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Efficiency and VC pay: Exploring the value conundrum

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Why consider pay at all?



Top bosses will have earned more by midday on Wednesday than typical workers earn in the entire year, the High Pay Centre think tank has said.

Branding it "Fat Cat Wednesday", it says that is the time executives will pass the average UK salary of £28,200.

High Pay Centre director Stefan Stern said it was an important reminder of the unfair pay gap in the UK.



Source: Alamy

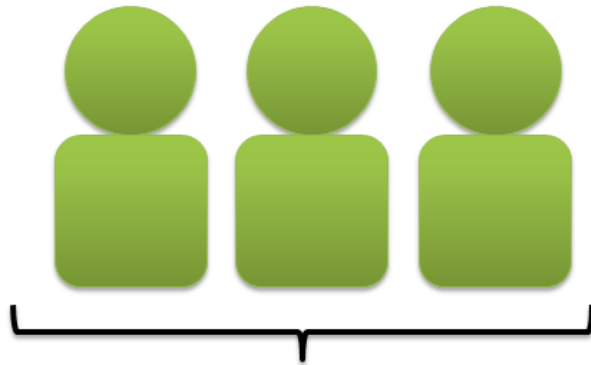
Cabin pressure: vice-chancellors spent an average of £8,560 on air travel

Vice-chancellors' pay has risen almost three times as fast as the salaries of rank-and-file university staff over the past five years, a new report on pay and perks enjoyed by academia's top brass says.

University leaders were paid an average salary of £272,432 in 2014-15, up by 3 per cent on the previous year, with the University of Oxford's then-vice-chancellor Andrew Hamilton receiving the highest overall pay package of £462,000, according to the University and College Union's latest round-up of university pay.

- **Marginal product theory**
 - The owner is the entrepreneur (Penrose 1995)
 - The executive as the hired person (Roberts 1956)
- **Governance**
 - Separation of ownership and control
 - Principal agent theory (Jensen & Meckling 1976; Holmstrom 1979; Fama 1980; Jensen and Murphy 1990)
- **Structural theory**
 - Pay related to levels of hierarchy and size (Simon 1957)
- **Tournament theory**
 - VC pay incentivises workers at all levels (Lazear & Rosen 1981; Rosen 1986)
- **Human capital theory**
 - Pay for your skills (Liang & Weir 1999)
 - Tournament (Lazear & Rosen 1981; Ehrenberg & Bognanno 1990)

Grounded in agency theory



The principals
delegate authority to
manage firms to
agents

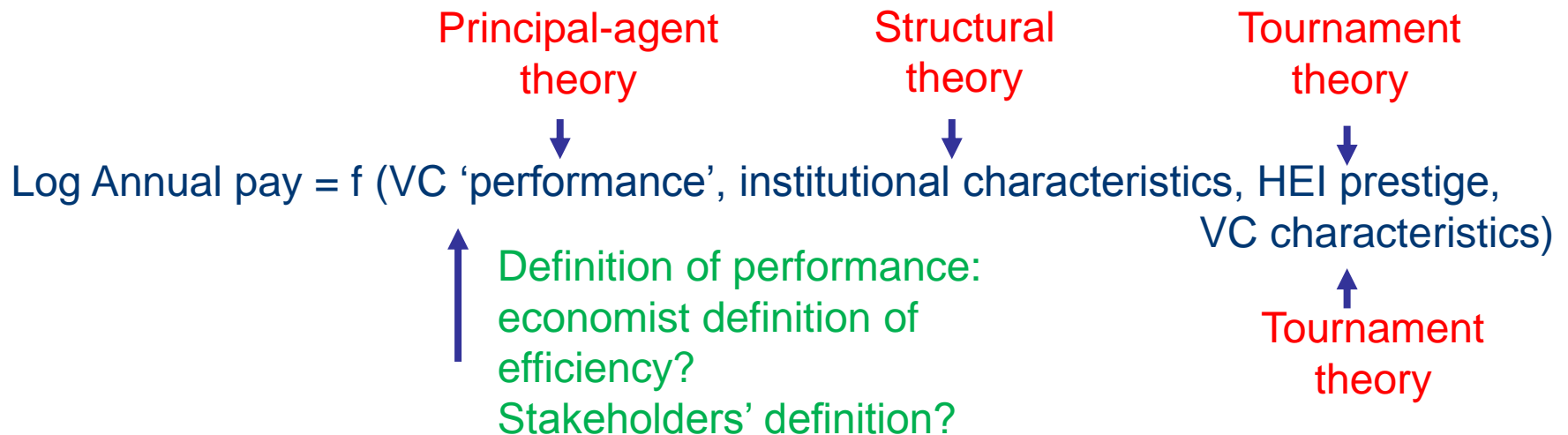


Here lies the conundrum...

