Bollinger learning-by-doing spillovers in the solar photovoltaic industry

Learning spillovers in the production of EPROMs areinvestigated. It turns out that spillovers aresignificant, even though internal learning is thepredominant source of learning. Concerning externallearning, it does not appear to particularly matterwhether this comes from domestic rivals or foreigncompanies. There is some indication that Japanesecompanies have ...

spillovers across firms from learning-by-doing (LBD) in the installation of the tech-nology. Using a dynamic model of demand and supply, this paper investigates in-stallation cost reductions due to localized LBD using comprehensive data on all solar PV installations in California between ...

The solar photovoltaic (PV) industry in the United States has been the recipient of billions of dollars of subsidies, motivated both by environmental externalities and spillovers ...

Local excise taxes, sticky prices, and spillovers: evidence from Berkeley"s soda tax. B Bollinger, SE Sexton ... Social Learning and Solar Photovoltaic Adoption. K Gillingham, B Bollinger. Management Science 67 (11), 2021. 83 * 2021: Peer effects in residential water conservation: Evidence from migration ... B Bollinger, J Sacco, ELI Liebman ...

effects in early periods of large capacity expansions in the Californian solar PV market but were not able to confirm the existence of spillovers from learning in their case study . Sagar & Van der

"Learning-by-Doing in Solar Photovoltaic Installations" Bryan Bollinger and Kenneth Gillingham We seek to answer: Is there learning-by-doing (LBD) in solar PV installations? Is there ...

THE ROLE OF INTERFIRM KNOWLEDGE SPILLOVERS FOR INNOVATION IN ENVIRONMENTAL TECHNOLOGIES: EVIDENCE FROM THE SOLAR PHOTOVOLTAIC INDUSTRY Joern Hoppmann ETH Zurich, Department of Management, Technology, and Economics Harvard University, Energy Technology Innovation Policy Group Email: ...

The solar photovoltaic (PV) industry in the United States has been the recipient of billions of dollars of subsidies at the federal and state level, often motivated by environmental externalities ...

Using a rich dataset on solar PV installations in California, we find evidence of peer effects that depend on the installed base at the zip-code level, suggesting the presence of social learning ...

The solar photovoltaic (PV) industry in the United States has been the recipient of billions of dollars of subsidies at the federal and state level, often motivated by environmental ...

Solar Photovoltaic Industry Joern Hoppmann1,2 Abstract Knowledge spillovers play a potentially important

role for innovation and competitive dynamics in mass-produced environmental technologies. Currently, however, we lack research that studies knowledge spillovers in such technologies at the firm level. To address this shortcoming, in this

Downloadable (with restrictions)! We investigate intertemporal strategic interactions if monopolies, cartels, or oligopolies benefit from firm internal as well as external learning by doing. Our analysis is carried out for a linear learning cost curve, which allows the derivation of the linear Markov perfect equilibrium (LMPE). The model yields surprising properties: First and highly policy ...

Bollinger, B and K Gillingham (2012). Peer effects in the diffusion of solar photovoltaic panels. Marketing Science, forthcoming . Google Scholar; Borenstein, S (2011). The private and public economics of renewable energy generation. ... K and B Bollinger (2012). Learning-by-doing spillovers in the solar photovoltaic industry. Yale University ...

The semiconductor industry is often cited as a "strategic" industry in part because important learning-by-doing spillovers may justify special industrial policies. Documenting the precise nature of these spillovers is crucial for determining the advisability of such policies and is helpful for understanding the contribution of learning to endogenous growth. Yet existing empirical ...

The Role of Interfirm Knowledge Spillovers for Innovation in Mass-Produced Environmental Technologies: Evidence from the Solar Photovoltaic Industry November 2018 Organization & Environment 31(1):3-24

Bollinger and Gillingham (2019) find that learning by doing are significant in reducing PV installed costs, contributing around $0.5 in social welfare benefits for every Watt ...

