



EEI POLICY PAPERS

Competition, Innovation and Prosperity

Rok Spruk



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About EEI Policy Papers

The European Enterprise Institute Policy Papers series aims to inform the European political debate with qualified opinionated arguments, promoting the ideas of free enterprise and free competition. Papers are commissioned as analytical papers written either directly by EEI staff or by external writers. Any conclusions or opinions expressed in these papers do not necessarily reflect the opinion of the EEI or of those affiliated with the EEI.

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The European Enterprise Institute is a non-profit, non-party affiliated organization, registered in Belgium. It aims to promote entrepreneurship in the EU policy community and to provide a platform for the ideas and philosophy of entrepreneurship throughout Europe.

The EEI works to facilitate research and debate in all areas of policy with impact on the conditions for entrepreneurship, incentives for innovation, competitiveness and economic prosperity. The EEI does not take any institutional opinion on individual issues but actively encourages an opinionated dialogue among stakeholders.

Table of Contents

A Word From the Publisher.....	6
Foreword.....	7
Competition in Economic Theory.....	9
The Impact of Competitive Innovation on Welfare.....	14
The Empirical View of Innovation.....	21
R&D Innovation and Economic Growth: An Integrated Perspective.....	24
Removing barriers to innovation.....	31
Literature and References.....	33

A Word From the Publisher

The EEI now launches a new publications series, devoted to the values of free enterprise, free competition and free innovation. The aim is to inspire policymakers in Europe, as well as public opinion, by presenting well-founded facts and arguments.

The concepts of free enterprise, free competition and free enhanced innovation should not only be reserved for the business sector. Indeed, these are important features for all of society, and not only because business is the source of prosperity.

Many parts of society would benefit from more enterprise and competition, such as product markets, education and health care. In fact, these are forces of wealth creation wherever they are applied. Free competition spurs improvements in supply, quality and price.

This series follows logically our most recent publication, *What Competition Has Done For Europe*. That was a response to the question posed by French President Nicolas Sarkozy, and described the great consequences of competition for the European society.

Europe needs much more enterprises, more start-ups and freer competition in several areas. This first publication is devoted to describing the importance of competition for innovation.

Editor-in-chief of the new publications series is Johnny Munkhammar, Research Director at the EEI, and author of *What Competition Has Done For Europe*.

By initiating the new publications series, the EEI increases its intellectual production – and the design has been modernized. Comments and viewpoints are very welcome.

Peter Jungen
President, European Enterprise Institute

Foreword

Innovations have always been of great importance for society's progress and indeed wealth creation. The importance of railroads for industrialization or Henry Ford's factory organization for mass production can hardly be overestimated.

But innovations mean so much more than just economics or machines. Innovations come from ideas and they may improve many parts of society. Logistical innovations can improve access and marketing innovations can increase information, for example.

In recent years, many have stressed the need for more creative and innovative societies, since that leads to improvements. The old is replaced by something new and better. But which are the conditions that should be in place for society to be innovative?

Free enterprise, free competition and research and development (R&D) seem to be very important. Companies – not least the many new entrepreneurs – try to make new ideas become reality, and when they have to compete to make a profit, they will be innovative.

The creativity that leads to new innovations – goods, services, organizational structures – is a consequence of freedom to conduct research, start companies and to compete. Countries that are innovative are also prosperous.

Innovations and structural changes in the business sector increase productivity, which is the main driver of increased living standards. Productivity growth has been slow in several major European countries in recent decades, which can be explained by too little innovation.

The Lisbon Agenda set the aim for Europe to become the world's most competitive and knowledge-based economy in the world. For Europe to be innovative enough to reach that aim, obstacles to free enterprise, competition and R&D must be abolished.

European countries can learn from each other, looking at success stories and avoiding mistakes. And the EU can continue liberalizations in the single market, not least for services which are in need of innovation, and avoiding new regulations.

In this EEI Policy Paper, Slovenian economist Rok Spruk¹ makes the case for innovation and shows how it benefits from competition as well as R&D, theoretically founded and with several interesting empirical examples.

Brussels, October, 2008

Johnny Munkhammar
Research Director, European Enterprise Institute

¹ Rok SPRUK is an economist and research analyst. His main areas of research include: macro-economics, economic growth, international economics and the application of empirical methods in economic research.

