

## ONLINE APPENDIX

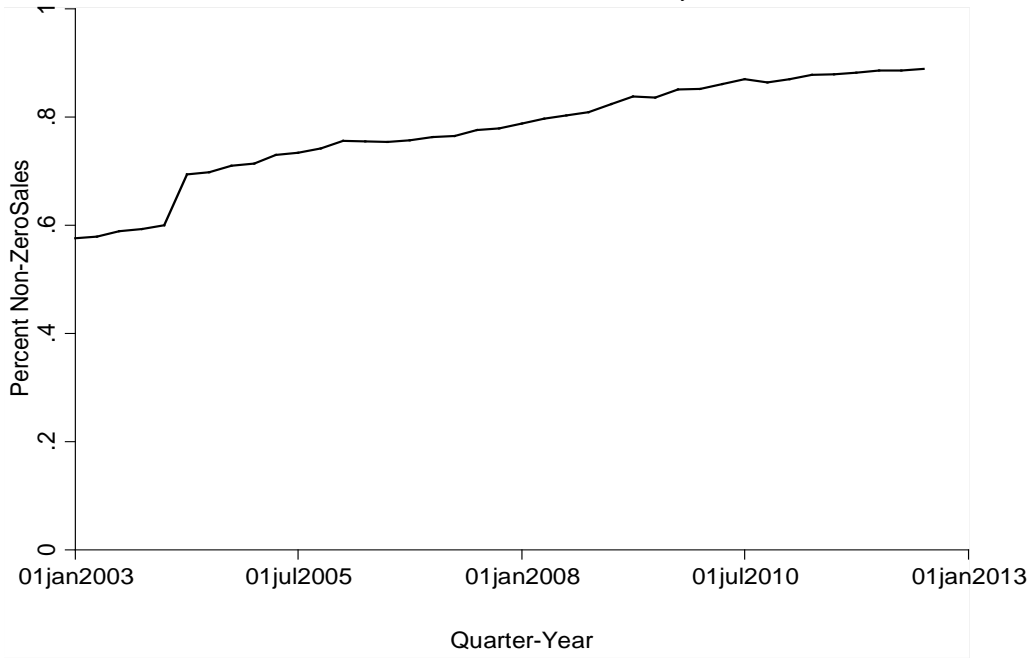
# THE MARKET IMPACTS OF PHARMACEUTICAL PRODUCT PATENTS IN DEVELOPING COUNTRIES: EVIDENCE FROM INDIA\*

Mark Duggan, Stanford University and NBER

Craig Garthwaite, Northwestern University, Kellogg School of Management, and NBER

