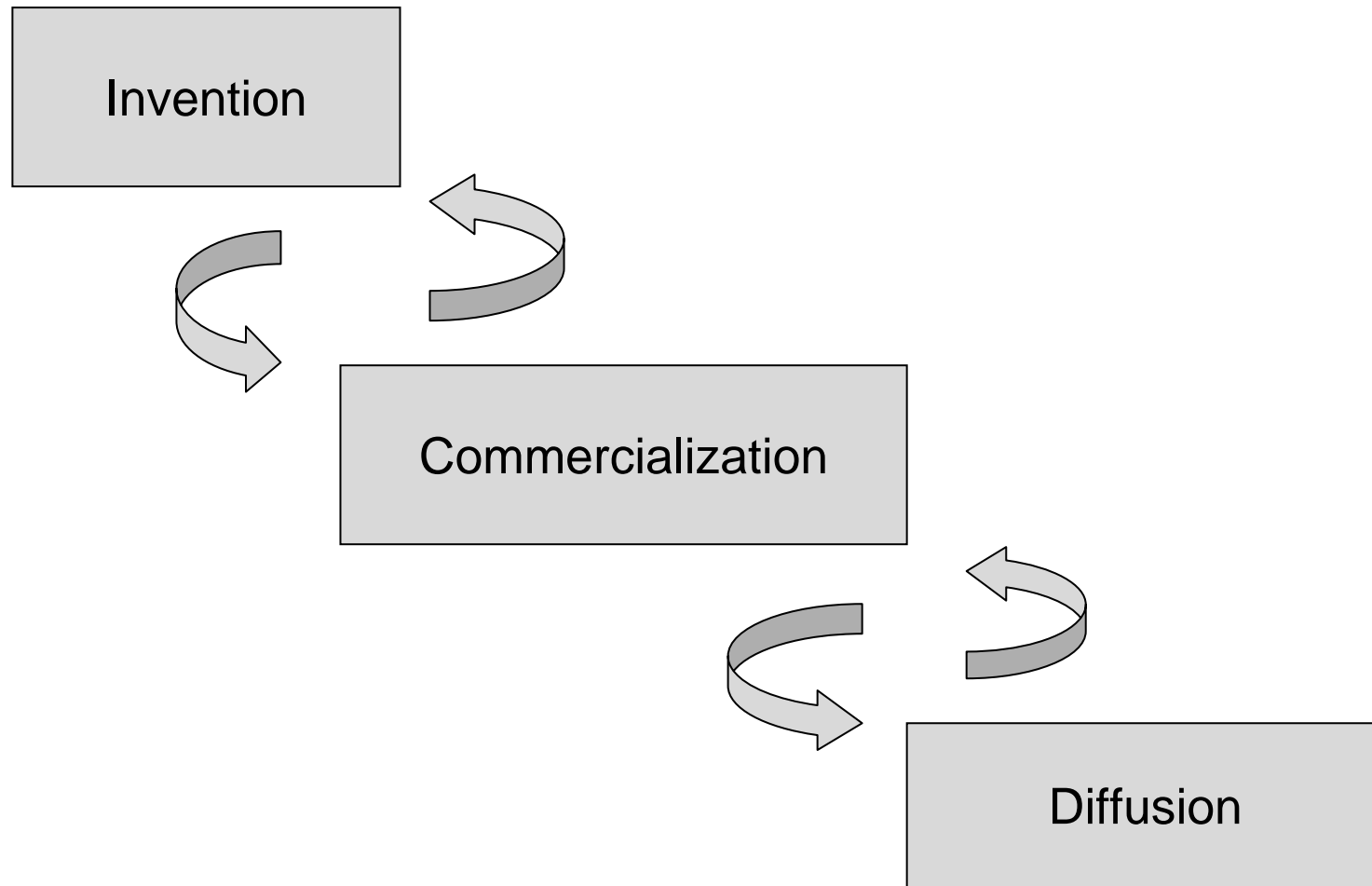


Determinants of Environmental Innovation in US Manufacturing Industries

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Journal of Environmental Economics and Management. 2003. Vol. 45. Pg 278-293.

