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Boyan Jovanovic: recipient of the 2019 Global Award for Entrepreneurship Research

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Abstract The 2019 Global Award for Entrepreneurship Research has been awarded to Professor Boyan Jovanovic at New York University in the USA. Boyan Jovanovic has developed pioneering research that advances our understanding of the competitive dynamics between incumbent firms and new entrants, entrepreneurial learning and selection processes, and the importance of entrepreneurship for the economy. Key perspectives in his research are that the entrepreneur makes employment choices based on the comparative advantage of his or her skills and that entrepreneurial firms are vehicles of technological change and knowledge diffusion that influence industry dynamics and, in turn, economic growth.

Keywords Global Award for Entrepreneurship Research · Entrepreneurship · Entrepreneurial learning · Selection · Competition · Industrial dynamics

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1 Introduction

The 2019 Global Award for Entrepreneurship Research has been awarded to Professor Boyan Jovanovic at New York University in the USA. He has provided original and significant contributions in at least three areas: why some people become entrepreneurs, the competitive dynamics between incumbent firms and new entrants, and the importance of entrepreneurship for the economy.

A major contribution of Jovanovic's research is the integration of entrepreneurship into dynamic mathematical models and general equilibrium analyses of the labor market, thereby incorporating the role of entrepreneurship at a more aggregate level. In addition,

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professor Jovanovic has provided important results on fundamental topics related to occupational choice, entry, exit, learning among firms, technology diffusion, income distribution, and economic growth.

Jovanovic's work explains the role of entrepreneurial entrants in exploring new ways of producing and distributing goods and services in a setting in which they do not know how competitive they are until they start operating. Over time, efficient new firms learn, survive, and grow, while inefficient firms fail, improving the average efficiency of surviving firms. Thus, Jovanovic links entrepreneurial endeavors to how industries are organized and evolve as well as to macroeconomic outcomes, thereby enriching our understanding of the entrepreneurial function in the economy.

One of Jovanovic's outstanding insights concerns the complex interdependencies between labor market sorting, through which some individuals become entrepreneurs and others become employees, and knowledge allocation under conditions of uncertainty and asymmetric information. In a series of papers, he also shows that the outcomes of such processes influence innovation, technological change, industrial churning, the distribution of human capital, and growth. None of this, according to Professor Jovanovic, would have happened without entrepreneurs.

This article provides a broad overview of professor Boyan Jovanovic's contributions to entrepreneurship research.

1.1 The global award for entrepreneurship research—a brief background

The Global Award for Entrepreneurship Research was initiated in 1996 and has since become the most prestigious prize in entrepreneurship research. It consists of 100,000 Euros and a statuette designed by the internationally renowned Swedish sculptor Carl Milles.

According to the original statutes, the award should be given to "a person who has produced scientific work of outstanding quality and importance, thereby giving a significant contribution to theory building concerning entrepreneurship and small business development, the role and importance of new firm formation, and the role of SMEs in economic development." The main aims of the award are (1) to highlight the importance of research produced in the areas of entrepreneurship and small business, (2) to further stimulate and promote research within these fields, and (3) to diffuse state-of-the-art research among scholars, practitioners, and people involved in small business development.

The domain of entrepreneurship research is broad (Carlsson et al. 2013), which means that entrepreneurship research that can be considered for the award is undertaken in several different disciplines, including economics, management, sociology, history, business administration, geography, and psychology. Any aspect of entrepreneurship research is eligible, including the environment and the organizations in which entrepreneurship is conducted, the character of the entrepreneur (personality, cognitive, and affective aspects), or the role of the entrepreneur and/or the entrepreneurial function in a wider sense (at the level of the community, region, country, or industry). One ambition of the Prize Committee is that the award-winning contributions, seen together over a longer time span, reflect the extraordinary breadth of entrepreneurship as a research field in the social sciences.

The key criteria for prize-worthy contributions are originality and influence (Braunerhjelm and Henrekson 2009). It is recognized that contributions can be influential in many ways. A contribution can, for example, be influential because it has had a significant impact on subsequent scientific work, furthered entrepreneurship as a field (through creating important data bases or by starting influential journals, scientific communities, etc.), furthered entrepreneurship education and training at the academic level, and/or influenced policy making and society more broadly.

