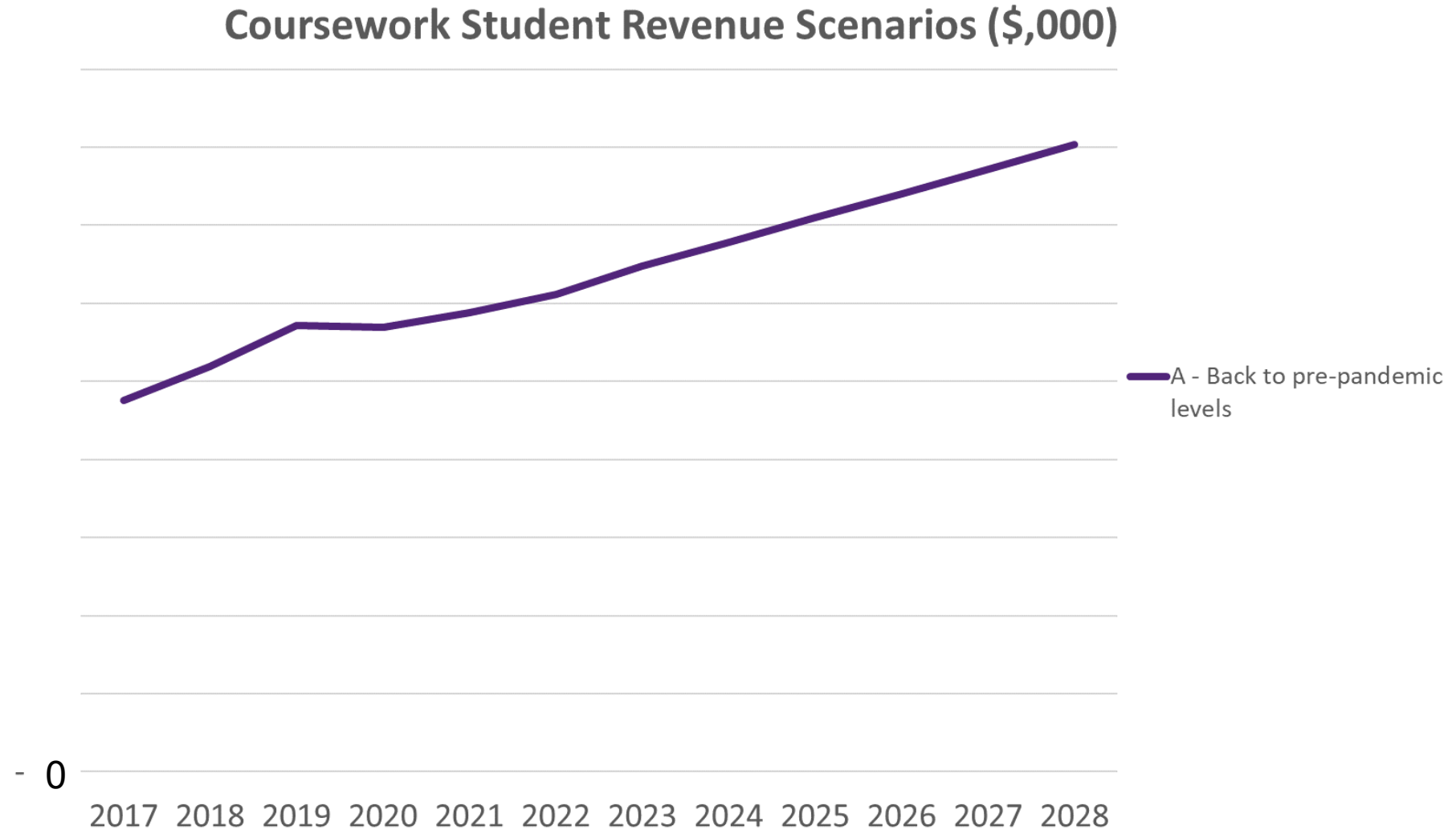
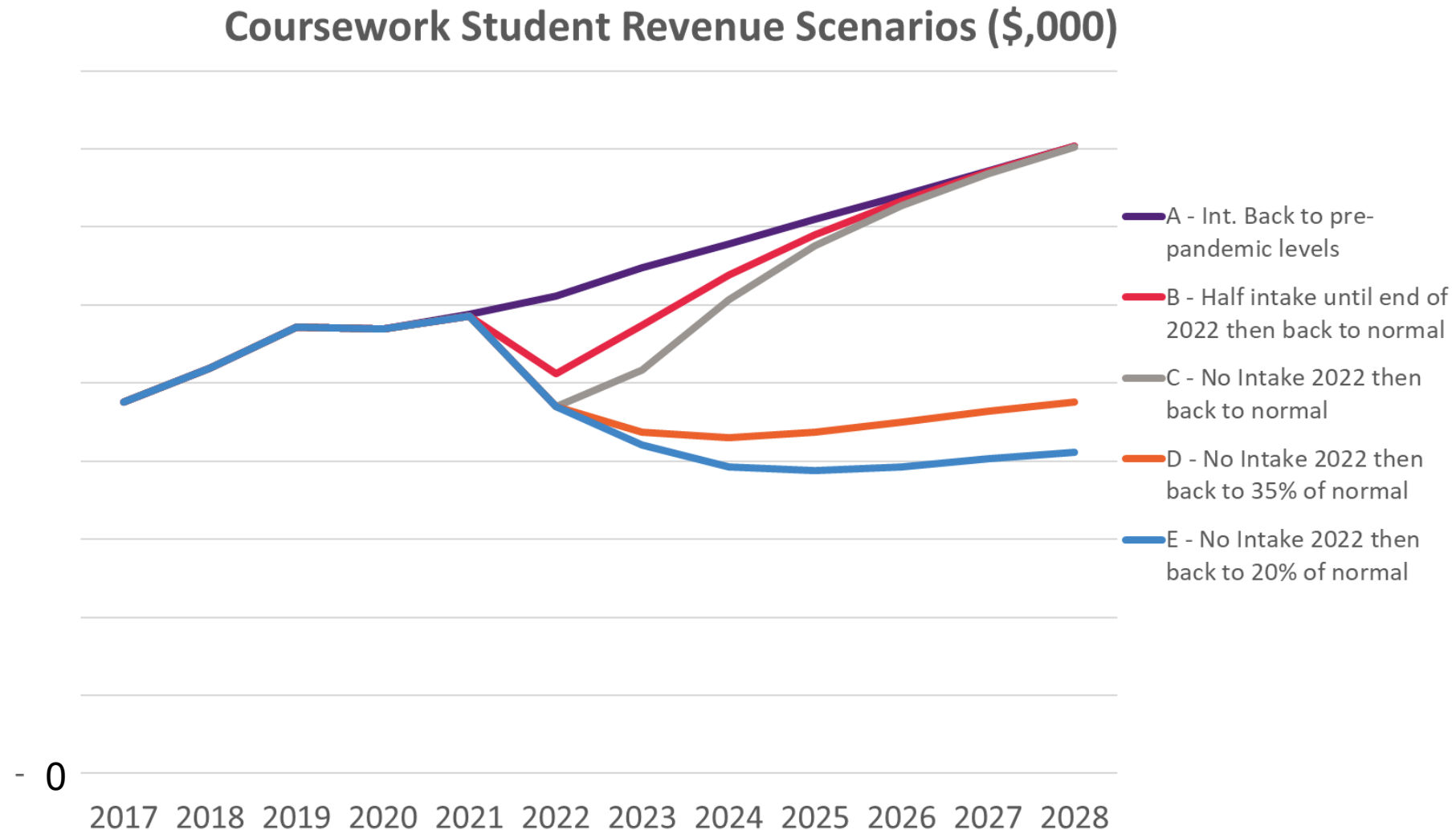Continued border closures through until end of 2022 give revenue reduction

