
Hochschule Niederrhein
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NIERS
Niederrhein Institut für
Regional- und Strukturforschung
Niederrhein Institute for
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Offshoring in Germany

Special focus on SMEs

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Offshoring in Germany

1. Introduction
2. Literature review
3. Empirical Results
4. Conclusion

1. Introduction- Motivation

Some current media topics deal with:

- Bayer‘s plans to offshore its accounting to Manila
- RWE’s chosen destination Slovakia
- EON’s plans to move its accounting position to Cluj, Romania

→ Offshoring is no new phenomenon
→ It still arises tension and fears in the media and the population
→ Are these fears justified or is offshoring just a new kind of trade as many macroeconomists suppose?
→ Still very ambiguous results concerning the outcomes of offshoring

1. Introduction- Special Role of SMEs in Germany

- **SMEs play an important role in Germany**
- **Account for 60 percent of all employees**
- **Are responsible for 38 percent of the volume of sales in Germany**
- **Employ most of the “Auszubildende”(Apprentice) in Germany**

→ But Offshoring of SMEs has not been analyzed yet either in popular literature (media) nor in academic ones (Di Gergoria et al. (2009), Musteen and Thomas 2009)

1. Introduction

No consistent definition for Offshore outsourcing

Chosen definition here:

- **Offshoring outsourcing:** Relocation of Production or Services to a foreign external company
- **Small and medium sized companies have less than 250 employees**

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2. Offshoring no new phenomenon- Production Offshoring

- Production offshoring since decades
- **Historical Boost (end of eighties/ beginning nineties) :**
  - The fall of the Soviet Union
  - The change in China from a communistic to a capitalistic system
  - Trade liberalization in India

→ Severe supply shock for the world labor market

→ 1,3 billion people who were potentially looking for work were added to the world labor market (Freemann 2008)

2. Service offshoring

Service Offshoring

- Since the end of the last millennium also service offshoring become common

→ The spread of the Internet and the fallen ICT cost strengthen this development

→ Following Blinder every impersonal job (no direct contact necessary) could be relocated, independent from the skill level

2. Reasons for offshoring

General reasons

- Reduction of labor costs
- Access to new markets (avoid protectionism)
- Gain comparative advantages

Special Reasons for SMEs

- Find skilled employees: Skill Shortage Dibbern & Heinzl (2009)
- Increase flexibility Liesch & Knight (1999)
- Focus on core competences to increase productivity

2. Employment Effects in the Source Country- Empirical Research

Author	Countries	Study Time	Employment effects
Crisculuo & Garicano (2011)	GB	2001-2007	Very positive for Professions who need a licence, weak positive for professions without licence
Geishecker (2008)	D	1996-2002	Employment duration decreases; economic instability rises
Winkler (2011)	D	1995-2004	Service offhoring lowers the demand for high skilled
Slaugther (2004)	USA	1960-1991	Blue collar workers labor demand elasticity
Slaugther (2009)	USA	1991-2001	For one created Job in foreign countries, 2,3 are created at home
Crino (2010)	USA	1991-2001	Offshoring reduces the wages after reemployment
Antonietti & Antonioli (2011)	Italy	1995-2003	Negative for low skilled
Hijzen et al. (2010)	USA	1991-2001	Offshoring reduces the wages after reemployment, increase with duration of unemployment.

- **Very heterogeneous results**
- **Reasonably high-skilled can profit in the home country if back office activities are offshored**

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3. Empirical Analysis

Source:

- IAB- Betriebspanel 2008 (Offshoring decision was tested only in 2008)
- Institut für Arbeit und Beschäfigung, Nürnberg
- Representative survey in Germany, about 16.000 firms are interviewed every year
- 186 of the surveyed SMEs offshored products/services in 2007
- 99 of the surveyed larger Companies offshored products/services in 2007

Empirical Analysis

Offshoring Firms:

- *69,8% are classified as industry firms*
- *13,7 % are classified as service firms (excluding banking sector)*

➢ *Could be expected. Material offshoring is still dominating.*

➢ *But service offshoring has higher growth rates*

Top Three Offshoring Industries:

1. *Mechanical Engineering 18,6%*
2. *Electrical Engineering 10,2%*
3. *Steel 8.07%*

Empirical Analysis- What determinates Offshoring of SMEs

- **First Step: test determinates for Offshoring with the help of Probit Regressions**
- **Covariates were chosen with theoretical relations or empirical ones found in other studies**
- **Either SMEs or larger concerns were excluded for the first two regressions**