When selecting prize-worthy contributions, the prize committee emphasizes the qualitative aspects of the contributions of candidates. Quantitative metrics, such as citation counts and impact factor–adjusted publication volumes, do provide important information about candidates, but they will never replace qualitative judgment. This means that quantity will never substitute for quality, and it is even possible for a scholar to receive the award for a single landmark contribution.

1.2 A short biography of the 2019 award winner: Boyan Jovanovic

Boyan Jovanovic is Professor of Economics in the College of Arts and Sciences at New York University. He obtained his undergraduate and master's degree in Economics from the London School of Economics in 1972 and 1973, respectively. In his master's degree, he specialized in the theory of decisions.

In 1978, he obtained a PhD in Economics from the University of Chicago where he worked with Nobel

Laureate Robert Lucas Jr. as his academic advisor. In Chicago, he was exposed to ideas and methods that eventually led to his research on entrepreneurship.

After graduating, Professor Jovanovic spent time at Columbia University and at Bell Lab in New Jersey. Since 1983, he has been on the Faculty at NYU and has also held visiting positions at SUNY Stonybrook, the University of Pennsylvania, and the University of Chicago. Since 1984, he is affiliated with the National Bureau of Economic Research. He is also a Fellow of the Econometric Society and of the American Academy of Arts and Sciences.

Professor Jovanovic is the author or coauthor of more than 100 articles in leading peer-reviewed academic journals and working paper series, in addition to books and book chapters.

2 Contributions to entrepreneurship research

Boyan Jovanovic has made pioneering research that advances our understanding of the competitive dynamics between incumbent firms and new entrants, entrepreneurial learning and selection processes, and the importance of entrepreneurship for the economy. His contributions to entrepreneurship research can be categorized into three areas:

(i) why some people become entrepreneurs, (ii) the competitive dynamics between incumbent firms and new entrants, and (iii) the importance of entrepreneurship for the economy.

2.1 Why do some people become entrepreneurs?—risk bearers and occupational choices

Why do some people become entrepreneurs? Boyan Jovanovic has contributed to our understanding by analyzing the labor market sorting of individuals with heterogeneous human capital. The basic premise is that the interplay of supply (individual choice) and demand (e.g., employers' search for skilled personnel) in the labor market matches and sorts individuals on the basis of their human capital. Match quality is unknown *ex ante* to employment, i.e., match quality is an "experience good" in the sense that it needs to be experienced to be evaluated. In the short run, mismatching is possible which may lead to employee turnover (Jovanovic 1979a, b, 1984, 1994). At the same time, individuals learn and adapt to technologies (Jovanovic and Nyarko 1995, 1996; Jovanovic and Moffitt 1990), and the processes of matching, turnover, and learning lead to human capital formation. Within this context, some individuals become entrepreneurs. In one of his most cited papers, Boyan Jovanovic investigates the role played by liquidity constraints in the choice of becoming an entrepreneur.

Indeed, in Evans and Jovanovic (1989), the authors investigate whether liquidity constraints are binding and cause the number of workers who opt for self-employment to be sub-optimal. Until then, the occupational choice literature (i.e., Johnson 1978; Miller 1984) had implied that because of the risk attached to entrepreneurship, younger individuals would be more likely to enter entrepreneurship than older individuals. This, however, was inconsistent with findings by Evans and Leighton (1989) who found no risk-age relationship. In the attempt to reconcile this inconsistency, Jovanovic and his coauthor hypothesized that liquidity constraints could be a significant barrier for people trying to start a business. That being the case, the inconsistency in previous results would be explained because entrepreneurship would not be a good option for younger people who would not have had enough time to build up capital and would face difficulties in borrowing funds.