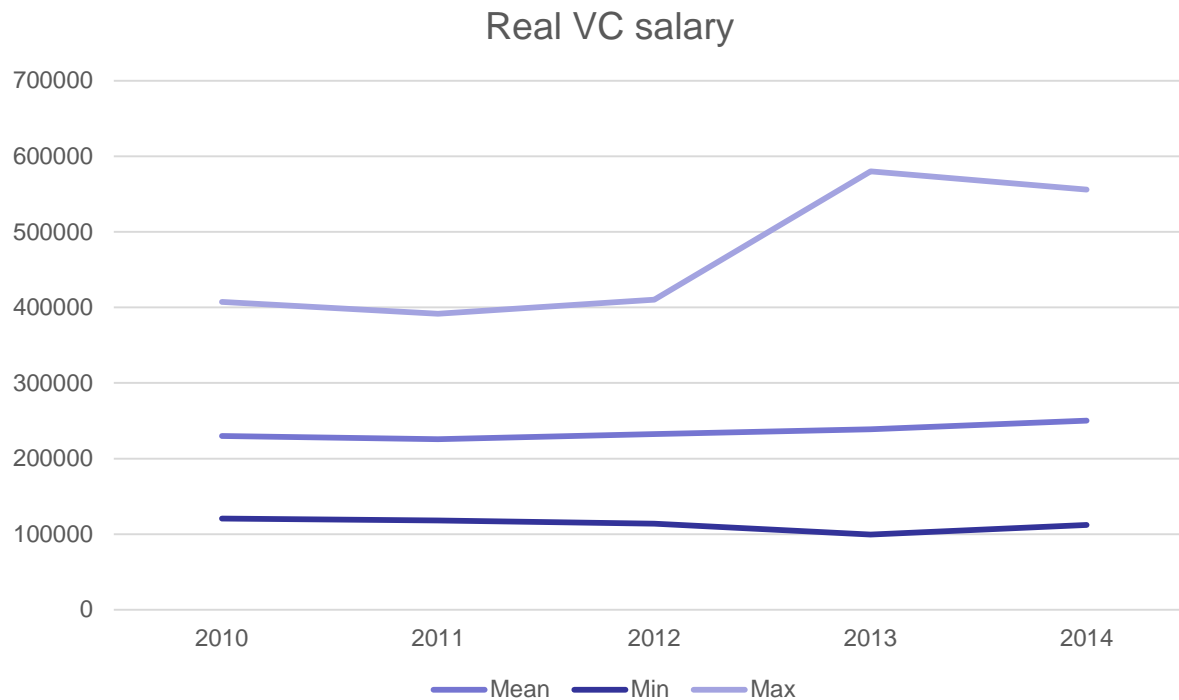
Who really are the
principals?

What do they really
want the agent to
deliver?

- UK higher education institutions (HEIs) over period 2010/11-2014/15
- Salary for 154 to 158 VCs each year
- *Times Higher VC Pay Survey*
- Random-effects model:



- VC salary converted to 2014 real values using standard RPI



N = 778

**N varies by year
from 154 to 159**

Mean = £235342

Min = £99544

Max = 580168

Explanatory variables

Agency theory and performance

‘...it is difficult to define what exactly constitutes ‘performance’ in higher education. For example, it may be income generation, research/teaching quality, student enrolment, achieving institution goals or combinations of all of these. This issue becomes more acute given that universities are multi-product organisations...’

‘VCs face multiple principals, perform multiple tasks, and work as part of a team seeking to meet institutional goals and objectives. However, it is not unreasonable to suggest that good financial management and furthering the institution’s mission should be rewarded.’