Competition in Economic Theory

“I am not an advocate for frequent changes in laws and constitutions, but laws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths discovered and manners and opinions change, with the change of circumstances, institutions must advance also to keep pace with the times.”

Thomas Jefferson
U.S. President and Founding Father

Competitive markets are situated in the center of economic theory as consumer welfare depends heavily on their development. Economic history has changed the way economists think about competitive markets. Ever since Adam Smith’s publication of *The Wealth of Nations* (1776), it has been recognized that less competition by means of coercion and government involvement in the economy, results in a deadweight loss that is covered by the reduction in consumer budgets. In economics, market competitiveness is measured by the elasticity of demand and supply. In a world of dynamic competition, consumer preferences are grounded on bounded rationality, i.e. each change in product prices is offset by a change in the structure of consumer preferences which are empirically aggregated into the indifference curve.

The role of elasticity of demand and supply is essential in the analysis of market competitiveness

and efficiency because the elasticity, even by mathematical definition, measures the ratio between changes occurred in the two variables. Thus, changes in both – quantity and price – can yield simple and powerful information about the competitive behavior of markets, whether from the aspect of partial or general equilibrium. In economics, the Ramsey tax asserts that the taxation of goods with very low price elasticity of demand causes the least distortion. Thus, the taxation of cigarettes for example would be less damaging than the taxation of wages in the economy. That was also the discovery in economic theory that showed why consumption tax is the least damaging to productive behavior and output activity compared to the taxation of inputs such as labor supply and corporate revenue.

The publication of John Maynard Keynes's *General Theory*, was an important milestone in the interpretation of competitive markets. Keynes believed that market competition is resilient, a proposition which he incorporated into the idea that price signals for labor, capital and technology are insufficient to reflect pure reality. Hence, Keynes argued that wages and prices are sticky and that such damage can be offset by an increase in aggregate demand. Despite the political power of Keynesian ideology, stagflation in the 1970s and the illusion of the Phillips curve in the long-run demonstrated that higher inflation is not the price of low unemployment rate. Rather, Friedman's empirical research showed that the main failure of Keynesian economic policy does not originate from Keynes's *General Theory*, but from the inconsistent observation of economic phenomena and, hence, mistaken beliefs in the ease of application of Keynesian economic policies.

Considering Keynesian economic policy failure to encompass the empirical analysis of macroeconomic activity to derive optimum policies, James Buchanan, Nobel laureate in economics in 1986 noted:

“Furthermore, since World War II, the national economy has never been appropriately described as being in depression of the sort idealized in the elementary Keynesian models. Throughout the three decades of postwar experience, increases in aggregate demand have always been accompanied by increases in price levels, by inflation... There are also obvious and important differences between market and political competition. Market competition is continuous; at each instance of purchase, a buyer is able to select among alternative, competing sellers. Political competition is intermittent; a decision is binding for a fixed period, usually two, four, or six years. Market competition allows several competitors to survive simultaneously; the capture by one seller of a majority of the market does not deny the ability of the minority to choose its preferred supplier.”

“By contrast, political competition has an all-or-none feature; the capture of a majority of the market gives the entire market to a single supplier. In market competition, the buyer can be reasonably certain as to just what it is he will receive from his act of purchase. This is not true with political competition, for there the buyer is, in a sense, purchasing the services of an agent, but it is an agent whom he cannot bind in matters of specific compliance, and to whom he is forced to grant wide latitude in the use of discretionary judgment. Politicians are simply not held liable for their promises and pledges in the same manner that private sellers are.”

Source: Buchanan, *Keynesian Economics in Democratic Politics*, Collected Works, vol. 8, pp. 98-9

By itself, competition in markets with positive externalities and decreasing transaction cost over time is not a zero-sum game. Dynamic competition, where suppliers and demanders react rationally to price changes can be described by fledged and elastic curves of supply and demand. However, there are notable obstacles to free competition. Such obstacles hamper economic freedom and competitive markets since there are numerous obstacles that prevent markets from spontaneous organization and information exchange in a dynamic process of market competition and innovation in a free-market economy. The equilibrium of demand, supply and its relation to cost curves does not capture eventual structural shocks that could be iterated in the permanent equilibrium stability. For example, functions of supply and demand estimated by the use of multiple regression analysis always derive an equilibrium price and quantity.