To make their case, Evans and Jovanovic develop a model of entrepreneurial choice where the tightness of the liquidity constraint is a key parameter. They then test the model with data and show that there exists a positive correlation between the probability of starting a business and assets, but only if the individuals are liquidity constrained. This means that a wealthier individual can start a business with a more efficient level of capital, thereby obtaining higher returns than a poorer individual. A direct implication of their results is also that the correlation between entrepreneurial earnings and initial assets is positive, since wealthier individuals will have started businesses with the appropriate (more efficient) levels of capital. Importantly, only individuals with high ability and low asset are affected by the wealth constraint. Unfortunately, however, these are the individuals more likely to want to switch to entrepreneurship since, given their high ability, they can earn more in self-employment than in paid employment. The more general implication of Evans and Jovanovic (1989) is that liquidity constraints are indeed binding and reduce the amount of capital flowing to entrepreneurship in two ways. First, they prevent some individuals from trying entrepreneurship to begin with. Second, being constrained, those individuals who do try entrepreneurship use less than the optimal amount of capital which, in turn, leads to less efficient businesses.

Furthermore, because liquidity constraints are shown to be binding, Evans and Jovanovic view their results in the light of the long-standing debate between Knight's view of a risk-bearing entrepreneur and Schumpeter's (1934) view that capital markets allow for the separation of the entrepreneurial and capitalist functions. In fact, they interpret their results as providing support for Knight's (1921) argument that bearing risk is one of the essential characteristics of entrepreneurs who are forced by the market to internalize the costs of moral hazard and adverse selection problems.

Jovanovic's work on occupational choice also includes the analysis of the heterogeneity of human capital and labor skills. For example, in a 1994 article, he analyzes how individuals allocate their talent between managerial and waged labor, and where alternative conditions in the labor market may cause a suboptimal allocation of talent to emerge. He shows that the best potential managers will end up as wage workers because of their inability to extract appropriate rents for their efforts. This is an important contribution because most of the analytical frameworks up to that point treated workers as interchangeable units of labor. After the idea of talent heterogeneity was introduced, economists began discussing the alternative role played by different types of skills and experiences which eventually lead to Lazear's "Jack's of all trade" argument.

2.2 The competitive dynamics between incumbent firms and new entrants: entry, exit, and industry dynamics

Jovanovic has also contributed significantly to our understanding of how competitive dynamics between firms in an industry as well as how technological knowledge and its diffusion emerge endogenously. His most cited paper, published in *Econometrica* 1982, addresses the issue of industry dynamics (Jovanovic 1982a). The paper is a theoretical contribution based on a mathematical model of firm entry and exit in which he provides a theory of selection with incomplete information in which efficient firms would grow and survive whereas inefficient firms would decline and fail.

The crucial feature that allows Jovanovic's model to characterize empirical observation more accurately than previous models is that costs are randomized and, therefore, differ across firms. In his model, firms do not know exactly what their true costs are until they are operating in the market. Once in the market, firms are able to update their beliefs as new information becomes available. If a firm revealed costs are low, it is likely that that firm will survive. If they are high, the firm will exit. At the beginning, firms operate in a competitive environment and, as a result, prices are known. Thus, entry, production (i.e., size), and exit decisions are made on the basis of efficiency (i.e., revealed costs). In the model, firms differ in size because some are more efficient than others and the varying distribution of efficiency gives rise to entry, growth, and exit.

Since the efficient survives while the inefficient fails, the average efficiency of the survivors improves over time. A further important implication of the model is that firm size and concentration are positively related to rates of returns, and that a higher concentration is associated with higher profits for larger firms, but not for smaller firms. This is the case because concentration is an indicator of high efficiency variance. Thus, larger firms that survive earn higher profits and smaller firms that survive have higher and more variable growth rates but are more likely to fail. In general, firms that fail are exactly those that would have grown more slowly. These results are consistent with the empirical observation that, within industries, smaller firms tend to grow faster than large firms but are also more likely to fail.

The 1982 paper lacks innovation in the system, which implies that an important function of smaller and newer firms is neglected (Acs and Audretsch 1988). In Jovanovic and MacDonald (1994a), the authors build on the industry life-cycle work by Gort and Klepper (1982) and Klepper and Graddy (1990). They posit that dramatic industry shakeouts that tend to occur in the life cycle of many industries emerge from the introduction of a radical innovation that firms try to implement in the attempt to remain competitive. Those that succeed survive and grow, those that do not, exit. Technological improvements reduce production costs but, in doing so, cause a shakeout and contribute to increasing the optimal size of the firm. Over time, the number of firms in the industry decreases. The technology-based explanation for shakeouts is compelling because it shows that the early adoption of innovations may not only offer great rewards but also create dramatic discontinuities. Such a result is also clearly important in pointing out the important role played by entrepreneurial firms throughout the industrial cycle.

