

产学研协同创新对 区域创新绩效影响研究

2003-2012

26

DEA

GMM

210046

210046

200125

2010

Gao et al., 2011

71203097)

R&D

12DDB009

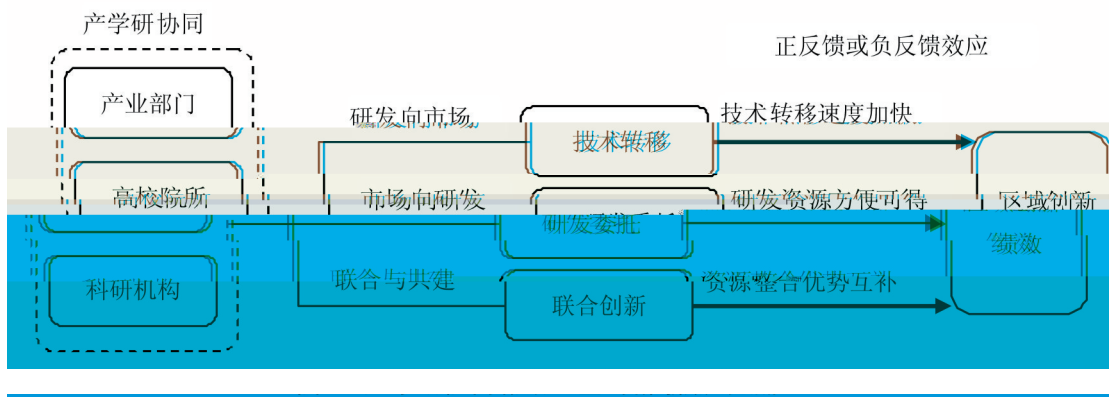
2013ZDIXM026

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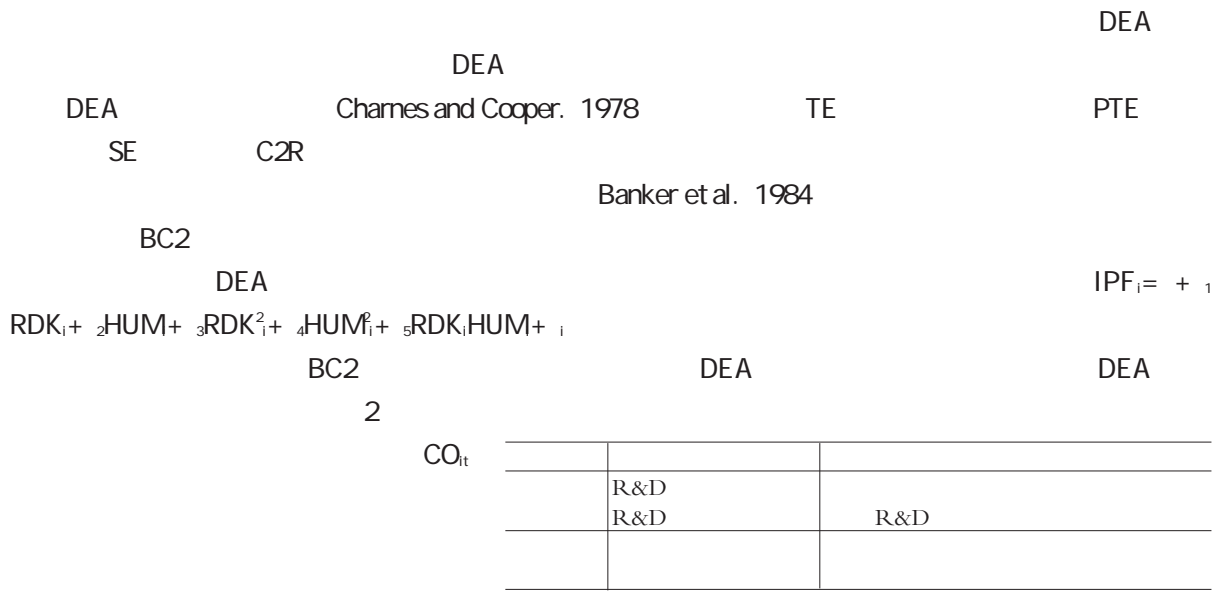
Grimaldi et al.,2002 Perkmann et al.,2011
Gao et al.,2010
Carayannis 2000 Perkmann et al.,2007 Santoro
et al.,2001 Pablo and Perkmann 2011
2010 2013
2007 Seppo et al.,2012 2008
2009
2012 Carayannis et al.,2000
Koschatzky 2002

