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## The Impact of Economic Crisis on Innovation Generation: Evidence from Greece

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### Résumé / Summary

The economic crisis that started in 2008 has negatively affected the majority of countries. Nearly all OECD countries have suffered a fall in GDP and trade flows and an increase in unemployment. The global economic crisis has also limited entrepreneurship and underpinned innovation, while the recorded severe drop in demand may have negative implications for long-term economic growth. The crisis has revealed weaknesses (and strengths) which pre-existed, across countries, sectors and firms. Business innovation and R&D activities couldn't stay untouched. International figures show that business enterprise R&D activities and expenditures as well as patent filings were hit by the crisis. However, large firms have recovered quickly, as confirmed by their growth rates in R&D investments and sales of top corporate R&D investors. Large medium-tech manufacturers have been hit strongly. Generally, more destruction could be seen than creation.

In this context the paper studies the effects of the international crisis on the production of innovation for the Greek case based on patent records. The paper describes the existing situation (after the start of the crisis) and compares it with the previous one (before the crisis) in relation to features, such as those of patent stocks and growth, ownership, technological content and economic direction. Results show that the international crisis and the Greek 'bankruptcy' with the IMF's involvement have affected the production of innovation, but with a delay. In fact the fall in patents can be seen only after 2011. The basic characteristics of the Greek innovation behavior remain rather stable, at least in relation to the parameters of ownership and geography. However, the analysis reveals differences on the content of technological and economic direction: 'Fabricated metal products' and 'pharmaceuticals' keep their shares, while being slightly affected by the crisis. On the contrary, sectors like those of 'energy machinery', 'electric motors, generators, transformers', 'other electrical equipment' and 'measuring instruments' have mainly emerged after crisis. Results, therefore, show that there has been much destruction as well as much creation. Greek innovation has passed a shock, but there are signs that there is an increasing number of new innovators which choose to exploit this 'crisis'

opportunity.

Keywords: Economic crisis, Greece, Innovation production, Patents

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