The important role played by entrepreneurial firms in industry dynamics emphasized in Jovanovic and MacDonald (1994a) is further investigated in Jovanovic and Rousseau (2014) and in Jovanovic (2001). In the latter, in particular, Jovanovic presents some descriptive historical evidence and notes that the average age of companies

listed on the stock market (including very large ones) has been declining and that, as for any population, the birth rate of new capital needs to increase if we are to maintain the existing levels of capital stock. On p. 55, he writes "It is clear that we are entering the era of the young firm. … The small firm will thus resume a role that, in its importance, is greater than it has been at any time in the last seventy years or so."

2.3 The importance of entrepreneurship for the economy

Boyan Jovanovic's research has also significantly improved our understanding of technological change and the entrepreneurial function in the wider economy. Specifically, Jovanovic has analyzed the impact of technology diffusion and human capital allocation across different types of employment, and on how alternative joint distributions of skills and technology explain income and growth differences across countries. A main perspective in this work is that one important role of smaller firms and entrepreneurs rests with their role as vehicles for the allocation of human capital and technological change. Those, in turn, produce the industrial churning which determines the rate of economic growth (Greenwood and Jovanovic 1999; Hobijn and Jovanovic 2001; Benhabib and Jovanovic 1991; Jovanovic and Lach 1997; Jovanovic 2009; Eeckhout and Jovanovic 2012).

In Jovanovic (2009), he argues that the distribution of skills is heterogeneous across agents and that agents with low skill levels prefer to use old technologies because they are less costly for them. Specifically, Jovanovic develops a model which accounts for a variety of technologies of different vintage. Learning by doing (primarily in the research sector) produces new technologies. The complementarity between skills and technological sophistication matches agents with low skills to old technologies, and agents with high skills to new technologies. As time goes by, technologies become old and less valuable until they are abandoned. In this set-up, agents with low skills have no incentives to learn new skills. The model endogenizes both technology and skills and shows how their joint distribution explains the cross-section relation between a country's income per capita and the average age of the technologies used by its workers.

In a related paper, Eeckhout and Jovanovic (2012) build and expand upon Jovanovic's earlier research and show that global welfare gains depend positively on the skill heterogeneity of the labor force and on the opportunity for individuals to switch employment and sort themselves into the type of employment that best fits their skills' level. Jovanovic and his coauthor also emphasize the important distinction between managerial and wage work functions broadly defined.

The paper shows how gains from trade relate to the global dispersion of skills, the global diffusion of technological knowledge, and the distribution of workers across occupations. The basic intuition behind the argument rests, in the authors' terminology, on a "span-of-control production technology," where the distribution of skills between managers and workers determines the firm's productivity. High-skill managers are more productive if they command a given set of workers than low-skill managers. Since managerial skills are heterogeneous, but workers' skills are homogenous, the compensation schedule for managers is non-linear in manager skill and linear in worker skill. This compensation structure leads to sorting of higher-skilled individuals into managerial occupations. Because higher-skilled managers generate higher output with the same set of workers, a high-skill economy has a comparative advantage in managerial occupations. With increased openness and economic integration, and consistently with empirical observations, this leads to a disproportionately high-occupational choice of managerial jobs in high-skilled economies.

This stream of work illustrates that in Boyan Jovanovic's research, the allocation of human talent is at the core of all economic phenomena. Nothing happens without the application of human capital to technological improvements and the latter do not propagate without entrepreneurial firms.

3 Summary and conclusion

Boyan Jovanovic's research contributions emphasize that the entrepreneur is a bearer of risk who makes a specific employment choice based on the comparative advantage of his skills and that entrepreneurial firms are vehicles of technological change and knowledge diffusion that influence industry dynamics and, in turn, economic growth.