As unanticipated shocks commonly occur in competitive markets, the relation between variables determining the outcome of supply and demand, changes and permanent equilibrium moves towards a disequilibrium, creating new incentives and dynamics of change and opportunity. Joseph Schumpeter, an Austrian who taught economics at Harvard University, postulated dynamic changes in the economic structure and organization into a “disequilibrium thesis” of creative destruction, meaning that each application of innovation boosts creativity and the growth of entrepreneurial activity, moving markets in an ever-changing disequilibrium. Imperfect competitive markets are a difficult question in economic theory. Normally, the analysis of imperfect

markets is based on a set of assumptions to describe circumstances that surround competitive markets in particular. Imperfect competition may be a transitory market development. However, if a market for particular products and services is made imperfect by discretion and government control over the private economy, then a stationary analysis of imperfect competition tends to indicate monopoly or perhaps oligopolistic market structure. So what is the relationship between innovation and competition? How does competition spur innovation?

The Impact of Competitive Innovation on Welfare

The idea that government should evaluate and direct innovation policy has been quite popular, especially because of strong beliefs in the idea that public funding of knowledge creation implies static returns as well as a competitive transmission mechanism that eliminates a vast majority of negative externalities. Friedrich August von Hayek, 1974 Nobel laureate in economics, wrote that limited knowledge and the price mechanism in the form of information are the two hands that pursue spontaneous market development (Hayek, 1945). Also, it would be a big mistake to believe that government intervention in education and competitive markets could enhance the incentives for innovation. In fact, asymmetric information occurs always when government intervenes heavily. The reason is that government's utility objective is incompatible with entrepreneurial activity. Also, government management of companies, universities, is nothing but the pretence of knowledge as well as the control over knowledge and its application into innovation which is the basis of a dynamic market economy and a driver of employment growth. In Europe, it is widely believed that the European Commission should establish an EU technology institute, similar to the Massachusetts Institute of Technology. Despite the euphoria of overshot expectations, basic economic analysis shows that government-controlled prices have two possible outcomes: (1) shortages or (2) surpluses. The greatest developments of innovation in business have repeatedly flourished with nothing further than entrepreneurial ideas, vision and strategy.

The development of world-class innovations in high-tech and manufacturing does not demand

government direction and coordination of resources but instead, it requires the protection of intellectual property, the enforcement of legal institutions – free markets, the rule of law and limited government intervention in the economy, either by taxes or spending. A closer observation of worldwide phenomena in innovation development and application shows that competitive markets and economic freedom go hand in hand with the development of innovation. From 1890 to 1950, when Sweden’s economy grew tremendously, the development and application of innovation pursued a fantastic course. With low taxes, stable public finances, limited government, a high degree of business freedom and deregulated product markets, Sweden’s standard of living per capita became the world’s highest. During this period, the growth of entrepreneurship and innovation was exponential. Today, a company such as IKEA is the leading innovator in retail furniture supply with cutting-edge novelties in management and organization.

Innovation in logistics and the optimization of supply chains is definitely key to microeconomic competitiveness in the global economy. An example of pioneering innovations in logistics is DHL, one of the world’s leading providers of quick transport routes anywhere in the world. With an increasing use of information technology, the logistical component of competitiveness is becoming increasingly important by both measures – efficiency and cost. Entrepreneurial ventures such as IKEA, Ericsson and DHL did not grow out of government intervention in markets. In fact, such bold decisions would send wrong signals to consumers and producers. Instead, these innovation success stories arose from private initiative and coordination of dispersed knowledge, boosting innovations in marketing, organization, structure and research and development.

The telecommunications industry is also a case in point. In the late 1980s and early 1990s, Finland suffered from macroeconomic instability with spiraling inflation, output decline and double-digit unemployment. Thanks to a policy of macroeconomic stability, reduction in marginal tax rates on income and a credible fiscal policy, output recovery proved strong throughout the following decade. Also, deregulation of business and product markets opened the gate to numerous ideas and entrepreneurial capacity for innovation.