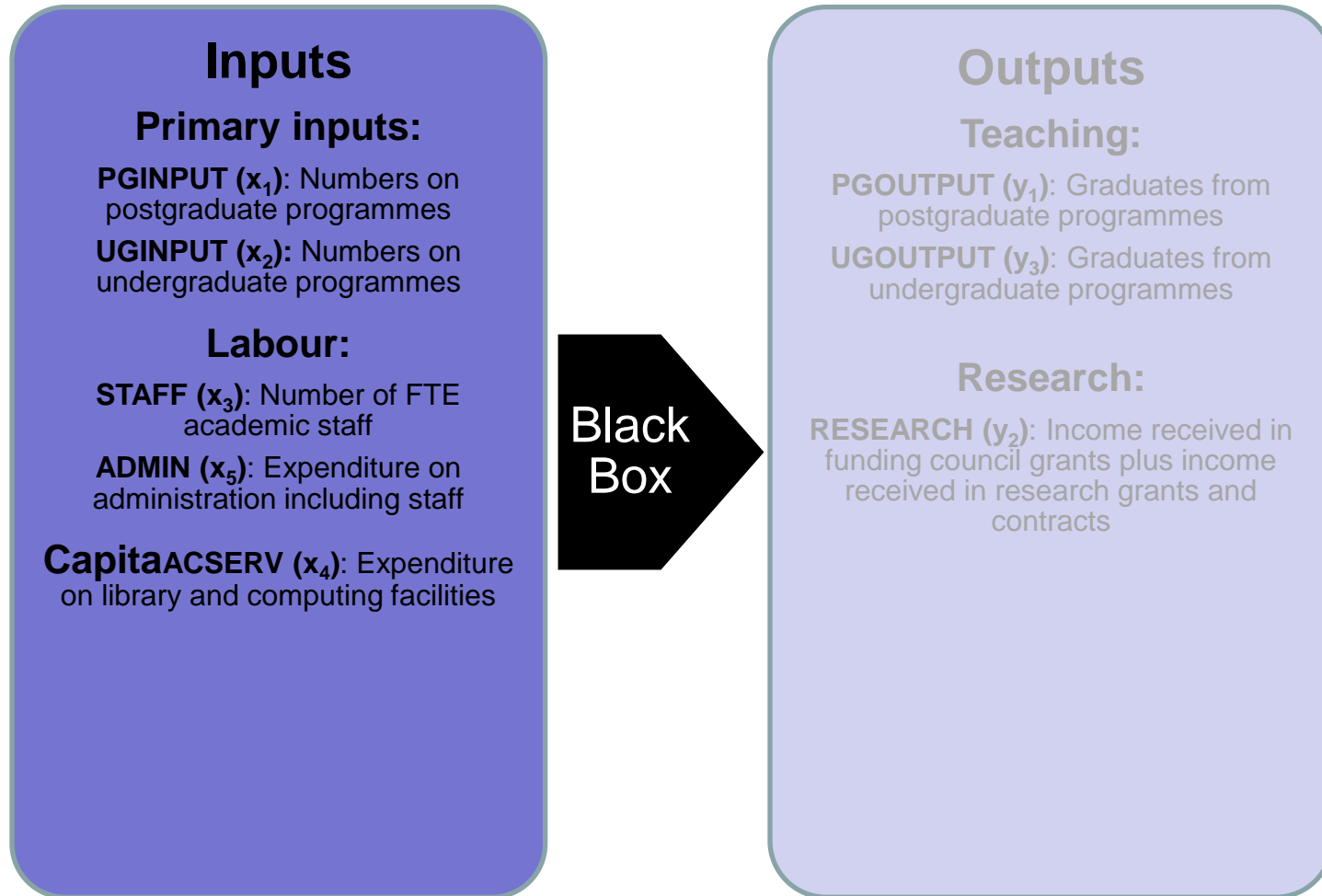
(Bachan & Reilly 2017)