Even if international student intakes returned to normal in 2023 it will take a few years to recover

Coursework Student Revenue Scenarios ($,000)

A - Int. Back to pre-pandemic levels

B - Half intake until end of 2022 then back to normal

C - No Intake 2022 then back to normal

0

2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028

A global economic downturn and/or geopolitical tensions could have a significant long term impact on the international student market.
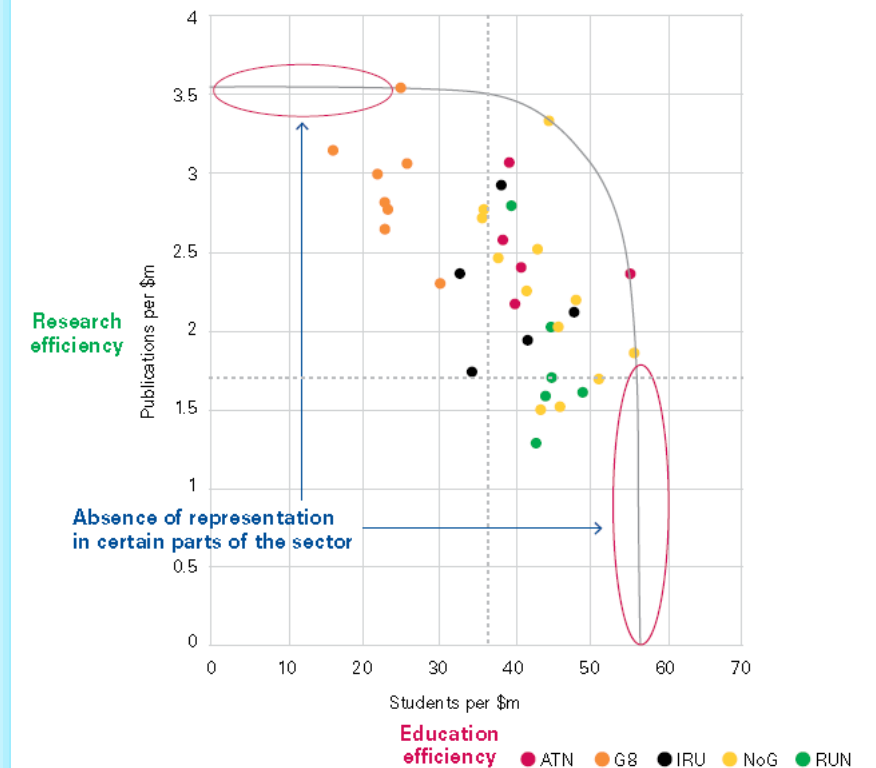
In the worst case scenario, what would unis0 look like if our coursework revenue was halved?

Coursework Student Revenue Scenarios ($,000)

A - Int. Back to pre-pandemic levels

B - Half intake until end of 2022 then back to normal

C - No Intake 2022 then back to normal

D - No Intake 2022 then back to 35% of normal

E - No Intake 2022 then back to 20% of normal

2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028

Are we well situated in a post-covid world?