GMM

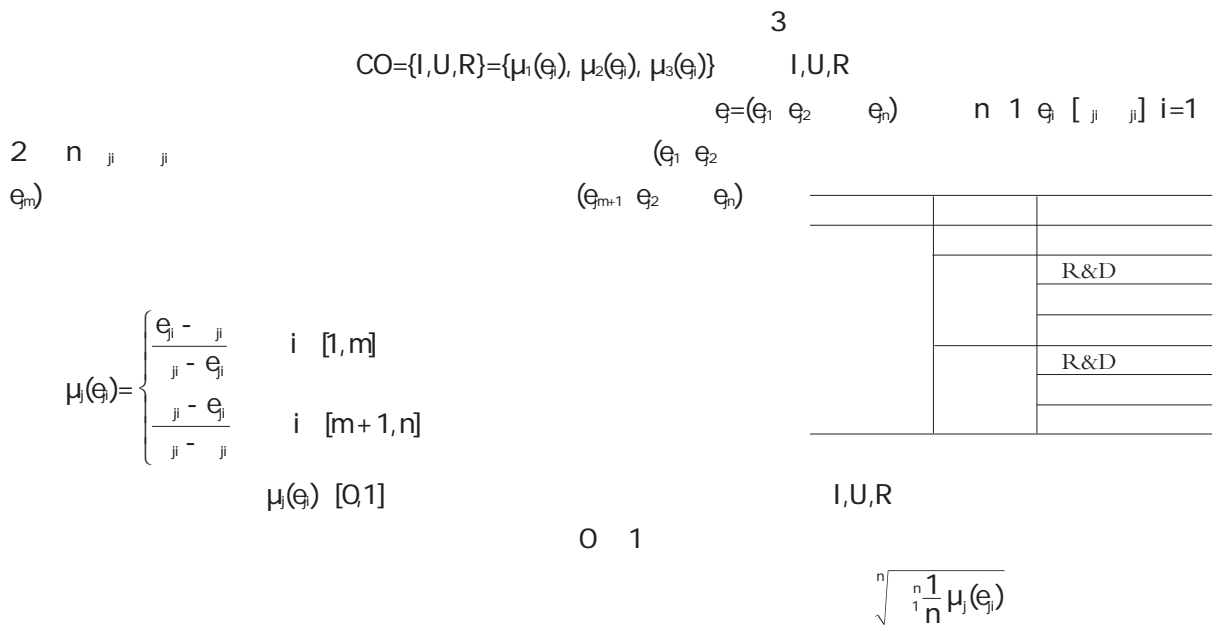
1



Chensbrough 2003 Etkowita 2008



2012



2011 9.6%
 2003- 2012 26
 WIND

1. R&D R&D DEAP21

2.

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0.881 | 1.01 | 1.142 | 1.158 | 1.187 | 1.236 | 1.388 | 1.083 | 1.133 |
| | 0.958 | 0.953 | 1.202 | 1.103 | 1.133 | 1.01 | 1.247 | 1.04 | 1.146 |
| | 0.813 | 0.855 | 0.961 | 1.22 | 1.027 | 1.003 | 1.255 | 0.958 | 1.213 |
| | 0.796 | 0.763 | 0.867 | 1.046 | 0.934 | 1.147 | 1.141 | 0.858 | 1.233 |
| | 0.853 | 0.801 | 0.853 | 0.899 | 0.906 | 0.905 | 0.721 | 0.965 | 0.921 |
| | 0.905 | 0.962 | 1.202 | 1.126 | 1.139 | 1.251 | 1.104 | 1.223 | 1.004 |
| | 1.083 | 0.827 | 1.037 | 1.11 | 1.059 | 0.891 | 1.127 | 1.068 | 1.053 |
| | 1.041 | 1.022 | 1.114 | 1.002 | 0.933 | 0.889 | 1.026 | 1.335 | 1.205 |
| | 0.819 | 1.015 | 1.042 | 1.316 | 1.046 | 1.019 | 1.228 | 1.001 | 1.107 |
| | 1.099 | 0.939 | 1.239 | 1.367 | 1.171 | 1.295 | 1.312 | 1.296 | 1.141 |

Dickey- Fuller ADF

3.