Bollinger and Gillingham (2019) and Sagar and Van der Zwaan (2006), emphasize the importance of learning by doing and of R& D, Wand and Leuthold (2011) integrate learning by doing and technology diffusion and apply it to private solar PV installations in Germany, and Reichelstein and Sahoo, 2015, Reichelstein and Sahoo, 2018 argue that learning ...

supports cheaper utility-scale PV deployment can create spillovers that lead to complementary cost reductions in distributed PV. Specifically, through interviews with experts in the PV industry, this paper finds that strong utility-scale deployment helps build local PV competencies and ecosystems, thereby facilitating the networks, scale, and value

Gillingham, Kenneth and Bryan Bollinger (2021). Social Learning and Solar Photovoltaic Adoption" Man-agement Science 67(11): 7091-7112. Bollinger, Bryan, Kenneth Gillingham, and Marten Ovaere (2020). Field Experimental Evidence Shows that Self-Interest Attracts More Sunlight." Proceedings of the National Academy of Science 117(34): 20503-20510.

Bollinger learning-by-doing spillovers in the solar photovoltaic industry

Learning by doing and economies of scale are generally believed to the most important drivers of cost reduction of solar PV (Kavlak et al., 2018; Nemet, 2006). For soft cost in particular, Bollinger and Gillingham (2019) find that learning by doing contributes to $0.12 per watt cost reduction in California between 2002 to 2012.

Learning-by-doing in the Solar Photovoltaic Industry (joint work with Kenneth Gillingham, Yale) ABSTRACT: The solar photovoltaic (PV) industry in the United States has been the recipient of substantial production subsidies at the federal and state level, often motivated by both environmental externalities ... and dynamic spillovers from ...

Non-hardware costs are majority of the cost of producing solar photovoltaic (PV) electricity. We use matched data on patents and over 125,000 residential PV installations to estimate the effects of three learning mechanisms in reducing PV costs: learning by doing, searching, and interacting.While previous work in this area has focused predominantly on ...

The semiconductor industry is often cited as a "strategic" industry in part because important learning-by-doing spillovers may justify special industrial policies. Documenting the precise nature of these spillovers is crucial for determining the advisability of such policies and is helpful for understanding the contribution of learning to endogenous growth.

Social Learning and Solar Photovoltaic Adoption: Evidence from a Field Experiment Kenneth Gillingham Bryan Bollinger August 17, 2017 Abstract A growing literature points to the importance of social interactions and nudges in in uencing economic outcomes. This study investigates a large-scale behavioral

increase to adoption of a fast-growing renewable energy technology: solar photovoltaic (PV) installations. The Solarize" program is a community-level campaign with several key pillars. Treated municipalities who receive the intervention choose a ...

This paper considers solar PV balance-of-system (PV BOS) technologies as a case to address the above research questions. The choice to focus on PV BOS technologies is motivated by two factors: (1) large-scale deployment of distributed solar PV technologies is widely considered to be an important piece in addressing the environmental impacts of the electricity ...

This study empirically examines a prominent justification for public subsidies of emerging technologies: that stimulating demand for them provides opportunities for learning by doing. Even if firms learn from their experience, subsidies are still second best to pricing negative externalities if firms can appropriate the benefits of learning. I construct a panel of electricity ...

Working Papers "Learning by Doing in Solar Photovoltaic Installations" with Kenneth Gillingham "Sustainable Product Profit Potential and Availability" with Randi Kronthal-Sacco and Levin Zhu

Bollinger learning-by-doing spillovers in the solar photovoltaic industry

"The Impact of Product Location Changes on Habits, Search, and Purchase Decisions" with Ella Xu and Raluca Ursu "Equilibrium Effects of Competition on Solar Photovoltaic Demand and ...

data on the residential solar PV market in California from 2008 to 2013, I find evidence of substantial learning-by-doing and knowledge spillovers across firms. Counterfactual analysis suggests that a state-level consumer subsidy program expanded the solar PV industry. 1

Structured interviews with PV industry experts and a dynamic bottom-up techno-economic model based on component experience curves explores the impact of these spillovers on distributed PV costs and affordability. ... learning-by-doing spillovers occur for value chain steps that are largely process-driven (i.e. labor- or manufacturing-intensive ...