- Staff profiles
  - Research
  - Teaching

  - 40/40/20

KPMG 2018

The Efficiency Expenditure Frontier 2016

Research efficiency

Absence of representation in certain parts of the sector

Publications per $m

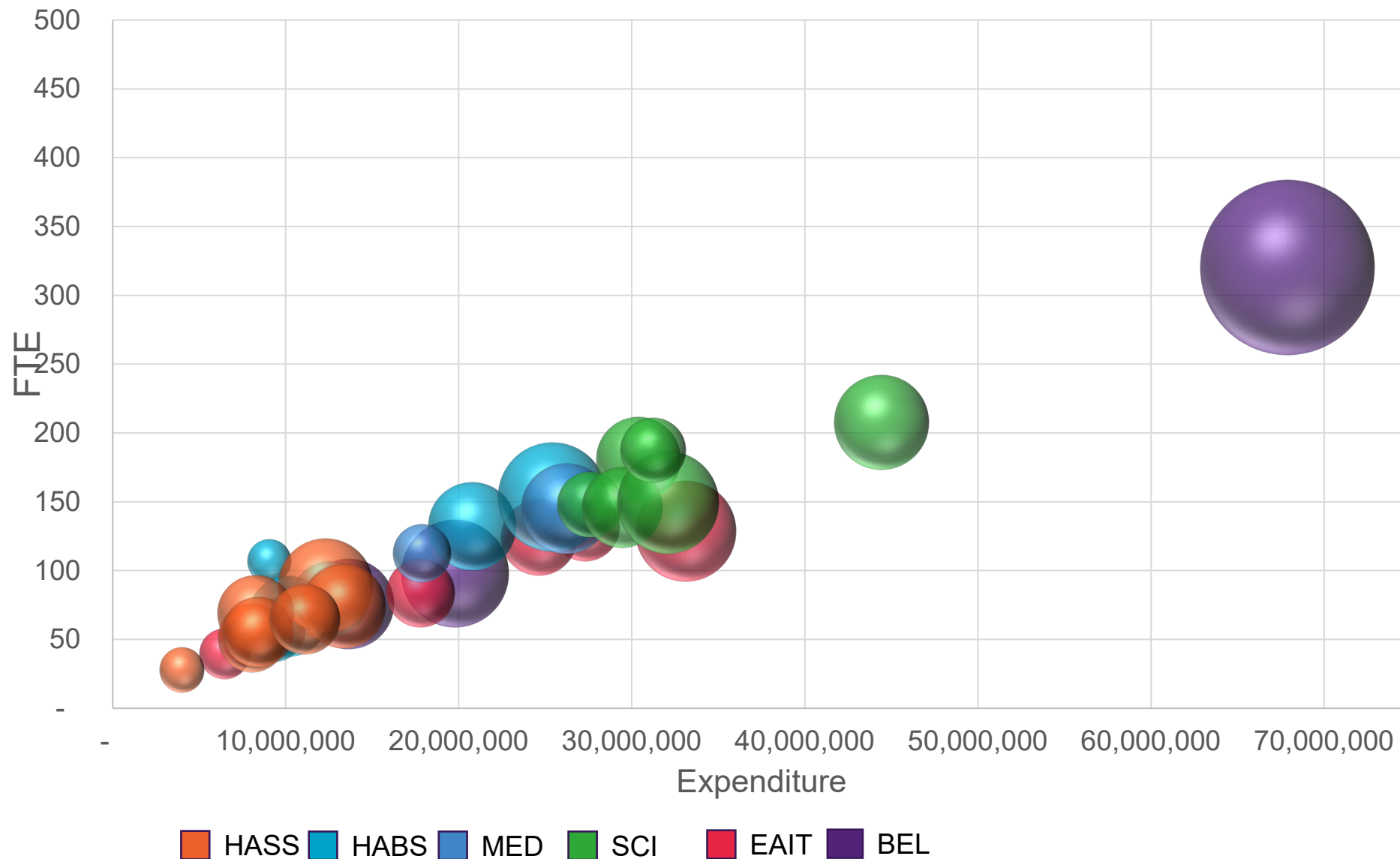Students per $m

Education efficiency ● ATN ● G8 ● IRU ● NoG ● RUN

