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Competition, Productivity and Competitiveness: Theory, Evidence, and an Agenda for Cyprus†

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Abstract

Structural reform programs often emphasize the importance of enhancing product market competition as a means of boosting productivity. Measures to that effect include trade liberalization; removal of entry barriers and market liberalization; privatizations; and an enhanced role for competition authorities. The article examines the theoretical link between competition and productivity and reviews the historical evidence on the effectiveness of competition-enhancing measures in improving productivity and boosting economic growth. It concludes by describing an agenda for structural reform for the Cypriot economy.

Keywords: Structural reform, productivity, competitiveness, Cyprus.

1. Introduction

The divergent path taken by the Eurozone's economies since the new currency's inception is one of the fundamental underlying causes of the current crisis. A number of European countries – mostly in the north - pursued policies aimed at raising productivity and improving their competitiveness. Several other countries – mostly in the south - experienced rapid credit expansion that fueled asset price inflation (primarily in the form of housing bubbles) and led to large current account deficits and a decline in competitiveness. Cyprus belongs to the latter category. It has had a current account deficit every year since 1999; the deficit has exceeded 5% every year since 2004 and even exceeded 10% from 2007 to 2011 (with the exception of 2010, when it was slightly below 10%).

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The OECD defines competitiveness as 'a measure of a country's advantage or disadvantage in selling its products in international markets.'[1] It is a relative notion that depends on how a country's productivity compares to the productivity of other countries. Productivity is defined as the amount of goods and services produced per unit of labor employed.[2] It is the primary determinant of a nation's material well-being: a nation that can produce more goods from a given amount of resources can also consume more goods. Improving competitiveness is therefore equivalent to improving productivity.

Productivity is measured as the value of output produced per unit value (euro) of inputs. It can be improved by either decreasing the denominator or by increasing the numerator (or, of course, both). The denominator can be reduced quickly and effectively through a reduction in wages. This, however, can be painful, as countries like Greece are finding out. The alternative of increasing the numerator is a much more appealing strategy but requires structural remedies that are often politically difficult to implement and take time to bear fruit.

The term 'structural reform' encompasses a broad range of policies that have been tried out in the last forty years or so. A key objective of the reforms is to employ the forces of market competition towards the goal of increasing productivity. This paper discusses the theoretical mechanisms by which competition can increase productivity, surveys the evidence from forty years of structural reform, and closes with an agenda for structural reform in Cyprus.

2. Competition and productivity: theoretical considerations

The primary driver of productivity is technological progress. The latter term is used in a broad sense to encompass not just technical improvements but also better business and management practices. Productivity also increases in a less celebrated fashion via the reallocation of production from less efficient firms to more efficient firms. This channel had been somewhat overlooked but has received new prominence in recent years as empirical research has shown that it is an important source of productivity gains.

How important is market competition in boosting productivity by pushing the technological frontier and by facilitating the reallocation of production?

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[1] OECD *Glossary of Statistical Terms*, http://stats.oecd.org/glossary.

[2] Economists prefer a more general notion called total factor productivity, which takes into account all productive inputs, not just labor.

The answer is quite uncontroversial in the latter case. The pressure of competitive market forces gives firms an incentive to look for ways to cut production costs and improve product quality. Successful firms gain market share at the expense of their rivals as production shifts from relatively unproductive firms to those that are more efficient. Importantly, this mechanism can be effective in boosting productivity even in the absence of technological progress. Market competition plays an important role in producing this outcome. Competitive environments can therefore be expected to lead to higher productivity *levels* than monopolistic environments.

A perhaps even more important question concerns the relationship between competition and productivity *growth*. Does a competitive environment foster innovation leading to high productivity growth rates? The theoretical link between market competition and innovation is not clear-cut. The well-known remark by Sir John Hicks (1935) that 'the best of all monopoly profits is a quiet life' suggests that a monopolistic environment may lack the rigor necessary to foster innovation. On the other hand, Joseph Schumpeter (1943) argued that competition is detrimental to innovation because any abnormal profits generated by innovation are competed away, thus removing the incentive to innovate in the first place. Monopolies are necessary, he thought, because the prospect of monopoly is what drives innovation.

Schumpeter's ideas were very influential, even though they ran against basic economic intuition that competitive pressure should foster innovation. Eventually, game theoretic models provided a counterbalance to Schumpeter's ideas as they highlighted circumstances under which competition would be more conducive to innovation than monopoly. With theory unable to provide clear answers, the question became an empirical one.