Nokia, one of the world's most competitive companies, was not designed by government discretion and ownership. Instead, strong institutions for private property protection and the enforcement of contracts laid the foundations for the growth of competitiveness and the application of innovations. It is the free-market economy and the discovery of methods to increase consumer welfare that adds competitive value to innovation. It is important to understand that the application of innovation is not confined to the production of goods. In the age of the global economy, an increasing application of innovation in the service sector is vital to firm competitiveness. It would be a big mistake to think that competitiveness is determined by policy engineering such as building parks and granting subsidies to particular industries.

An example of the application of innovations in the new economy comes from Iceland, where reductions in corporate tax rates, fiscal discipline, macroeconomic stability, deregulation of the business environment and the privatization of state industries yielded a decade of high economic growth, stable inflation and decreasing unemployment (Oddsson, 2004). In recent years, many Icelandic banks have been very successful, with, for example, innovative solutions with

recent developments in structural products such as derivatives and fixed-income securities. In the current financial crisis also Icelandic banks are in trouble, but their success has contributed to the Icelandic prosperity increase. Kaupthing, Glitir and Landsbanki – the three largest banking groups in Iceland – are among the largest and most competitive Nordic banks. Until the 1990s, when government ownership of banking industry prevailed, there was no innovation in the supply of structured products. The situation worsened as high inflation reduced depository demand and induced debt default and bankruptcy. Again, it was the competition that spurred innovation and competitiveness in the banking industry, not government policy engineering and market intervention. As the current financial crisis passes, they can resume their successful development.

As a result of investing in innovation, Kaupthing received two distinguished awards. In 2007, Euromoney named Kaupthing the best in the Nordic region and Iceland. In the same year, Kaupthing received an award from Global Finance, being named the Best Trade Finance Bank in Iceland. Innovation in the service sector is the principal component of the new economy – since information and cutting-edge competition for innovative solutions in services is the main driver of dynamic competitiveness.

New York City Harbor is another example of how the new economy benefits living standards, human capital and labor supply. Prior to the emergence of new economy, the harbor was marred by manual workers, off-loading cargo supplies. Today, New York City Harbor has been transformed by the implementation of IT solutions. As a result, the off-loading of cargo is now

managed by professionals with degrees in mechanical engineering. As a result, the productivity and income levels have strongly increased (Mrkaić, 2001). Competition in new economy is not a race-to-the-bottom as often claimed by advocates of protectionism. Similarly, the argument that the new economy and international competition ship jobs abroad is inconsistent with the real course of the economy. When the famous clothing producer Levi's outsourced its manufacturing jobs to China, anti-globalization advocates claimed that U.S workers would suffer job losses. In reality, Levi's created numerous high-skilled, value-added jobs in the U.S., ranging from sales support and creative solutions to design. As a result, numerous new job opportunities have been created.

Decade-long advancement in manufacturing and services has made restructuring a competitive advantage. As noted by Edmund S. Phelps, the 2006 Nobel laureate in economics:

"...A more innovative economy tends to devote more resources to investing of all kinds--in new employees and customers as well as new office and factory space. And although this may come about through a shift of resources from the consumer-goods sector, it also comes through the recruitment of new participants to the labor force. Also, the resulting increase of employee-engagement serves to lower quit rates and, hence, to make possible a reduction of the "natural" unemployment rate."

"Thus, high dynamism tends to bring a pervasive prosperity to the economy on top of the productivity advances and all the self-realization going on. True, that may not be pronounced

every month or year. Just as the creative artist does not create all the time, but rather in episodes and breaks, so the dynamic economy has heightened high-frequency volatility and may go through wide swings. Perhaps this volatility is not only normal but also productive from the point of view of creativity and, ultimately, achievement.”

Source: Edmund S. Phelps, Dynamic Capitalism, Wall Street Journal, October 10, 2006

One of the most fundamental questions in economic theory is whether innovation should be subsidized. The answer is no. A dynamic and innovative economy needs no subsidies, since the comprehensive search for and implementation of applied solutions is the task of entrepreneurs – those who know market opportunities and information on the most appropriate level. If subsidies were allowed, they would have a most discouraging effect on innovation. Looking back, the most successful examples of innovation have emerged where there was no government interference but a strong element of entrepreneurial ideas. It was not government that founded Google. Nor did government management of the economy produce cutting-edge innovation such as Apple’s new version of the iPod.