3. Empirical Analysis- What determinates Offshoring of SMEs

Probit regression — Number of obs = 2549
LR chi2(9) = 146.00
Prob > chi2 = 0.0000
Log likelihood = -302.99544 — Pseudo R2 = 0.1942

offshoring	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
tarifvertrag	-.2956503	.1166151	-2.54	0.011	-.5242118	-.0670888
auslandsum~z	.0096666	.0020831	4.64	0.000	.0055837	.0137495
neu_einste~i	.0265371	.0124013	2.14	0.032	.0022311	.0508431
verarbeite~e	.4518169	.1234247	3.66	0.000	.209909	.6937249
neue_Betri~g	-.4126862	.114611	-3.60	0.000	-.6373196	-.1880527
pro_dl_ver~t	.5285494	.143866	3.67	0.000	.2465772	.8105215
betriebsau~n	.2520074	.1404377	1.79	0.073	-.0232453	.5272602
beschäftig~g	.3092508	.1644938	1.88	0.060	-.013151	.6316527
fachkräfte~l	.3828475	.1145754	3.34	0.001	.1582839	.6074111
_cons	-2.590164	.1951746	-13.27	0.000	-2.972699	-2.207629

Positive Correlation:

- Skill Shortage
- New hiring of high-skilled
- Firm classified as industry
- Improvement of Product/Service
- "End of employment"
- Employment guarantee
- Volume of foreign sales

Negative Correlation:

- Collective agreement
- New factory equipment

3. Empirical Analysis- What determinates Offshoring of larger companies

Probit regression — Number of obs = 800
LR chi2(9) = 115.50
Prob > chi2 = 0.0000
Log likelihood = −170.1167 — Pseudo R2 = 0.2534

offshoring	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
geschäftsv~n	−.1807355	.0843704	−2.14	0.032	−.3460984	−.0153726
auslandsum~z	.0059256	.0027468	2.16	0.031	.000542	.0113092
probleme_fk	.8945842	.4998276	1.79	0.073	−.08506	1.874228
kapitalges~t	.5459691	.2052081	2.66	0.008	.1437687	.9481696
eigentümer~r	.4631043	.1891552	2.45	0.014	.0923669	.8338417
tarifvertrag	−.4223662	.1950483	−2.17	0.030	−.8046537	−.0400786
pro_dl_ne~kt	.4346437	.1601404	2.71	0.007	.1207744	.748513
verarbeite~e	1.655742	.3836435	4.32	0.000	.9038143	2.407669
keine_ba	.0003884	.0001572	2.47	0.013	.0000804	.0006965
_cons	.0961767	1.447285	0.07	0.947	−2.74045	2.932803

Positive Correlation:

- Volume of foreign sales
- Problems foreign capital
- New Product/Service
- Stock company
- Firm classified as industry
- Employees without education (after offshoring)

Negative Correlation:

- Collective agreement
- Volume of sales

3. Empirical Analysis- SMEs vs Larger Companies

Variable	SMEs	Larger Companies
Export turnover	+	+
Industry	+	+
Collective Agreement	-	-
End of Employment	+	
Improvement Product/Service	+	
New Product/Service launch		+
Skill shortage	+	
Investment		+
Workers Council		+
Employees without educationMeasured after offshoring)		+
Problems credit capital		+
Stock Company		+
New factory Equipment	-	
Volume of Sales		-

3. Empirical Analysis- Expected Employment trend

Thesis:

- *Offshoring tends to complement not substitute key parent activities Slaugther (2009);*
- *particularly for SMEs because Offshoring can increase the demand for resources and can increase complexity Boden, at al. (2009)*

Expected Employment trend for the forthcoming year until Juni 2009	steady	increase	decrease	Total
SME (no outsourcing)	76,50	14,46	9,04	100
SMEs-Offshoring 07/08	57,23	32,37	10,40	100
Larger Company- no outsourcing	75,64	15,16	9,20	100
Larger Company- Offshoring 07/08	59,62	21,50	18,88	100

3. Empirical Analysis- Increasing Employment expected

Probit regression — Number of obs = 7937
LR chi2(11) = 290.42
Prob > chi2 = 0.0000
Log likelihood = −3599.7873 — Pseudo R2 = 0.0388

steigende_^g	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
offshoring^ß	−.007517	.1510498	−0.05	0.960	−.3035691	.2885352
offshoring^u	.2874683	.1159524	2.48	0.013	.0602057	.5147308
keineverla^u	−.0828517	.0440032	−1.88	0.060	−.1690965	.003393
betriebsau^n	.2058393	.0377461	5.45	0.000	.1318584	.2798202
tarifvertrag	−.2538287	.0445717	−5.69	0.000	−.3411875	−.1664698
uebertarif	.1605471	.050344	3.19	0.001	.0618747	.2592196
sum_inv	.0112034	.0088957	1.26	0.208	−.0062318	.0286385
neue_Betri^g	.2164196	.0391873	5.52	0.000	.1396139	.2932253
auslandsum^z	.002792	.0008536	3.27	0.001	.0011189	.004465
pro_dl_ver^t	.2459006	.0365477	6.73	0.000	.1742683	.3175328
pro_dl_ne^kt	.1528532	.0496882	3.08	0.002	.0554662	.2502402
_cons	−1.371482	.1141726	−12.01	0.000	−1.595256	−1.147708

Positive significance:
- Offshoring-SMEs
- High-Salaries
- Volume of foreign sales
- Improvement of Product/Services
- Innovation of Product/Services