3. Effectiveness of structural reforms

3.1 Historical context

The 19th century's laissez faire capitalism did not operate as smoothly as Adam Smith had envisioned. Cartels and monopolies came to dominate key sectors of the economy such as energy and transportation. This development brought about the first attempts at market regulation in the end of the 19th century. The trend continued into the 20th century and picked up speed after the Great Depression and World War II. The post-war period saw the creation of many state-owned enterprises (SOEs) in Europe and in many of the newly independent nations.

With time it became apparent that SOEs suffered from low productivity and provided a fertile ground for corruption. Problems were also noted in efforts to regulate monopolistic industries in the United States. Disillusionment with the state's performance led to a reform agenda centered on the idea of instilling market discipline in closed and protected sectors. This paradigm shift was facilitated by technological improvements that made it possible to foster competition in sectors that were previously thought to be natural monopolies, such as telecommunications. The development of the economic theories of auctions and mechanism design provided a useful set of tools for designing new markets in areas like energy, telecommunications and the environment.

The wave of market liberalization began in the 1970s in the United States and gradually spread throughout the globe. The UK's privatization program of the 1980s led to the adoption of similar policies in many other countries. Key sectors such as banking, air travel and telecommunications were liberalized. Many markets that were hitherto monopolized by SOEs were opened to competition; many SOEs were privatized; trade barriers were lowered or eliminated; closed professions were liberalized. The impact of these reforms has been analyzed in hundreds of studies providing much evidence on what works and what does not. The remainder of this section summarizes the findings of studies in the key areas of trade liberalization, privatization, market liberalization, innovation, and telecommunication reform.

3.2 Evidence from reform

A large literature has assessed the impact of trade liberalizing reforms in several countries. The term encompasses a number of policies including tariff reduction and removal of quotas and other trade barriers. The voluminous literature is surveyed in Tybout (2003). The key findings of interest are that (i) price-cost markups fall with import competition; (ii) production is rationalized, meaning that the most efficient plants expand while large import-competing plants tend to contract; and (iii) exposure to foreign competition often improves intra-plant efficiency. As an example, Bernard and Jensen (2004) find that 40% of total factor productivity growth in the US manufacturing sector in the period 1983-1992 can be attributed to output reallocation.

There is also a large literature assessing the impact of privatization programs around the world. The key findings are summarized by Megginson and Netter (2001). Ex-SOEs generally perform better after they are privatized: they are more profitable and productive and spend more on capital investments. There is evidence that privatizations contribute to the development of capital markets and some evidence that they contribute to

the improvement of corporate governance. They are often associated with a drop in employment; this is not surprising as SOEs are typically overstaffed. There is no conclusive evidence of consumer benefits from of privatizations in the form of lower prices or higher quality products. In another assessment of the international experience, Kikeri and Nellis (2004) conclude that 'in competitive sectors privatization has been a resounding success in improving firm performance. In infrastructure sectors, privatization improves welfare […] when it is accompanied by proper policy and regulatory frameworks.'

Perhaps the most important conclusion to draw from privatization experiences is that outcomes vary widely. Well-designed privatization programs can be and have been very successful in terms of increasing productivity and raising state revenue. Privatizations in countries lacking sound institutions can be disastrous as state assets end up in the hands of the well-connected at bargain prices. It is also important to keep expectations in check; one of the main reasons that privatization remains controversial is that its proponents in the past have tended to oversell the potential benefits.

Telecommunication market reform has been one of the great success stories. In a survey of telecommunications reform in developing countries, Fink, Mattoo and Rathindran (2003) find that both privatization and competition lead to significant improvements in performance, but the best performance is achieved by comprehensive reform programs involving both policies and the support of an independent regulator. They also note that introducing competition at the same time as privatization (rather than afterwards) leads to better outcomes.

The question whether innovation is better fostered in competitive or monopolistic environments has been a subject of debate for many years. Aghion and Griffith (2005) provide a summary of both the theory and the empirical evidence on this important question. Early empirical work inspired by Schumpeter found that larger firms were more innovative. More recent work suggests that the relationship is more complex and might in fact be nonlinear: at low levels of competition, innovation tends to increase as competition becomes more intense; at high levels of competition the relationship is reversed, perhaps because the Schumpeterian effect kicks in.[3] It is difficult to say where the tipping point is, but it is fair to conclude that, unless a market is quite competitive, competition is unlikely to hurt innovation but will rather encourage it.