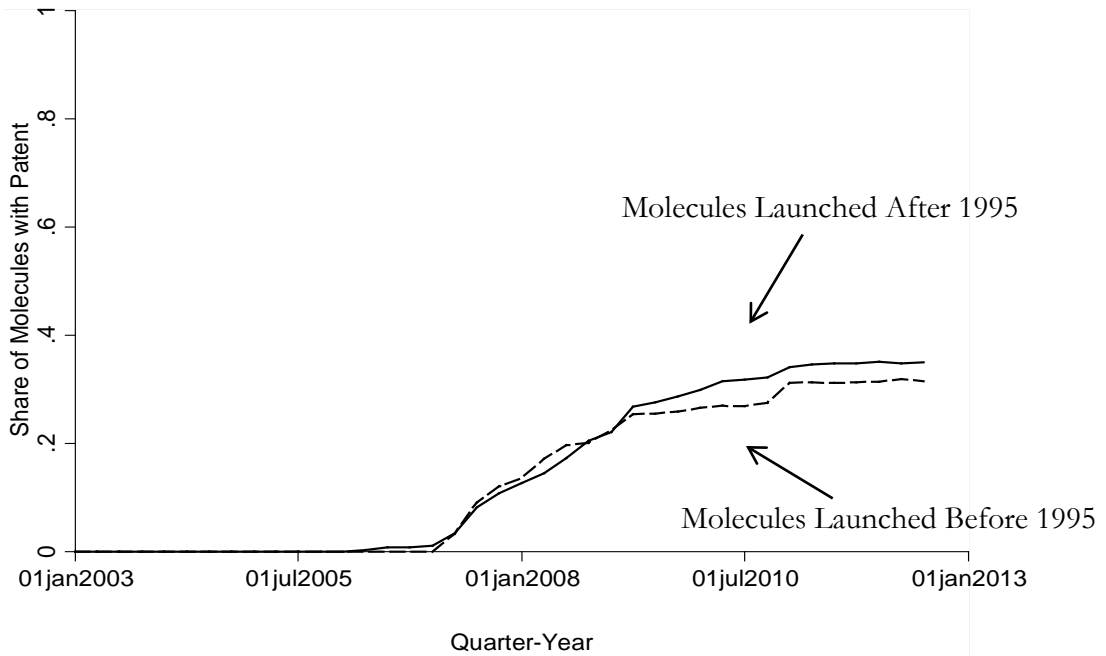
Aparajita Goyal, World Bank

**Appendix Figure 1**  
Molecules with Non-Zero Sales by Date



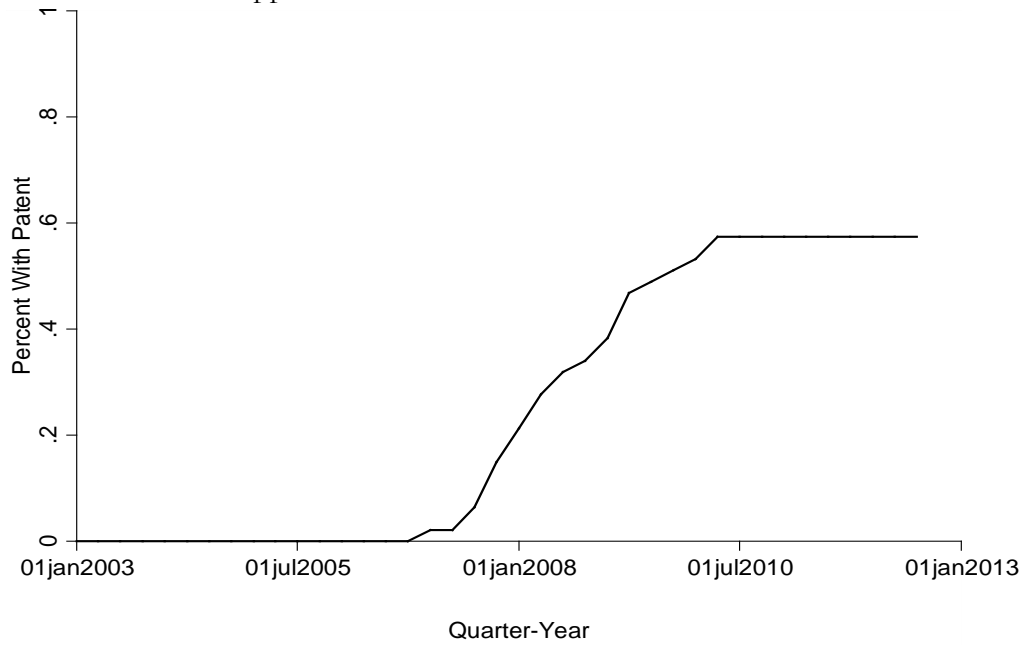
Data Source: IMS AG MIDAS™, 2003-2011, IMS Health Incorporated. All Rights Reserved