Negative significance:
- SMEs without any outsourcing activities
- Collective Agreement

3. Empirical Analysis- Lay-offs

Thesis: Offshoring leads to higher unemployment rates

Lay-offs	yes	no	Total
SMEs (no outsourcing)	6,32	93,68	100
SMEs-Offshoring 07/08	14,52	85,48	100
Larger Companies- no outsourcing	15,00	85,00	100
Larger Companies- Offshoring 07/08	18,18	81,82	100

```
Probit regression                                 Number of obs     =       6891
                                                  LR chi2(4)        =      69.83
                                                  Prob > chi2       =     0.0000
Log likelihood = -1988.6619                       Pseudo R2         =     0.0173

------------------------------------------------------------------------------
entlassungen |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  offshoring |   .2206479   .1325383     1.66   0.096    -.0391223    .4804181
    keine_ba |   .0019257   .0008585     2.24   0.025     .0002431    .0036083
betriebsrat  |   .1086332   .0556157     1.95   0.051    -.0003715    .2176378
     sum_inv |   .0646942    .012181     5.31   0.000     .0408198    .0885687
       _cons |  -2.138475   .1328523   -16.10   0.000    -2.39886    -1.878089
------------------------------------------------------------------------------
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```
Probit regression                                 Number of obs     =       1050
                                                  LR chi2(3)        =      27.00
                                                  Prob > chi2       =     0.0000
Log likelihood =  -461.1941                       Pseudo R2         =     0.0284

------------------------------------------------------------------------------
entlassungen |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 betriebsrat |   .5961222   .1850569     3.22   0.001     .2334173    .9588271
auslandsum^z |   .0028598   .0015886     1.80   0.072    -.0002538    .0059734
    keine_ba |  -.0005795   .0002035    -2.85   0.004    -.0009783   -.0001807
       _cons |  -1.481688   .1822435    -8.13   0.000    -1.838878   -1.124497
------------------------------------------------------------------------------
```

Positive and significant relation just for SMEs which offshored

3. Empirical Analysis- Expected Development- Business Volume

Thesis:

- *Offshoring enhances productivity, competitiveness rises, possible market share gains- leads to a rising volume of sales*

Expected Development- Business Volume	steady	increase	decrease	Total
SME (no outsourcing)	58,25	23,77	17,99	100
SMEs-Offshoring 07/08	43,02	36,63	20,35	100
Larger Company- no outsourcing	57,64	24,33	18,03	100
Larger Company- Offshoring 07/08	33,33	51,11	15,56	100

3. Empirical Analysis- Expected Development- Business Volume

Probit regression — Number of obs = 7937
LR chi2(11) = 222.02
Prob > chi2 = 0.0000
Log likelihood = -4592.0859 — Pseudo R2 = 0.0236

pos_erwart~n	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
offshoring~ß	.2491212	.1440629	1.73	0.084	-.033237	.5314794
offshoring~u	-.0189046	.1142562	-0.17	0.869	-.2428427	.2050335
keineverla~u	-.1078613	.0403896	-2.67	0.008	-.1870236	-.0286991
betriebsau~n	.0922381	.0340562	2.71	0.007	.0254893	.158987
tarifvertrag	-.2131786	.0395555	-5.39	0.000	-.2907059	-.1356513
uebertarif	.2232547	.0450278	4.96	0.000	.135002	.3115075
sum_inv	.0105726	.008112	1.30	0.192	-.0053265	.0264717
neue_Betri~g	.0432958	.0341819	1.27	0.205	-.0236995	.1102912
auslandsum~z	.0013855	.0008103	1.71	0.087	-.0002027	.0029738
pro_dl_ver~t	.2506345	.0329302	7.61	0.000	.1860924	.3151765
pro_dl_ne~kt	.1214199	.046731	2.60	0.009	.0298288	.2130111
_cons	-.8252628	.1031865	-8.00	0.000	-1.027505	-.623021

Positive significance:

- *Offshoring-Larger Companies*
- *High-Salaries*
- *Volume of foreign sales*
- *Improvement of Product/Services*
- *Innovation of Product/Services*

Negative significance:

- SMEs without any outsourcing activities
- Collective Agreement

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4. Conclusion

So far it seems that Offshoring decisions differ between SMEs and Larger Companies

1. One very important motive to offshore is skill shortage in SMEs

→Hiring of high-skilled is highly significant

→Indeed Offshoring SMEs have higher rates of lays-offs

→ **BUT:** the expected employment trend is positive so in total the fresh engagements outnumber the lay-offs

→ **HINT:** positive effects for high-skilled

4. Conclusion

2. *Larger Companies focus on other aspects when they offshore*

→ *For them an increasing volume of sales is significant*

→ *One motive seems to be to gain market shares*

4. Things to do

- *Integrate the Probit Model into a matching model*
- *Differentiate between materials and service offshoring*
- *Create a time panel to analyze the long-term effects*
- *...*

Thanks for your attention

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