[3] Important contributions include Nickell (1996) and Blundell, Griffith and Van Reenen (1999).

The weight of the evidence suggests that the push for competition has produced tangible benefits in most areas. Telecommunication markets have been a great success; deregulation in air transport has substantially reduced fares; energy markets are still a work in progress but - despite some early setbacks - the outlook is positive. Trade liberalization has improved productivity and reduced markups, while competitive pressure has been shown to boost innovation. Privatization has produced many success stories but also some failures. The most significant failure of the reform agenda is banking sector deregulation. It is clear that the many idiosyncrasies of the financial sector do not allow competitive forces to work. The financial sector needs to be carefully regulated and monitored.

4. An agenda for Cyprus

The Cypriot economy has a number of features that are not conducive to the spread of competition. The economy's small size limits the number of firms that can be supported in industries with significant fixed costs. The island nature and distance from the European continent imply large transportation costs that dampen any competitive pressure that might be brought about by imports or the threat of imports. The Commission for the Protection of Competition has been unable to build the expertise required to properly carry out its mission due to a combination of inadequate resources, bad staffing decisions and bad management.

An agenda for structural reform with the aim of infusing competition in the Cyprus economy would have to include some of the above:

- **Air transportation**: an open skies policy must be adopted. Bilateral agreements restricting some routes to national carriers must be scrapped if possible and entry of new airlines must be encouraged.

- **Privatizations**: Cyprus Airways and the Cyprus Stock Exchange are prime targets for privatization given their poor performance under state management. The state telecommunication operator Cyta is doing quite well and could generate significant revenue if privatized; the market is characterized by adequate and increasing competition and a competent regulator, meaning that the time is ripe for privatization. Cyta would benefit from private sector management and an infusion of technological expertise. The same is true of the power company, EAC, although the case for privatization is tempered by the fact that there is no competition as of yet. Privatizing the company could raise significant revenue but care must be taken to ensure that there will be enough competition and a strong regulator to constrain a possibly aggressive privately owned dominant incumbent.

- **Port management**: the successful example of airports should be followed in ports, as port management is generally thought to be poor. Handing it over to private companies could improve performance and generate significant revenue.

- **Retail trade**: there are many restrictions on store opening hours, timing of sales, and on the types of goods different types of stores can sell. These need to be lifted.

- **Closed professions**: there are relatively few of them, notably taxi and truck drivers and pharmacists; they need to be opened up. Licensing requirements by professional associations of lawyers, doctors, engineers and other groups should be evaluated to ensure that they do not constitute a barrier to entry.

- **Public sector**: it needs a radical overhaul and change in philosophy. The public sector's mission must be redefined as that of a provider of services to citizens and businesses, not of cushy jobs. The focus must be on the key tasks of regulation, supervision, coordination and the provision of high quality public services in order to provide an environment where private initiative can flourish. Productivity can be improved by introducing elements of competition such as cost accounting, performance evaluation and incentive and reward systems.

- **Procurement**: a very large fraction of government purchases are made through procurement auctions. These processes need to be evaluated to ensure that they are effective in securing the best possible prices for purchased goods and services.

- **Regulation and supervision**: improve banking system regulation (including the cooperative sector) by the Central Bank and Securities and Exchange Commission. The Commission for the Protection of Competition has suffered through many management fiascos and continues to be hampered by an ineffective structure, inadequate resources and limited autonomy.

- **Labor law reform**: anti-competitive clauses in labor law and collective bargaining agreements must be eliminated. Restrictions on pay scales, operating hours and other dimensions of firm activity constitute barriers to entry (banking is a prime example). Collective bargaining agreements should be at the firm rather than the sectoral level (at least where firm size makes this a practical option).

5. Conclusion

Economic theory and intuition suggest that competitive markets promote higher productivity and efficiency. After forty years of structural reform experience around the globe, there is now ample evidence on what type of reform works and under what conditions. Many sectors of the Cypriot economy have been sheltered from competition. The country needs to slim down and reform its public sector and open up its markets to competition. An agenda of well-designed structural reform can make the economy more efficient and competitive and better suited to face the challenges lying ahead.

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