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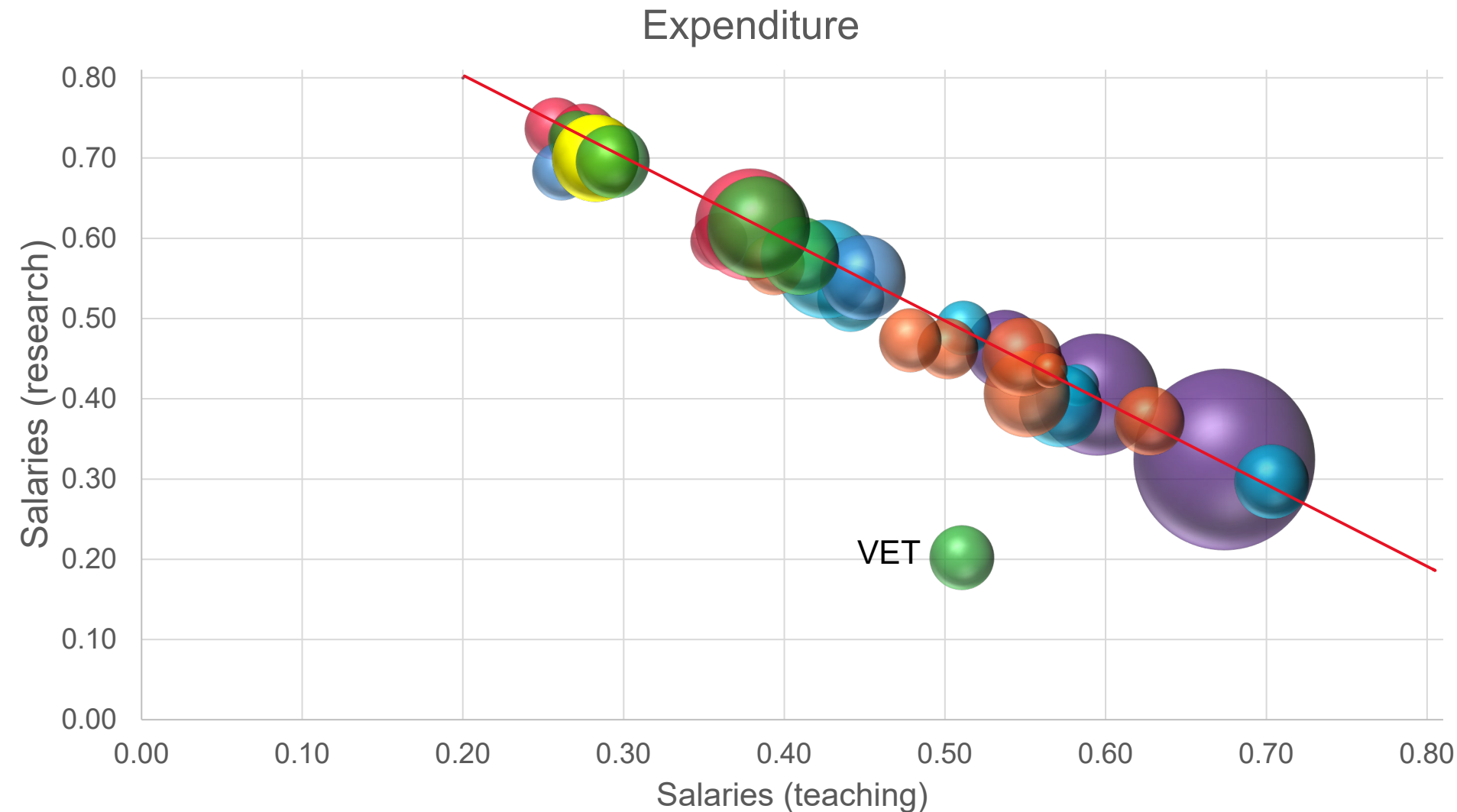
Staff -- Expenditure -- Load

2019 Faculties

Schools
2019

EFTSL

Legend: HASS HABS MED SCI EAIT BEL

Different modalities of teaching.

- F2F
- Online
- Hybrid
- Labs
- Content on demand

THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

Thank you

Aidan Byrne | Provost
provost@uq.edu.au