**Appendix Figure 2**  
Percent of Molecules with Patents by Molecule Vintage



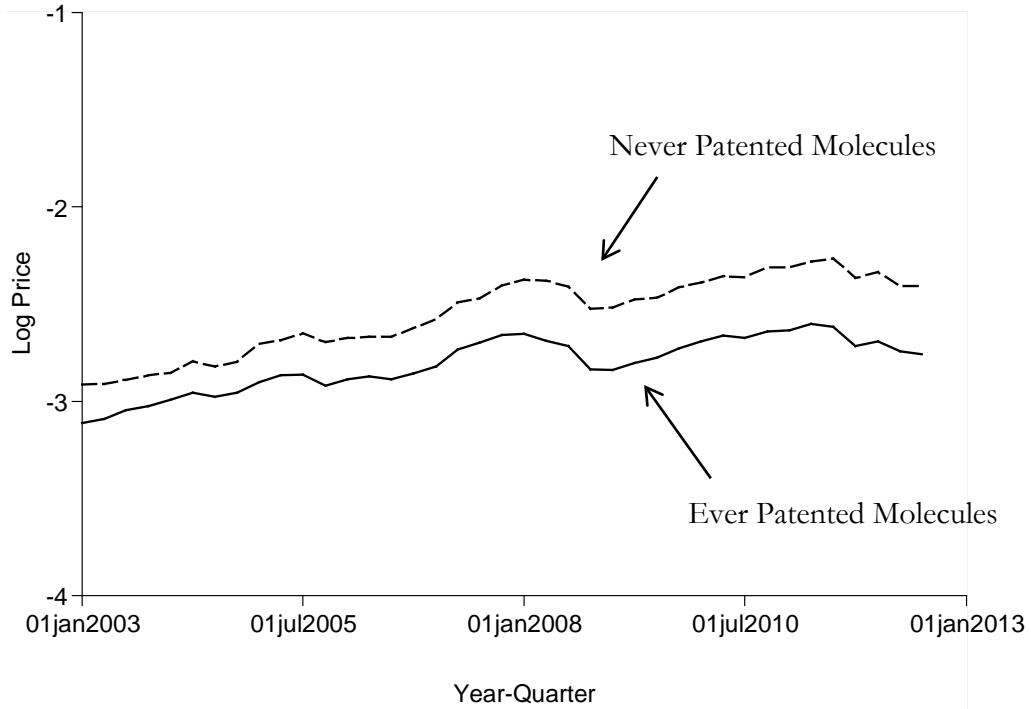
Data Source: IMS AG MIDAS™, 2003-2011, IMS Health Incorporated. All Rights Reserved

**Appendix Figure 3**  
Percentage of Molecules with Patents  
Molecules Approved for Sale in the United States from 1996-2004



Data Source: IMS AG MIDAS™, 2003-2011, IMS Health Incorporated. All Rights Reserved

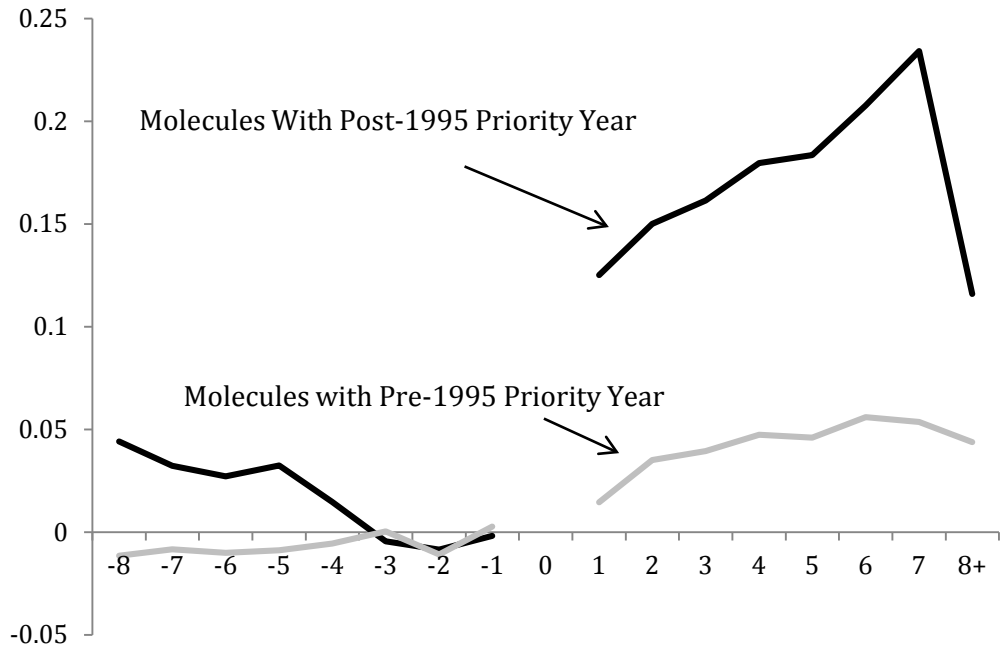
**Appendix Figure 4**  
Median Pharmaceutical Prices by Ever Patented Status



Data Source: IMS AG MIDAS™, 2003-2011, IMS Health Incorporated. All Rights Reserved

