1 Education

- I do the grouping as follows:
  - Low education: no qualification, GCSE D-G, and GCSE A-C.
  - Medium education: GCSE A*.
  - High education: Bachelor +.
- The Welch index is computed as:

$$G_{kl} = \frac{\sum_o (q_{ko} - \bar{q}_o)(q_{lo} - \bar{q}_c)/\bar{q}_o}{\sqrt{(\sum_o (q_{ko} - \bar{q}_o)^2/\bar{q}_o)(\sum_o (q_{lo} - \bar{q}_o)^2/\bar{q}_o)}}$$

where k, l denote education levels, o occupation, q_{ko} denotes the share of k-people employed in occupation o, and $\bar{q}_o$ is the share of population employed in job o.

Table 1: Welch index of the occupational distribution of employment

	None	**GCSE D-G**	**GCSE A-C**	**GCE A***	**Bachelor's +**
None	1.000				
GCSE D-G	0.736	1.000			
GCSE A-C	0.356	0.462	1.000		
GCE A*	-0.106	-0.031	0.215	1.000	
Bachelor's +	-0.659	-0.723	-0.767	-0.491	1.000

Source: UK LFS 1997-2017

Table 2: Correlation of occupational distribution of employment by education level

	None	**GCSE D-G**	**GCSE A-C**	**GCE A***	**Bachelor's +**
None	1.000				
GCSE D-G	0.862	1.000			
GCSE A-C	0.689	0.801	1.000		
GCE A*	0.481	0.600	0.766	1.000	
Bachelor's +	0.078	0.168	0.300	0.334	1.000

Source: UK LFS 1997-2017

Table 3: Population by education level

Education level	**1997**	**2001**	**2006**	**2012**	**2017**
Low	0.49	0.46	0.42	0.35	0.31
Medium	0.25	0.25	0.23	0.23	0.22
High	0.26	0.29	0.35	0.43	0.46
Total population (000)	22,850	24,202	25,186	25,474	27,186

Note: uses data from UK LFS for the 4th quarter of each year. Table generated on 24 Jan 2020 at 11:40:22.

2 Boundary jobs

Let $s_j(o), j \in \{H, M, L\}$ denote the share o-workers with education level j. Denote as $p_i(o)$ the i-th largest element of $\{s_H(o), s_M(o), s_L(o)\}$.

- **Definition 1:** $o \in B_1$ iff (suggested by Costas):

$$p_1(o) \leq R$$

- **Definition 2:** $o \in B_2$ iff:

$$\frac{p_1(o)}{p_1(o) + p_2(o)} \leq R$$

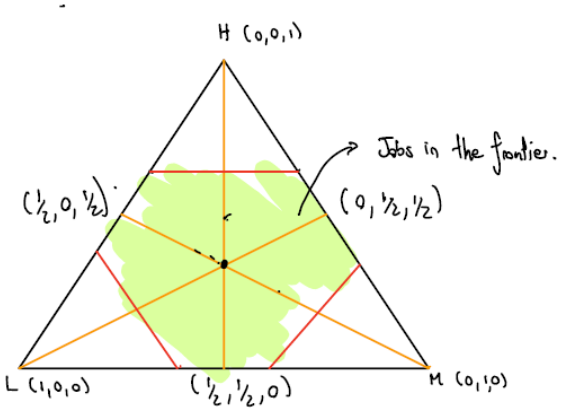
- **Definition 3**: $o \in B_3$ iff (similar to 2, but generates border "arms" of constant width):

$$p_1(o) - p_2(o) \leq R - 0.5$$

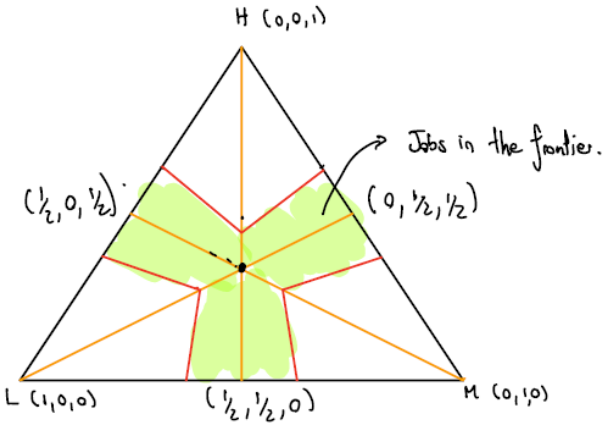
- For any R, $B_3 \subset B_2 \subset B_1$

Figure 1: Border under alternative definitions

(a) Definition 1:



(b) Definition 2:



(c) Definition 3:

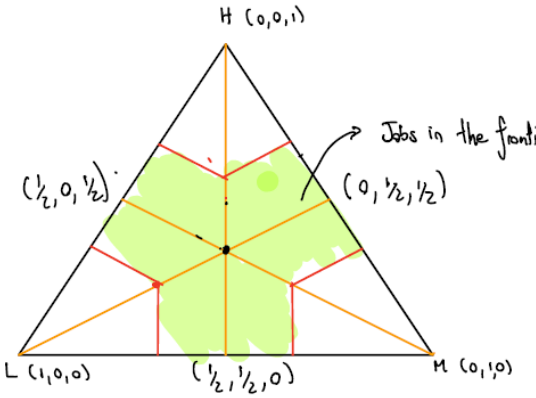


Figure 2: Job classification under different boundary definitions ($R = 60\%$)

(a) Definition 1

(b) Definition 2

(c) Definition 3

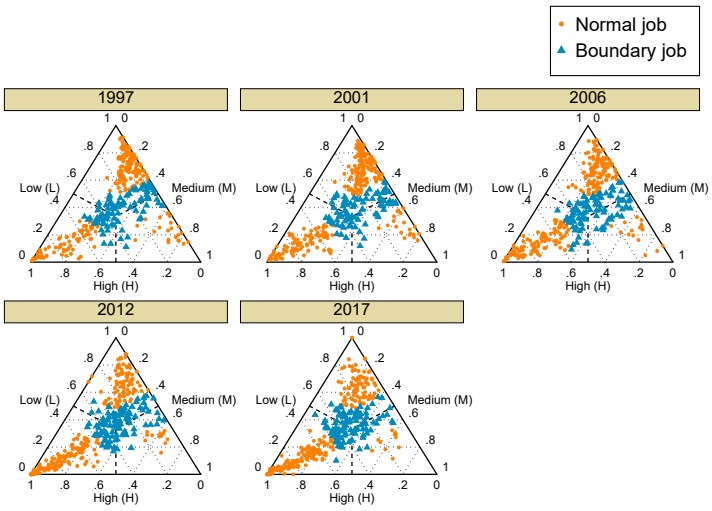


Table 4: Definition 2: boundary job examples 2006

lowMid	lowHigh	midHigh
5323 painters and decorators	1151 financial institution managers	3531 estimators, valuers and assess
3313 fire serv off (leading off & below)	4111 civil service executive officers	3115 quality assurance technicians
5243 lines repairers and cable jointers	1225 leisure and sports managers	1121 prod. works & maintenance r
5319 construction trades n.e.c.	3541 buyers and purchasing officers	3218 medical and dental technician
5221 metal mach setter & setter-operator	1183 healthcare practice managers	2127 production and process engin
5422 printers	6113 dental nurses	3511 air traffic controllers
3533 insurance underwriters	4137 market research interviewers	3122 draughtspersons
9112 forestry workers	5496 floral arrangers, florists	1122 managers in construction
5215 welding trades	3131 it operations technicians	3532 brokers
5234 vehicle spray painters	7125 merchandisers and window dressers	1142 customer care managers