

Job Creation and Destruction in the EU Agriculture

Liesbeth Dries*, Pavel Ciaian^{|,°} & d'Artis Kancs[|]

* Wageningen University

[|] European Commission (DG JRC), EERI, LICOS (University of Leuven)

[°] Slovak Agricultural University

Introduction

- EU post-war:
 - Dramatic agricultural labour adjustments;
 - Continuous net labour outflow.
- However, the aggregate may hide important structural adjustments
- This paper will disaggregate the numbers to identify the extent of job creation and destruction in EU agriculture

Introduction

- Findings from studies in other sectors:
 - Job reallocation is inversely correlated to *capital intensity*;
 - *Smaller and younger* establishments create and destroy more jobs than older / larger;
 - At the individual level, *idiosyncratic shocks* are the main cause of job reallocation.

Outline

- Theoretical framework
- Methodology
- Data
- Results
- Conclusions

Theoretical framework

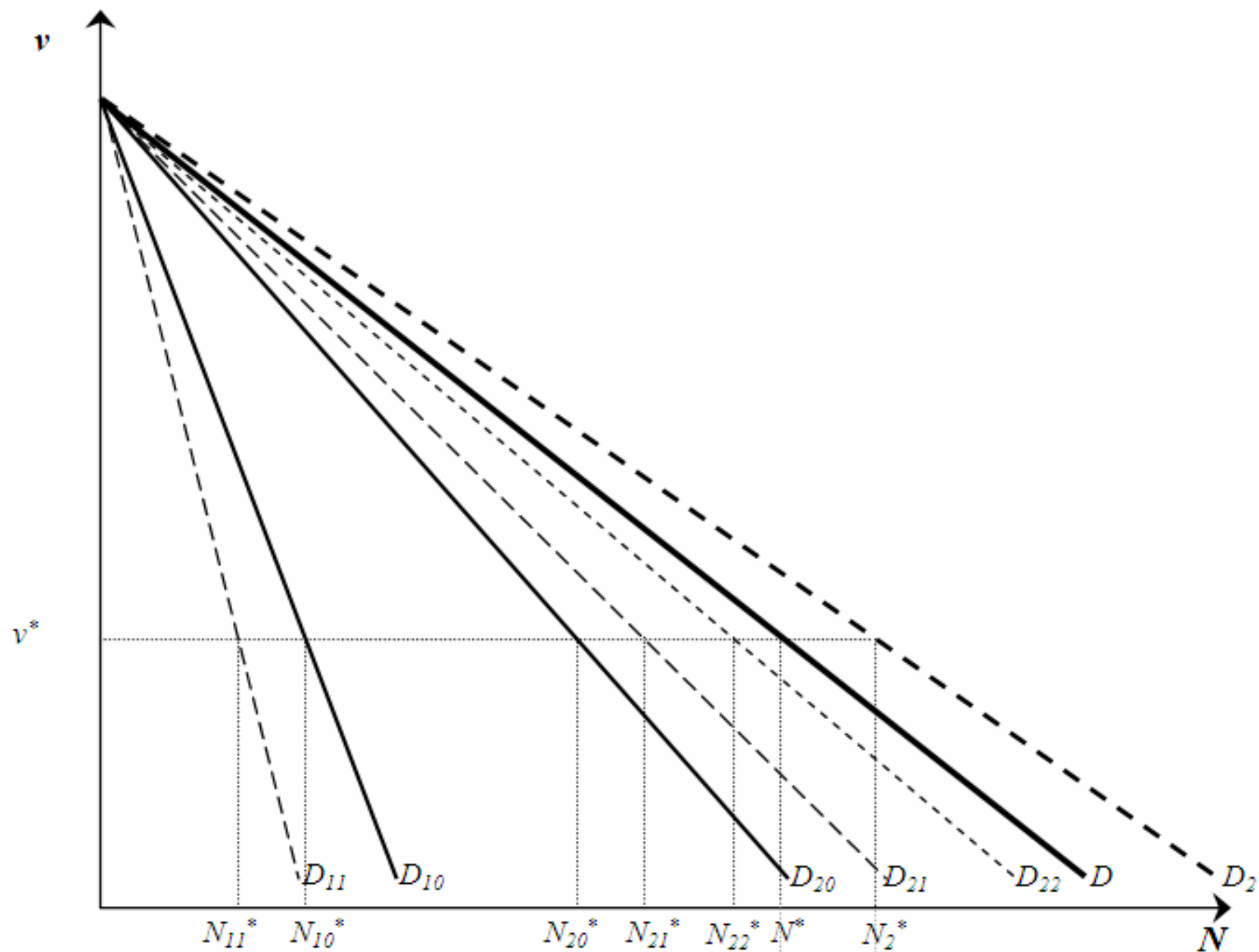
- The main drivers of job reallocation are:
 - Firms' structural differences;
 - Idiosyncratic shocks.