Government management of the economy, pervasive in Continental Europe’s doctrine of “national economic interest”, would never be able to develop solutions such as Google’s new Chrome web browser. The reason is that nobody knows better what to produce and how to produce than entrepreneurs. The negative impact of government involvement may be shown by comparing Trabant and BMW. Trabant was produced in East Germany by old machines while BMW was produced in West Germany and it emerged as a highly successful and lucrative global

trademark sold all over the world. Trabant, for example, took 21 seconds from 0 to 100 kmh. It produced a skyrocketing amount of pollution – nine times the amount of hydrocarbons and five times the carbon monoxides of the average European car in 2007. On the other side, the innovation invested in BMW by private entrepreneurs yielded great consumer welfare to millions around the world. For example, BMW Z8's engine capacity is superior, taking 4,7 seconds to reach 100 km/h with cutting-edge design and efficient transmission.

If government intervention in product markets were efficient and productive, then hybrid engines such as used in Lexus cars, would yet be manufactured by North Korea, Cuba or, previously, East Germany. The reason why government regulation of product markets with no negative externalities results in no innovation lies in the fact that any regulation not based on cost-benefit analysis leads to inefficiencies and negative outcomes.

In Slovenia, where government has been exercising protectionism in infant industries, subsidies have been attempted to protect jobs. Thus, the sectors granted a privilege of protection against competition have produced practically no innovation. As a result of decades of state protectionism, government monopolies and cartels have set implicit price and entry barriers that disable the growth of competition. Thus, state-run companies in Slovenia offer inadequate supply, charge high prices and lag behind in innovation. According to the World Economic Forum, Slovenia ranks 110 in legislation for foreign direct investment (FDI). The idea that government should maintain control over the economic activity carries a price. Neither the welfare state nor government involvement into the private sector has increased consumer welfare more than entrepreneurial knowledge of innovation and creative solutions that brought prosperity to billions.

The Empirical View of Innovation

As we know from empirical literature, foreign direct investment has a strongly positive effect on economic growth mainly due to spillover effects, know-how and innovation in management, company organization and marketing and supply-chain. In empirical terms, the role and structure of financial markets should not be neglected. Alfaro, Chanda, Kalemli-Ozcan and Sayek (2006) showed that local financial markets play a vital role in promoting foreign direct investment and innovation through backward linkages that promote positive spillovers on local and regional markets. The authors found that, at constant foreign direct investment, well-developed economies experience growth twice as fast as the economies with inadequately developed local financial markets. Also, an increase in FDI leads to additional demand linkages that are a potential source of innovation.

Decades of empirical development and observation of shocks and fluctuations have proven that technological innovation is the main engine of economic growth. In 1956, Professor Moses Abramovitz of Stanford University measured the growth of income per capita in the U.S economy. Until that time, there was a widely recognized tautology that output growth resulting from innovation is an exogenous variable and, hence, an unexplained phenomenon. Professor Abramovitz measured the growth of output in the U.S between 1870 and 1950. At the same time, he measured the growth of inputs in the same period to test whether input-output thesis of economic growth could have been proven historically. The result was rather spectacular. Professor Abramovitz found that only 15 percent of output growth can be explained by the growth of inputs. Therefore, 85 percent of all output growth was unexplained. Historical

economic development of business cycles has confirmed that existing methodologies of growth measurement were incompatible with ways of explaining output phenomena.

There were also similarities when the IT revolution swept the economy in late 1970s. The application of IT at first seemed a paradox as productivity growth lagged behind real productivity growth prior to the emergence of IT. The application of IT fundamentally changed the input-output ratio, but empirical measurement denied any effect on productivity growth from IT. Investment in human capital, corporate structure, incentives, labor supply and organization has slashed the quantitative use of inputs to record lows, while output increased sharply in recent decades. Brynjolfsson and Hitt (2003), using panel data from 527 U.S firms between 1987-1994, explored the productivity paradox, showing that the application of innovative solutions on firm level is a time-consuming process that involves complementary investment in organizational resources, leading to short-run productivity gaps, while in the long run, stable productivity growth realizes the returns from IT investment. It would be wrong to assume that investment in innovation leads to fewer jobs and decreasing living standards. True, the standard of living is determined by the productivity growth rate, but the realization of returns from innovation is stable in the long-run. Meanwhile, it would be doubtful to use short-run fluctuations as an explanatory variable over the long run.