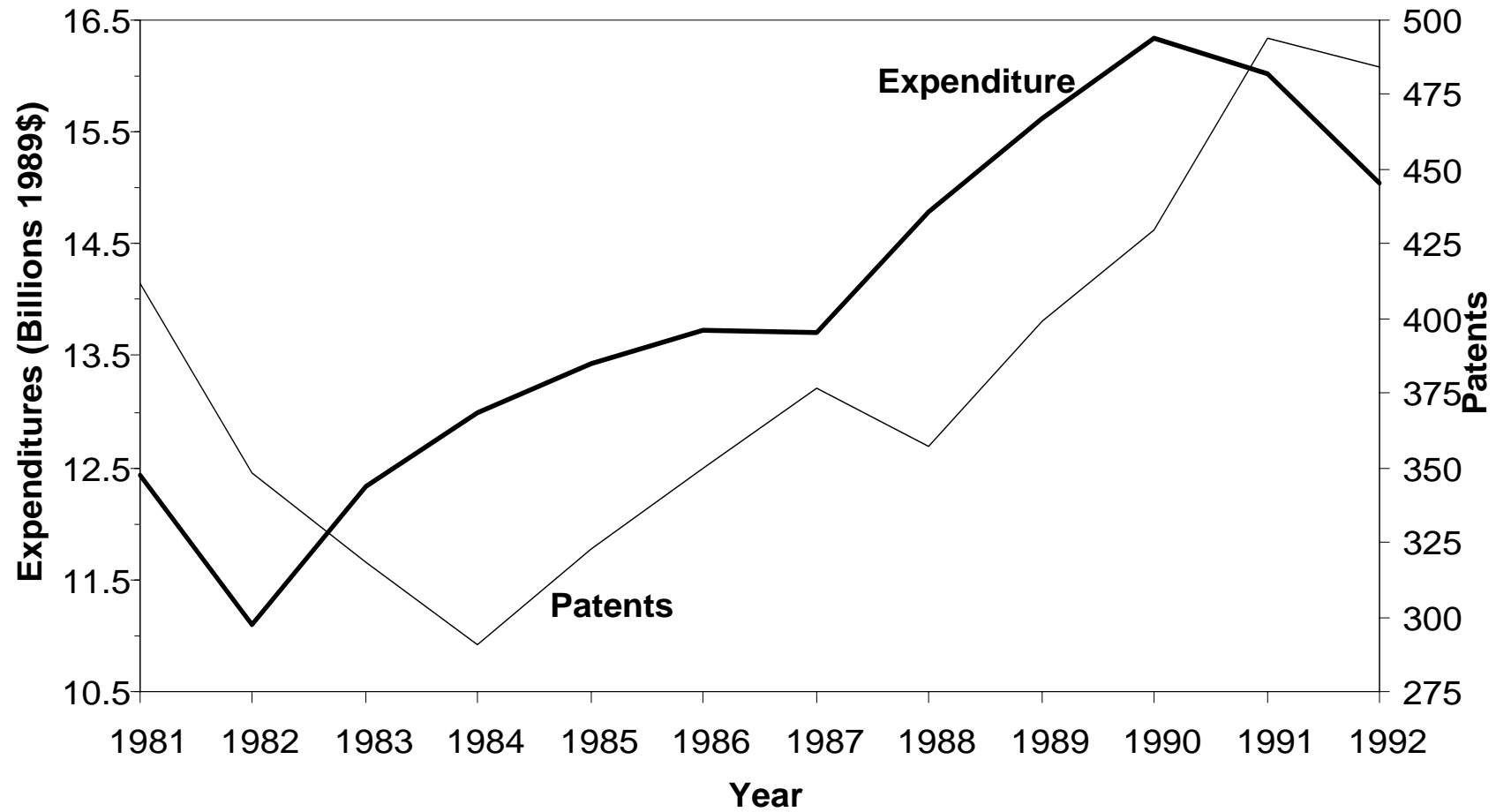
Process of Technological Change



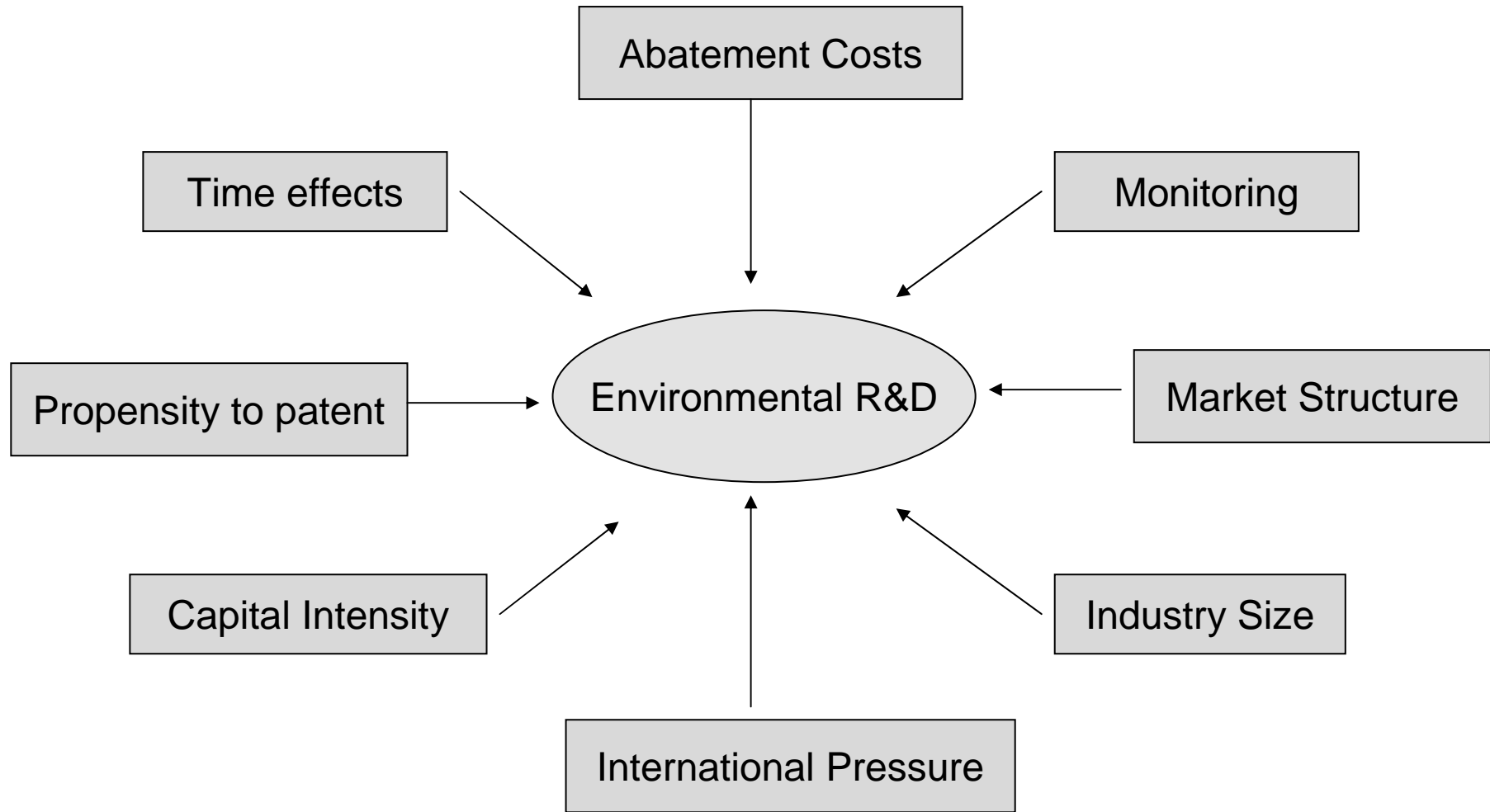
Environmental Innovation

- Acid rain prevention
- Air pollution prevention
- Water pollution prevention
- Solid waste disposal
- Hazardous or toxic waste destruction or containment
- Recycling or reusing waste
- Alternative energy sources

Pollution Abatement Expenditure and Innovation



Model



Estimation Results

Variable	Linear, Fixed Effects	Poisson, Population Averaged	Negative Binomial, Fixed Effects	Negative Binomial, Random Effects
Abatement Costs	0.0125 (0.000) ^{***}	0.0005 (0.004) ^{***}	0.0005 (0.044) ^{**}	0.0004 (0.045) ^{**}
Monitoring	-0.0025 (0.109)	-0.0002 (0.760)	0.0004 (0.388)	0.00009 (0.822)
Industry Size	0.00005 (0.002) ^{***}	0.0000007 (0.000) ^{***}	0.0000005 (0.012) ^{**}	0.0000005 (0.004) ^{***}
Market Power	-0.6395 (0.477)	-0.8963 (0.027) ^{**}	0.1067 (0.779)	-1.086 (0.004) ^{***}
Capital Intensity	4.6501 (0.270)	1.4138 (0.016) ^{**}	1.581 (0.065) [*]	1.1211 (0.199)
International Pressure	0.0307 (0.414)	0.0180 (0.214)	0.0598 (0.000) ^{***}	0.0237 (0.086) [*]

Conclusions and Future Research

- Innovation responds to incentives, including regulatory and market pressures.
- Type of environmental policy.
- Level versus quality of innovation.
- Invention → commercialization → diffusion.
- Effect on industry profitability.