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0.0000 | 0.0749 | 0.0693 | 0.0841 | 0.1024 | 0.0928 | 0.1177 | 0.0990 | 0.1666 |
| | 0.1988 | 0.0274 | 0.0269 | 0.0695 | 0.1555 | 0.1134 | 0.0774 | 0.1599 | 0.1979 |
| | 0.0000 | 0.1486 | 0.1332 | 0.1467 | 0.1059 | 0.2515 | 0.2157 | 0.0661 | 0.1498 |
| | 0.0000 | 0.0882 | 0.0820 | 0.0799 | 0.1142 | 0.4264 | 0.0900 | 0.2116 | 0.0976 |
| | 0.1801 | 0.0420 | 0.0682 | 0.0529 | 0.2915 | 0.1987 | 0.0321 | 0.0525 | 0.1406 |
| | 0.1306 | 0.1115 | 0.1078 | 0.0184 | 0.1316 | 0.2095 | 0.0857 | 0.1630 | 0.1145 |
| | 0.1843 | 0.0743 | 0.0738 | 0.1411 | 0.0781 | 0.0273 | 0.0940 | 0.0340 | 0.0669 |
| | 0.0000 | 0.1514 | 0.1385 | 0.1458 | 0.1216 | 0.0331 | 0.1189 | 0.0409 | 0.0300 |
| | 0.0000 | 0.0536 | 0.0533 | 0.1455 | 0.1033 | 0.0884 | 0.0706 | 0.1072 | 0.2103 |
| | 0.0000 | 0.0850 | 0.0837 | 0.1242 | 0.0901 | 0.1037 | 0.0777 | 0.1680 | 0.1295 |

Stata12 Likelihood Ratio

Hausman

GMM

| | ADF | (C,T,P) | P |
|-------------------|---------|---------|-----------|
| IPF | 68.3392 | (C,0,1) | 0.0407** |
| CO | 89.1139 | (C,0,1) | 0.0032*** |
| IPF ⁻¹ | 66.5444 | (C,0,1) | 0.0393** |
| HUM | 208.836 | (C,T,1) | 0.0029*** |
| GDP | 176.274 | (C,T,1) | 0.0000*** |
| RDK | 101.682 | (C,0,1) | 0.0002*** |

***p<0.01 **p<0.05 *p<0.1 ADF C, T, P AIC

26

6

| | | FE | RE | OLS | | | |
|-----------------|-------------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|--------------------|
| GMM | IPF ⁻¹ | | | 0.500*** -11.41 | 1.004*** -29.88 | 1.026*** -41.02 | 0.768*** -11.04 |
| | CO | 0.318 -0.71 | 0.303 -0.64 | 0.131 -0.27 | 0.131** -2.2 | 0.288*** -3.92 | 0.131 -1.31 |
| | CO ⁻¹ | -0.029 (-0.07) | -0.093 (-0.21) | 0.161 -0.34 | -0.196*** (-3.22) | 0.327*** -3.14 | -0.237 (-0.85) |
| | RDK | 0.01 -0.03 | 0.693*** -3.65 | 0.404*** -5.03 | 0.193*** -4.04 | 0.189** -2.04 | 0.321* -1.76 |
| | HUM | 2.188*** -3.03 | 0.04 -0.19 | 0.158* -1.81 | -0.426*** (-5.27) | 0.679*** -4.8 | -0.359* (-1.72) |
| | GDP | 0.63 -0.98 | -0.476 (-1.36) | -0.424*** (-2.80) | -0.221** (-2.33) | -0.272* (-1.74) | -0.415 (-1.41) |
| | C | -21.133*** (-4.64) | -5.310*** (-4.11) | -2.906*** (-5.45) | 2.246*** -3.73 | -5.626*** (-5.98) | 1.663 -0.66 |
| | BP test | 0.0000 | 0.0000 | 0.0000 | | | |
| | Hausman | 0.0003 | 0.0003 | 0.0003 | | | |
| | Adjusted R ² | 0.292 | | 0.604 | | | |
| Sargan test | | | | 0.2703 | 0.4378 | 0.9929 | |
| Bond test AR(1) | | | | 0.0601 | 0.0761 | 0.1341 | |
| AR(2) | | | | 0.2305 | 0.4346 | 0.3392 | |

***p<0.01 **p<0.05 *p<0.1 t

test 0.2703 0.4378

Bond test AR(1) AR(2)

GMM Sargan test 0.9929

1

Bond test
GMM

GMM

1.026 1.004 0.768

0.131 0.288 2

-0.196 0.327

2015 5

1
26%
25% R&D

R&D GDP

2

GDP

formance Measurement System. *R&D Management*, 2011, 41(2).

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