Several empirical studies have estimated the effect of IT on real productivity. Morrison and Brandt (1984) found that the marginal benefit of each USD invested in IT is 80 percent. Siegel and Griliches (1992) showed that industries using innovation through IT tend to be more productive while government data is significantly unreliable as the measurement of innovation

effects on output and real productivity is unreliable using government data to explain innovation phenomena. MacCormack, Forbath, Brooks and Kalaher (2007) explained that innovation management requires global collaboration and that many management teams mistakenly believe that cost reductions, the lack of collaboration and its linkage capacities will build successful collaboration in innovation, resulting in the growth of real productivity.

R&D Innovation and Economic Growth: An Integrated Perspective

Following the empirical observation of dynamic changes in the new economy, there is a challenging question whether R&D expenditures and subsidized innovation lead to economic growth or not. Ulku (2004) started to explore the question by the empirical analysis of the effect of R&D and innovation on economic growth in 10 OECD and 20 non-OECD countries. The author found a positive correlation coefficient between real GDP per capita and innovation in observed countries. Mate and Hernandez Rodriguez (2008) explored R&D investments in Spanish manufacturing industries and showed that returns to R&D are subject to firm-level evidence – firms that launch R&D investment in a continuous way also have higher rate of return to R&D investment. As we have seen, the productivity estimates and rates of return on investment in innovation are subject to specific developments at the level of the firm.

Top 10 Global Companies by R&D Investment

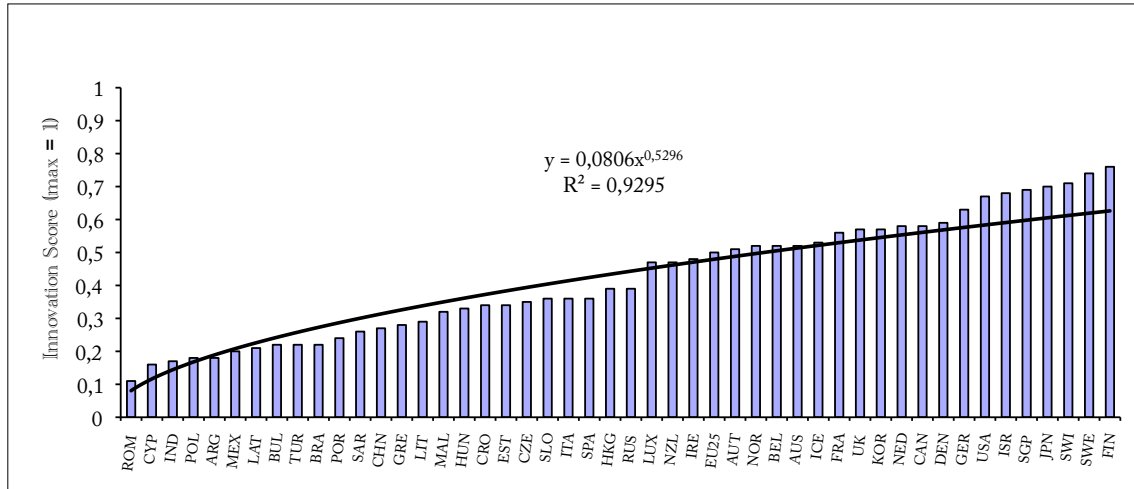
Company	Country of origin	R&D Investment (£m)
Pfizer	U.S	3.882,59
Ford Motors	U.S	3.678,83
Johnson & Johnson	U.S	3.640,41
Microsoft	U.S	3.638,36
DaimlerChrysler	Germany	3.526,48
Toyota Motor	Japan	3.484,71
GlaxoSmithKlein	UK	3.457,00
Siemens	Germany	3.384,99
General Motors	U.S	3.372,16
Samsung Electronics	South Korea	3.139,72

Source: BERR

Innovation ultimately depends on management practices, entrepreneurial culture and business environment, including the development and dynamics of local financial markets and access to infrastructure, human capital and labor supply. A study by economists Bloom and Van Reenen (2007), exploring management practices in Europe and the U.S., found that U.S. firms are, on average, better managed than European ones, scoring high on profitability measures, real labor productivity, human capital development, sales innovation, incentives and innovation in services and manufacturing. The evidence of innovation from firm-level data is in a parallel with the assumption that innovation is a major engine of competitiveness in a new global economy. Also, the evidence shows that innovation and competitiveness are microeconomic phenomena, resulting from incentives and fluid business environment with enhancement of financial market structure, demand linkages and locational quality. Low average and marginal tax rates on income-based productive behavior, indeed, affect the size and distribution of innovation through incentives.