Explanatory variables

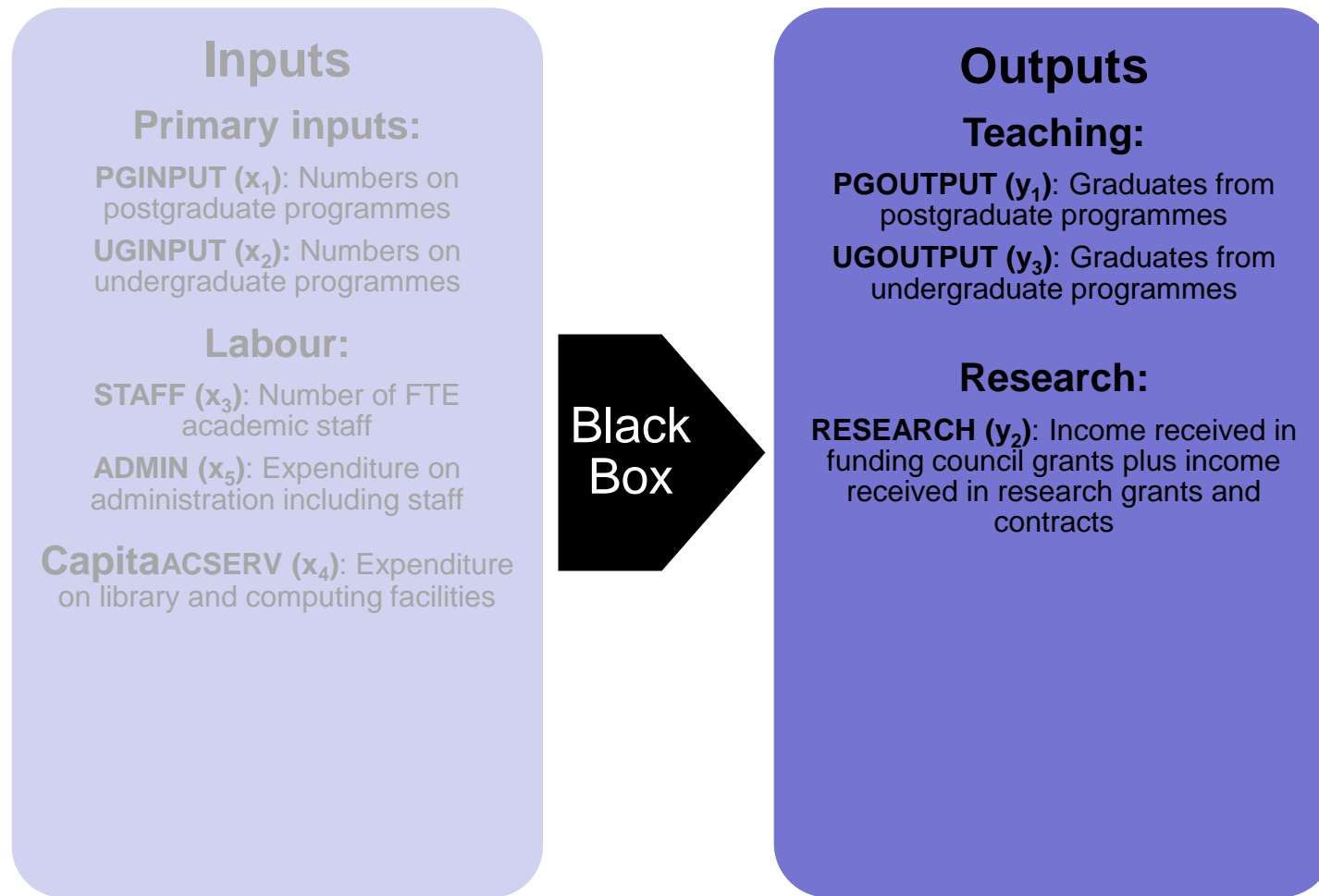
Who are the agents?

- Government
- Value for money – 'efficiency'
- Teaching performance; research performance
- Students (and their parents)
- Teaching performance; NSS
- Governing body
- Financial stability
- Mission

Explanatory variables: performance DEA managerial efficiency (VRSEFF)



Explanatory variables: performance DEA managerial efficiency (VRSEFF)



Explanatory variables: performance Financial security and media rankings

- DEA VRS efficiency (VRSEFF)
- Financial security index from HESA (FSI)
- *Complete University Guide* overall score (OVERALL)

	n	mean	min	max
VRSEFF	701	0.84	0.45	1.00
FSI	780	327.05	30.00	627.00
OVERALL	552	584.75	274.00	1000.00

Explanatory variables: performance Financial security and media rankings

Components of the *Complete University Guide* rankings:
Entry scores (ENTRY); NSS score (NSS); Research quality (RQ); Graduate prospects (GRADPROSP); Student staff ratio (SSR); Academic services spend (ASS); Facilities spend (FS); Good honours (GOODHONS); Degree completion (COMP)

ENTRY	552	323.49	179.00	593.00
NSS	552	3.86	3.42	4.22
RQ	552	2.57	0.48	6.62
GRADPROSP	552	65.75	41.40	90.60
SSR	552	17.57	8.90	36.70
ASS	552	1005.08	369.01	3263.46
FS	552	357.54	62.56	992.78
GOODHONS	552	62.41	33.90	91.80
COMP	552	84.24	56.00	99.00

Explanatory variables: Human capital theory

- VC age (AGE)
- VC gender (MALE)

	n	mean	min	max
AGE	705	58.68	45	72

- 643 (82%) male, 139 (18%) female observations

Explanatory variables: Structural theory

- Merger activity reflected by a dummy variable to denote merger (MERGER)
- Size as reflected by total number of UG and PG students, divided by 1000, (SIZE) and its square (SIZESQ)
- 220 (28%) pre-1992, 575 (72%) post-1992 observations
- 4 (0.5%) merger, 791 (99.5%) non-merger observations

	n	mean	min	max
SIZE	779	12.001	169	79.064

Explanatory variables: Tournament theory

- Prestige reflected by pre-1992 or post-1992 (PRE1992)
- 220 (28%) pre-1992, 575 (72%) post-1992 observations

