



TOWARDS A RETURN OF INDUSTRIAL POLICY?  
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# **Foreign technology import policy and firm performance: Evidence from Chinese manufacturing firms in 1995-2004**

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# Goal of this paper

- Recent growth of Chinese economy、FDI and technology catching up
- Understanding the role of technology import in this process (v.s CPCC policy of Indigenous Innovation : 自主創新)
- Understanding the impact of market friendly regulation change of technology import in 2002 (China's accession to WTO)

# Types of technology import in 2007

Type of technology	Number of contracts	Number of contracts(%)	Amount (Million USD)	Amount(%)
Patent technology license	385	0.04	1561	0.08
Technology license	2081	0.21	8401	0.43
Technology consultation	5801	0.59	5177	0.27
Computer software	959	0.10	872	0.04
Trade Mark	77	0.01	171	0.01
Joint venture production	120	0.01	857	0.04
Key equipment, production line	246	0.03	2288	0.12
Others	104	0.01	77	0.00

Country	Number of contracts	Number of contracts(%)	Amount (Million USD)	Amount(%)
EU	2603	0.29	5972	0.32
U.S.	1385	0.15	5226	0.28
Japan	2418	0.27	3663	0.19
Korea	731	0.08	1906	0.10
Honkong	1088	0.12	807	0.04
Asean	319	0.04	491	0.03
Virgin Island	98	0.01	301	0.02
Swiss	141	0.02	218	0.01
Taiwan	296	0.03	196	0.01
Israel	22	0.00	13	0.00

(MOFTEC data)

# Regulation over technology import (MOFTEC)

Subject	Before 2001	After 2002
Contract period	10 year or less	Free
Confidentiality agreement on imported technology	Only within contract period	Free
Control of licensor for technology	No control after contract period	As is specified in the contract
Government Regulation	Need approval	Registration
Legal right of contract	After approval from the government	After contract agreement

# Data

- NBS's Science and Technology Survey: 1995-2004
- Manufacturing LMEs, focusing on domestic firms (exclusion of foreign owned, TMHK owned companies)
- 9,113-12,239 samples (unbalanced panel data)
- The amount of technology import as well as other innovation and firm performance variables

## # of tech import firms and its amount

Year	Number	Share	Average amount
1995	2354	10.3	13704.6
1996	2347	9.8	12308.4
1997	2132	8.9	9772.3
1998	1684	7.2	10990.2
1999	1740	7.9	10336.8
2000	2002	9.2	10197.1
2001	1794	7.9	12831.4
2002	1822	7.9	15713.8
2003	1748	7.9	18216.8
2004	874	3.2	28612.2
2005	894	3.1	22796.3

## By industry and region (share of tech import firms)

[illegible]



# Difference of tech import firms before and after 2002

Year	TFP		Labor productivity	
	Importer	Non-importer	Importer	Non-importer
1995	0.12	-0.02	23.74	18.82
1996	0.13	-0.15	28.35	18.63
1997	0.10	-0.23	33.80	19.77
1998	0.06	-0.29	40.48	24.66
1999	0.06	-0.20	45.86	31.59
2000	0.15	-0.19	59.54	40.57
2001	0.18	-0.13	61.71	43.74
2002	0.24	-0.13	80.58	51.28
2003	0.46	0.39	87.82	62.66
2004	-	-	119.96	70.55

# Determinants of tech imports

## Dependent variable

- Im-dummy

## Independent variables

- Im-dummy (-1)
- TFP (-1)
- Market Share
- Financing of S&T
  - by bank
  - by upper institutions
- State dummy
- d2002 (time dummy after 2002)
- Other tech variables
- + cross term of d2002

[illegible]

# Productivity impact of tech import

[illegible]

# Summary and conclusion

- Growing trend of technology import value, but the number of tech import firms declines after 2002
- More high-tech firms import technology after 2002
- Productivity impact of technology import increases after 2002
- The role of tech import in China's catching up becomes greater after deregulation of technology import (alongside of China's accession to WTO)