In fact, incentives are among the most powerful firm-level features of innovation and competitiveness. It is no surprise that flexible product and financial markets are positively correlated with the scope of innovation. Freer product markets provide better information, and thus, better incentives to innovate. The deregulation of financial markets is an essential component of venture entrepreneurship – the most frequent step toward the application and development of innovation. The picture shows global innovation performance, measuring five main engines of innovation: innovation drivers, knowledge creation and diffusion, patent applications and the protection of intellectual property.

Global Innovation Scoreboard 2006



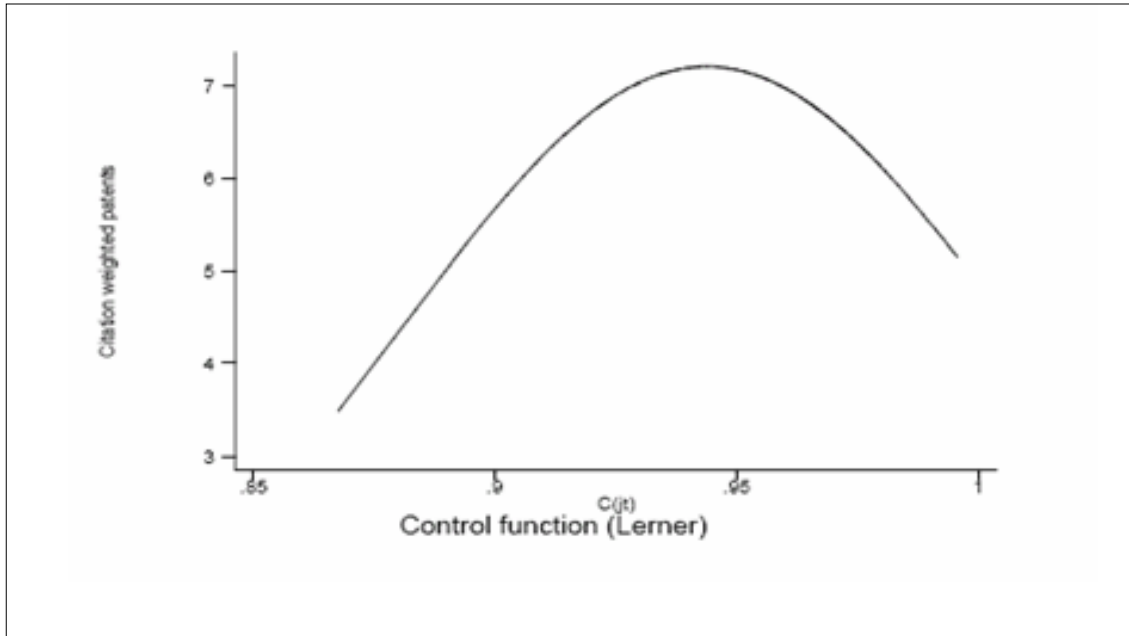
Source: European Innovation Scoreboard 2006, author's estimation

For brief analytical purposes we added a potency trend line into the bar chart to show the movement of innovation score in the observed countries. It can be seen that 92 percent of the total variance of endogenous variables can be explained by changes in the innovation score. According to the European Innovation Scoreboard, Sweden, Finland, Denmark, Switzerland and Germany are leaders in Europe in terms of knowledge creation, patent applications and R&D efficiency.