His research illustrates the key role of entrepreneurs and entrepreneurship all the way from occupational choice to industry dynamics and economic growth. Individuals make employment choices and sort themselves (or get sorted) in various ways in the labor market (Jovanovic 1979a, b; Jovanovic 1984; Jovanovic 1994; Prat and Jovanovic 2014; Dagsvik et al. 1985; Jovanovic 2014). Among them, some become entrepreneurs (Evans and

Jovanovic 1989). This process of sorting and knowledge allocation produces innovation, technological change, and the accumulation and distribution of human capital (Jovanovic and Nyarko 1995, 1996; Jovanovic and Moffitt 1990). While this system is characterized by uncertainty and asymmetric information (Jovanovic 1981; Prat and Jovanovic 2014; Eden and Jovanovic 1994; Jovanovic 1982b), changes in the quantity and distribution of technology and human capital, taken together, influence the ecosystems in which entrepreneurial and established firms compete (Jovanovic and Rob 1989; Jovanovic and Macdonald 1994b; Jovanovic and Rob 1990; Eeckhout and Jovanovic 2002; Jovanovic 2006). Alternative distributions, in turn, are possible because of different amounts and types of investment (Jovanovic and Rosseau 2001; Jovanovic and Szentes 2013). In practice, the unfolding of this system takes the form of firms' entry and exit, where younger and smaller firms compete with incumbents (Jovanovic 1982a; Jovanovic and Macdonald 1994a; Jovanovic 1993; Jovanovic 2001; Jovanovic and Rob 1987; Jovanovic and Tse 2010; Jovanovic and Rousseau 2014). In the end, the allocation of human capital, technological change, and industrial churning determines the rate of economic growth and the distribution of income (Greenwood and Jovanovic 1999; Hobijn and Jovanovic 2001; Benhabib and Jovanovic 1991; Jovanovic and Lach 1997; Jovanovic 2009; Eeckhout and Jovanovic 2012). But nothing of this happens without entrepreneurs.

Boyan Jovanovic is a worthy winner of the Global Award for Entrepreneurship Research.

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References

Acs, Z., & Audretsch, B. (1988). Innovation in large and small firms: an empirical analysis. *American Economic Review, 78*(4), 678–690.

Benhabib, J., & Jovanovic, B. (1991). Externalities and growth accounting. *American Economic Review, 81*(1), 82–113.

Braunerhjelm, P., & Henrekson, M. (2009). Awarding entrepreneurship research: a presentation of the Global Award. *Entrepreneurship Theory and Practice, 33*(3), 809–814.

Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., & Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small Business Economics, 41*(4), 913–930.

Dagsvik, J., Jovanovic, B., & Shepard, A. (1985). A foundation for 3 popular assumptions in job-matching models. *Journal of Labor Economics, 3*(4), 403–420.

Eden, B., & Jovanovic, B. (1994). Asymmetric information and the excess volatility of stock-prices. *Economic Inquiry, 32*(2), 228–235.

Eeckhout, J., & Jovanovic, B. (2002). Knowledge spillovers and inequality. *American Economic Review, 92*(5), 1290–1307.

Eeckhout, J., & Jovanovic, B. (2012). Occupational choice and development. *Journal of Economic Theory, 147*(2), 657–683.

Evans, D. S., & Jovanovic, B. (1989). An estimated model of entrepreneurial choice under liquidity constraints. *Journal of Political Economy, 97*(4), 808–827.

Evans, D., & Leighton, L. (1989). Some empirical aspects of entrepreneurship. *American Economic Review, 79*(3), 519–535.

Gort, M., & Klepper, S. (1982). Time paths in the diffusion of product innovations. *Economic Journal, 92*(367), 630–653.

Greenwood, J., & Jovanovic, B. (1999). Information-technology revolution and the stock market. *American Economic Review, 89*(2), 116–122.

Hobijn, B., & Jovanovic, B. (2001). The information-technology revolution and the stock market: Evidence. *American Economic Review, 91*(5), 1203–1220.

Johnson, W. R. (1978). A theory of job shopping. *Quarterly Journal of Economics, 92*(2), 261–278.