Results

Performance	1	2
VRSEFFt-1	0.22*	0.17*
FSI	0.0026	0.0035
OVERALLt-1	0.40*	
ENTRYt-1		0.19*
NSSt-1		0.54*
RQt-1		0.02
GRADPROSPt-1		-0.15
SSRt-1		-0.05
ASSt-1		0.16*
FSIt-1		0.02
GOODHONSt-1		0.16*
COMPTt-1		-0.14

Results

Performance	1	2	3	4
VRSEFFt-1	0.22*	0.17*	0.13*	0.11*
FSI	0.0026	0.0035	0.01	0.01
OVERALLt-1	0.40*		0.36*	
ENTRYt-1		0.19*		0.21*
NSSt-1		0.54*		0.45*
RQt-1		0.02		0.04*
GRADPROSPt-1		-0.15		-0.13
SSRt-1		-0.05		-0.04
ASSt-1		0.16*		0.13*
FSIt-1		0.02		0.02
GOODHONSt-1		0.16*		0.11
COMPTt-1		-0.14		-0.07

3&4: variables relating to VC characteristics included

Results

Performance	1	2	3	4	5	6
VRSEFFt-1	0.22*	0.17*	0.13*	0.11*	0.14*	0.10*
FSI	0.0026	0.0035	0.01	0.01	0.00	0.01
OVERALLt-1	0.40*		0.36*		0.29*	
ENTRYt-1		0.19*		0.21*		0.24*
NSSt-1		0.54*		0.45*		0.41
RQt-1		0.02		0.04*		0.02
GRADPROSPt-1		-0.15		-0.13		-0.19
SSRt-1		-0.05		-0.04		-0.02
ASSt-1		0.16*		0.13*		0.09*
FSIt-1		0.02		0.02		0.01
GOODHONSt-1		0.16*		0.11		0.08
COMPTt-1		-0.14		-0.07		-0.12

3&4: variables relating to VC characteristics included

5&6: as 3&4 plus variables relating to structure included

Results

Performance	1	2	3	4	5	6	7	8
VRSEFFt-1	0.22*	0.17*	0.13*	0.11*	0.14*	0.10*	0.05	0.05
FSI	0.0026	0.0035	0.01	0.01	0.00	0.01	0.01	0.01
OVERALLt-1	0.40*		0.36*		0.29*		0.24*	
ENTRYt-1		0.19*		0.21*		0.24*		0.22*
NSSt-1		0.54*		0.45*		0.41		0.11
RQt-1		0.02		0.04*		0.02		0.03
GRADPROSPt-1		-0.15		-0.13		-0.19		-0.13
SSRt-1		-0.05		-0.04		-0.02		-0.03
ASSt-1		0.16*		0.13*		0.09*		0.07*
FSIt-1		0.02		0.02		0.01		0.01
GOODHONSt-1		0.16*		0.11		0.08		0.07
COMPTt-1		-0.14		-0.07		-0.12		-0.13

3&4: variables relating to VC characteristics included

5&6: as 3&4 plus variables relating to structure included

7&8: as 5&6 plus time dummies included

Results

VC	1	2	3	4	5	6
Characteristics						
AGE	0.57*	0.53*	0.49*	0.44*	0.35*	0.35*
MALE	0.02	0.02	-0.02	-0.02	-0.02	-0.03
Structure						
MERGER			0.06*	0.04*	0.05*	0.03
PRE1992			0.05*	0.04	0.07*	0.05
SIZE			0.03*	0.03*	0.04*	0.04*
SIZESQ			-0.0008*	-0.0008*	-0.0008*	-0.0008*

1,3&5: overall university score used to measure media rankings performance
2,4&6: separate components used to measure media rankings performance
5&6: time dummies included

- **Agency theory:**
 - Output performance (as measure by the *Complete University Guide* overall score) is consistently a significant driver of VC pay
 - Entry score, NSS results and Academic spending are important components of the overall score driving pay
 - Efficiency is significant **except** when time dummies are included in the model
 - Financial security index is unrelated to VC pay
- **Human capital theory:**
 - Age (experience) drives pay; gender does not
- **Structural theory:**
 - Size of institution drives pay; effect of merger is significant **except** when time dummies are included