The research study Howitt, Aghion, Griffith, Bloom and Blundel (2005) on competition and innovation discovered industry-level effects of innovation through changes in the level of

competition. The authors discovered the so-called inverted U-curve that is highly relevant for explaining innovation phenomena over time. When competition is weak, there is a high potential of innovation, mainly due to discovery effects and returns of scale. When the competition is intensive, there are no significant increases of innovative activity. Importantly, the empirical evidence suggests that innovative capacity is the highest when there are competitive markets and dynamic competition. In practice, foreign direct investment induces spillover effects in innovation and other competitive areas that boost productivity growth. Thus, an increase in competition stimulates innovation, because firms are stimulated by the escape effect, resulting in decreasing average cost per unit of output. Even through the U-curve indices the conclusion that more competition results in less innovation and that there is “optimum” scope of innovation, it must be confirmed that the extent of innovation changes through time which is not a result of market failures, but rather a result of dynamic changes in market structure, demand linkages and competitive mechanism of firms. It is not because “competition is harmful for innovation” but simple because the market-clearing price mechanism and competitive means leave few incentives for laggards to catch up with innovation leaders.

The inverted U-curve



Source: Howitt et al (2005)

However, a case study from the Dutch retail industry (van der Wiel, 2006) shows a positive correlation between competition and innovation. The relationship between competition and innovation in service and information-exchange sector of the economy is less sensitive to R&D expenditures, knowledge diffusion and application costs. Since cost is not the main mirror of efficiency and quality in innovation, incentives for innovation in organization and its subfields may not be reduced as in the case of R&D and technological innovation, but ought to show a

slightly positive correlation. The effects of innovation can be divided into two fields: (1) static effects and (2) dynamic effects. Static effects are related to cost reductions that result in lower price margins and fewer inefficiencies while the most powerful dynamic effect of innovation is that the latter enhances productivity growth and, consequently, the growth in the standard of living.

Removing Barriers to Innovation

Modern macroeconomic and microeconomic literature recognizes the importance of innovation in the course of economic growth. In a microeconomic perspective, innovation is an essential competitive advantage in the global economy. There are, of course, several determinants of the microeconomic type of innovation such as cost, quality, strategy, organizational structure, marketing, logistics, supply-chain, sales promotion and product differentiation. In empirical terms, firm-level innovation induces change through creative destruction, where new competitive models of structural change in product marketing, management, communication, logistics and product differentiation/diversification are introduced. Thus, a more creative and innovative microeconomy is the life-blood for future growth in the standard of living, with endless innovation experiments in production and company structure being the wheels of competitive advantage. Also, innovation and creativity require new skills, knowledge creation and collaboration.

The economic history of innovation teaches us that many fears of innovation as “job demolisher” were groundless or based on false assumptions. In fact, innovation propelled the growth of the new economy, real productivity and the standard of living. Beginning in the previous decade with the work of Aghion and Howitt (1992), the macroeconomic perspective of innovation was introduced. Like technological change, innovation is an essential part of endogenous growth model where economic growth is a result of dynamic changes that boost returns from innovation and, consequently, the growth of output.

There are numerous barriers to innovation such as rigid product, labor and financial markets.

Rigid labor markets hinder the application of innovation through skilled labor force. The most fatal consequence of labor market rigidity is a decrease in living standards and stagnation in human capital creation, as high marginal tax rates on labor discourage real productivity growth and human capital creation. Knowledge creation and the protection of intellectual property rights are therefore essential to innovation. Innovation in knowledge creation requires flexibility and adaptability to new discoveries in knowledge and its application. Innovation is significantly important to growth. It is also a powerful instrument of entrepreneurship and a wealth-creating engine. It is an essential and central issue of prosperity. It does not require government intervention such as state ownership and control of enterprises or subsidies. Last but not least, its success is determined by knowledge and freedom of enterprise and trade.

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In recent years, many have stressed the need for more creative and innovative societies, since that lead to general improvements and increased prosperity. But which are the conditions that should be in place for society to be innovative?

Free enterprise, free competition and research and development (R&D) seem to be very important. The creativity that leads to new innovations – in goods, services or organizational structures – is a consequence of freedom.

The Lisbon Agenda set the aim for Europe to become the world's most competitive and knowledge-based economy in the world. For Europe to be innovative enough to reach that aim, obstacles to free enterprise, competition and R&D must be abolished.

In this EEI Policy Paper, Slovenian economist Rok Spruk makes the case for innovation and shows how it benefits from competition as well as R&D, theoretically founded and with several interesting empirical examples.