Jovanovic, B. (1979a). Job matching and the theory of turnover. *Journal of Political Economy, 87*(5), 972–990.

Jovanovic, B. (1979b). Firm-specific capital and turnover. *Journal of Political Economy, 87*(6), 1246–1260.

Jovanovic, B. (1981). Entry with private information. *Bell Journal of Economics, 12*(2), 649–660.

Jovanovic, B. (1982a). Selection and the evolution of industry. *Econometrica, 50*(3), 649–670.

Jovanovic, B. (1982b). Favorable selection with asymmetric information. *Quarterly Journal of Economics, 97*(3), 535–539.

Jovanovic, B. (1984). Matching, turnover, and unemployment. *Journal of Political Economy, 92*(1), 108–122.

Jovanovic, B. (1993). The diversification of production. *Brookings Papers on Economic Activity, 1993*(1), 197–247.

Jovanovic, B. (1994). Firm formation with heterogeneous management and labor skills. *Small Business Economics, 6*(3), 185–191.

Jovanovic, B. (2001). New technology and the small firm. *Small Business Economics, 16*(1), 53–56.

Jovanovic, B. (2006). Asymmetric cycles. *Review of Economic Studies, 73*(1), 145–162.

Jovanovic, B. (2009). The technology cycle and inequality. *Review of Economic Studies, 76*(2), 707–729.

Jovanovic, B. (2014). Misallocation and growth. *American Economic Review, 104*(4), 1149–1171.

Jovanovic, B., & Lach, S. (1997). Product innovation and the business cycle. *International Economic Review, 38*(1), 3–22.

Jovanovic, B., & MacDonald, G. (1994a). The life cycle of a competitive industry. *Journal of Political Economy, 102*(2), 322–347.

Jovanovic, B., & MacDonald, G. (1994b). Competitive diffusion. *Journal of Political Economy, 102*(1), 24–52.

Jovanovic, B., & Moffitt, R. (1990). An estimate of a sectoral model of labor mobility. *Journal of Political Economy, 98*(4), 827–852.

Jovanovic, B., & Nyarko, Y. (1995). A Bayesian learning-model fitted to a variety of empirical learning-curves. *Brookings Papers on Economic Activity, Special Issue, 26*(1995), 247–305.

Jovanovic, B., & Nyarko, Y. (1996). Learning by doing and the choice of technology. *Econometrica, 64*(6), 1299–1310.

Jovanovic, B., & Rob, R. (1987). Demand-driven innovation and spatial competition over time. *Review of Economic Studies, 54*(1), 63–72.

Jovanovic, B., & Rob, R. (1989). The growth and diffusion of knowledge. *Review of Economic Studies, 56*(4), 569–582.

Jovanovic, B., & Rob, R. (1990). Long waves and short waves – growth through intensive and extensive search. *Econometrica, 58*(6), 1391–1409.

Jovanovic, B., & Rosseau, P. L. (2001). Why wait? A century of life before IPO. *American Economic Review, 91*(2), 336–341.

Jovanovic, B., & Rousseau, P. L. (2014). Extensive and intensive investment over the business cycle. *Journal of Political Economy, 122*(4), 863–908.

Jovanovic, B., & Szentes, B. (2013). On the market for venture capital. *Journal of Political Economy, 121*(3), 493–527.

Jovanovic, B., & Tse, C. Y. (2010). Entry and exit echoes. *Review of Economic Dynamics, 13*(3), 514–536.

Klepper, S., & Graddy, E. (1990). The evolution of new industries and the determinants of market structure. *RAND Journal of Economics, 21*(1), 27–44.

Knight, F. H. (1921). *Risk, uncertainty and profit*. New York: Houghton Mifflin.

Miller, R. A. (1984). Job matching and occupational choice. *Journal of Political Economy, 92*(6), 1086–1120.

Prat, J., & Jovanovic, B. (2014). Dynamic contracts when the agent's quality is unknown. *Theoretical Economics, 9*(3), 865–914.

Schumpeter, J. A. (1934). *The theory of economic development*. Cambridge, MA: Harvard University Press.