**Appendix Figure 5**

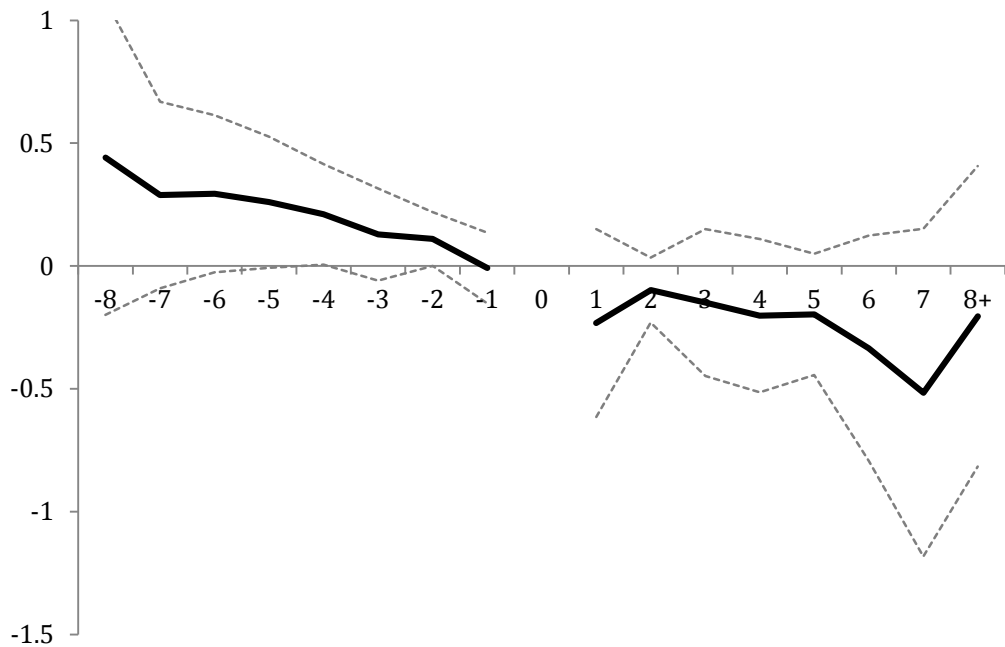
Event Study Estimates for the Log Price Before and After a Patent is Granted by the Molecules Priority Year



Data Source: IMS AG MIDAS™, 2003-2011, IMS Health Incorporated. All Rights Reserved

**Appendix Figure 6**

Event Study Estimates for the Log of the Quantity Sold Before and After a Patent is Granted



Data Source: IMS AG MIDAS™, 2003-2011, IMS Health Incorporated. All Rights Reserved

<b>Appendix Table 1</b>						
<b>Effect of Indian Patent Reform on Average Prices</b>						
Molecules with Identified Priority Date						
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Has Patent * QuarterTrend</i>	0.0002 (0.002) [0.926]		0.0005 (0.002) [0.843]		0.0002 (0.002) [0.917]	
<i>Has Patent</i>	0.045 (0.017) [0.008]	0.040 (0.018) [0.029]	-0.012 (0.040) [0.768]	0.005 (0.013) [0.699]	0.038 (0.018) [0.035]	0.033 (0.017) [0.059]
<i>Has Patent * Post95 First Sale Date</i>			0.077 (0.054) [0.158]	0.045 (0.027) [0.103]		
<i>Has Patent * Post95 Priority Year</i>					0.060 (0.113) [0.594]	0.060 (0.084) [0.477]
<b># of Observations</b>	10,040	5,641	10,040	5,641	10,040	5,641
<b># of Molecules</b>	331	183	331	183	331	183
<b>R-squared</b>	0.9863	0.9807	0.9864	0.9807	0.9864	0.9809
<b>Only Patented molecules</b>	No	Yes	No	Yes	No	Yes
<b>Mean of Dep. Var.</b>	-1.65	-1.96	-1.65	-1.96	-1.65	-1.96

Entries in the table represent the estimated coefficients from an OLS regression including molecule and quarter of the year fixed effects. Standard errors are reported in parentheses and allow for arbitrary correlation between observations at the molecule level. P-values are reported in brackets. The entire sample is composed of molecules that have a reliably matched priority year. The estimates in columns (2), (4), and (6) are for a sample containing only molecules that receive a single molecule patent at some point during the sample period. These estimates are based on data from IMS AG MIDAS™, 2003-2011, IMS Health Incorporated. All Rights Reserved