- Labour demand (D):

$$D_i = D(p, v, r, s, T_i, H_i)$$

- Vector of output prices (p)
- Wage rate (v)
- Vector of input prices (r)
- Subsidies (s)
- Technology (T)
- Farm and household characteristics (H)

Labour market



Methodology

- Farm growth (g):
 - N = employment
 - x = size

$$g_{it} = \frac{N_{it} - N_{it-1}}{x_{it}}$$

- Job creation and job destruction rate:

$$JCR_{st} = \frac{\sum_{i \in s, g_{it} > 0} N_{it} - N_{it-1}}{\sum_{i \in s} x_{it}}$$

$$JDR_{st} = \frac{\sum_{i \in s, g_{it} < 0} |N_{it} - N_{it-1}|}{\sum_{i \in s} x_{it}}$$

Methodology

- Remark: sample weights
 - Equal the reciprocal of the sampling probability;
 - Take account of farm exit and farm entry in the estimation of labour reallocation.

Data

- FADN:
 - Covers approx. 90% EU UAA;
 - Accounts for approx. 90% Agric. Prod.;
 - Representativeness based on 3 dimensions: member state; size class; sub-sector.
- EU-12, 1989 - 2006
- Sample weights were only updated in 2 or 3 year intervals

Results

Average annual job creation and destruction, EU-12

	JCR	JDR	NET
1990-1993	0,087	-0,117	-0,030
1993-1995	0,145	-0,181	-0,036
1995-1997	0,145	-0,138	0,007
1997-2000	0,091	-0,121	-0,031
2000-2003	0,084	-0,166	-0,082
2003-2005	0,146	-0,139	0,007

Family and hired job creation and destruction, EU-12

Family Labour	JCR	JDR	NET
1990-1993	0,088	-0,119	-0,031
1993-1995	0,141	-0,193	-0,052
1995-1997	0,150	-0,139	0,011
1997-2000	0,091	-0,128	-0,037
2000-2003	0,087	-0,173	-0,086
2003-2005	0,146	-0,143	0,003

Paid Labour	JCR	JDR	NET
1990-1993	0,108	-0,132	-0,023
1993-1995	0,211	-0,156	0,055
1995-1997	0,158	-0,173	-0,014
1997-2000	0,116	-0,120	-0,004
2000-2003	0,096	-0,163	-0,067
2003-2005	0,172	-0,151	0,021

Job creation and destruction by specialization, EU-12

	JCR	JDR	NET
Fieldcrops	0,099	-0,146	-0,047
Horticulture	0,127	-0,120	0,007
Spec. Vineyards, olives, fruit	0,130	-0,166	-0,036
Spec. Cattle and milk	0,094	-0,108	-0,014
Spec. Granivores	0,118	-0,112	0,007
Mixed crops	0,128	-0,186	-0,057
Mixed livestock	0,117	-0,121	-0,005
Mixed crops and livestock	0,115	-0,122	-0,006

Job creation and destruction by farm size, EU-12

	JCR	JDR	NET
< 2 ESU	0,104	-0,191	-0,087
2 - < 4 ESU	0,088	-0,305	-0,217
4 - < 6 ESU	0,173	-0,172	0,001
6 - < 8 ESU	0,174	-0,141	0,032
8 - < 12 ESU	0,144	-0,126	0,018
12 - < 16 ESU	0,129	-0,136	-0,007
16 - < 40 ESU	0,095	-0,102	-0,007
40 - < 100 ESU	0,089	-0,086	0,003
100 - < 250 ESU	0,092	-0,082	0,010
>= 250 ESU	0,074	-0,102	-0,029

Job creation and destruction by country, EU-12

	JCR	JDR	NET
Belgium	0,047	-0,068	-0,021
Denmark	0,056	-0,082	-0,026
Germany	0,080	-0,101	-0,021
Greece	0,108	-0,147	-0,039
Spain	0,172	-0,144	0,027
France	0,073	-0,090	-0,017
Ireland	0,054	-0,066	-0,012
Italy	0,132	-0,203	-0,071
Luxemburg	0,060	-0,086	-0,026
The Netherlands	0,058	-0,079	-0,021
Portugal	0,131	-0,196	-0,065
UK	0,067	-0,110	-0,043

Job creation and destruction by country and farm size, EU-12

	JCR	JDR	NET	Farm size*
Portugal	0,131	-0,196	-0,065	8
Greece	0,108	-0,147	-0,039	9
Spain	0,172	-0,144	0,027	16
Italy	0,132	-0,203	-0,071	18
Ireland	0,054	-0,066	-0,012	21
Luxemburg	0,060	-0,086	-0,026	52
France	0,073	-0,090	-0,017	58
Germany	0,080	-0,101	-0,021	59
Belgium	0,047	-0,068	-0,021	72
Denmark	0,056	-0,082	-0,026	72
UK	0,067	-0,110	-0,043	83
The Netherlands	0,058	-0,079	-0,021	111

* average ESU per farm

Conclusions

- Job creation and destruction rates in EU agriculture in line with findings from other sectors (JDR slightly higher)
- Important differences between member states – related to structural differences, i.e. JCR and JDR higher if small farm size:
 - Idiosyncratic shocks;
 - Growing trend in farm size;
 - Flexible labour contracts.