

MULTI-DISCIPLINARITY OF SCIENCES, CURRENT ECONOMICS AND BUSINESS

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ABSTRACT

The issue of multi-disciplinarity in sciences is not only important issue for the various fields of science and knowledge, but also an imperative for the study of Economics and Business in theory and in practice. My views actually stem from a prevalent crisis of confidence in the central tenets of the various scientific disciplines and its impact that has afflicted simultaneously the business and intellectual community all over the world. A universal feeling of frustration and hollowness pervades in most sciences.

KEYWORDS: Multi-disciplinarity, Development of Knowledge, Science, Economics and Business Studies, Economic Downturn

1. MULTI-DISCIPLINARITY AND ITS SIGNIFICANCE FOR THE DEVELOPMENT OF KNOWLEDGE AND SCIENCE

Today, as new needs and professions have emerged, multi-disciplinarity has attracted researchers, students, and teachers alike in an endeavour of connecting and integrating several academic thoughts, professions, or technologies. The concept of multi-disciplinarity has its root in Greek Philosophy and it implies combining of two or more academic fields into one. The Greek historians took elements from other realms of knowledge to further understand their own. It involved creating something new by crossing boundaries, and thinking across them.

Multidisciplinary programmes usually arise from a shared conviction that the traditional disciplines are unable or unwilling to address an important problem. For example, social sciences, such as economics and sociology, pay scant attention to the social analysis of technology. But, with the growing interest in the subject many people have joined such courses that are conducted by scholars coming from varied disciplines.

Multi-disciplinarity may also arise from new research developments such as nano-technology, quantum information processing, bio-informatics, molecular biology etc. Lately, in economics and business studies, the concept of sustainable development has attracted worldwide attention. Since, the concept deals with the analysis and synthesis across economic, social and environmental spheres, experts from various fields have joined the search for eco-econ solutions.

Debate among scholars over the usefulness of multi-disciplinarity continues. While some consider it as a remedy to the harmful effects of excessive specialization, others are worried because most participants in multi-disciplinary ventures are basically trained in traditional disciplines, and thus they fail to learn to appreciate differing perspectives and methods. The simple argument, in such cases, is that a discipline that places more emphasis on quantitative 'rigour' may produce practitioners who think of their discipline as 'more scientific' than others; in turn, professional in 'softer' subjects may associate quantitative approaches with an inability to grasp the broader dimensions of a problem. Furthermore, a multi-disciplinary programme may not succeed because team members remain stuck in their original fields of specialization. The obstacles and challenges faced by multi-disciplinary activities today can be classified as 'professional', 'organizational', and 'cultural'. Supporters and detractors alike, in academic institutions and businesses are faced with a most common complaint that these programmes lack in synthesis. In academic field, for example, multi-disciplinary programmes may generally fail, if they are not given sufficient autonomy.

Resulting from the above difficulties, today many multi-disciplinary research areas are strongly motivated to become disciplines themselves. Examples to cite are: cybernetics, biochemistry, bioengineering, etc. But, let us not forget that when new solutions to problems emerge, much information is fed back to the various disciplines involved. Therefore, multi-disciplinary work may also be considered as complementary.

2. MULTI-DISCIPLINARITY IN ECONOMICS AND BUSINESS STUDIES

In this context, I would like to address two questions: First, who are the economists and what are their duties that they need to discharge in the future; and Second, I want to answer myself as an educationist: what sort of economics and business education is required for economists and managers of the future?

Let me remind that during the last three decades, on the one hand, to no one's surprise, the classical teaching of economics has slowly withered away even in the most prestigious universities on one hand; at the same time, on the other hand, in the US, Europe and Asia there had been a strong surge in admissions to the Business Schools at the cost of pure Economics. If we look at the state of Economics and Business studies, sadly enough, these sciences are ailing today. In the 1980s scepticism engulfed the economic forecasting activity. As the doubts in its accuracy grew, the interest of researchers in pure economics declined. Inside the companies, stress was laid down on focused research. Many companies disbanded their forecasting units. Independent forecasting economic consultancies withered away. Naturally, after thirty or more years, we are asking ourselves as to what has happened to Economics.

My quest for answer takes me back to the history of philosophical and economic thought. From there we learn that the general technique to study the doctrines and philosophers who develop, apply, and discuss the theory is to rely on the tentative results of contemporary economics and on initial judgments concerning the nature and worth of economic theory and economics as a discipline. Economists, usually, talk about their own work in terms of *principles, models, theories, assumptions, and definitions* and make use of previous work by epistemologists and philosophers of science. Let us give the economists same benefit of doubt as we do to the philosophers of science seeking knowledge. However, economists need to trim, revise, and even invent philosophical categories in trying to make sense of economic theory.

Since 1990s, the confidence of American, Japanese and West European corporations in the economic forecasts was badly shaken, because even with the help of sophisticated computer models, Economists had failed to foresee the stagflation of the 1970s and the cyclical trends of the 1980s. The confidence further depleted in the usefulness of Economics as a science for the experts did not accurately predict the consumption pattern of the households or the firms. In the wake of economic shake-up of

1980s and 1990s the reputation of the science has taken the beating. In the mid 1990s some big multinationals in the US started firing their crystal bowl watchers¹. The Swedish Academy of Sciences too recognised this shifting course in Economics by awarding the 1990 Nobel Prize in Economics to Harvey Markovitz, Merton Miller, and William Sharpe.

I should mention here that the macroeconomic models of the 1930s were based on consumption and saving/investment equations. The year following the WWII, were the golden years for such models. For two decades the world recorded high growth rates, but in the 1970s the high hopes were watered down when these models could not foresee the repercussions of the explosive hikes in oil prices. The mainframe computers were fed with known and unknown parameters to produce equations that could be used in justification of proposed growth policies². These models were designed to simulate faster sustained economic growth of the national economies³.

Recession that has afflicted the global economy during last five years, and may even last longer than the mentioned Biblical years, has anew placed Economics in fire. During these five years, economic failures have provoked a lack of confidence in the validity of economic theories and business wisdom. It is being said often among the economists themselves that *few economic bubbles have burst more spectacularly than the reputation of Economics as a science*. While, famous economist, Paul Krugman in 2008, in his LSE lecture, argued that much of the macroeconomics of the past 30 years was *spectacularly useless at best and positively harmful at worst*; Barry Eichengreen, another renowned economist, went on to say that *current economic turmoil has cast in doubt much of what we thought we knew about economics*.

Nevertheless, I would like to add that the troubles of economic science are purely methodological issues and it is in this context that these should be addressed. We should acknowledge that the discussions of economic issues are often biased and distorted because of their importance to interests of individuals and social groups. Economists can, however, address a broader audience and a wider spectrum of issues if they do not start by taking them as the paradigm for what economics should be. Economics must thus struggle to avoid becoming apologetics for any school of economic thought.

History is a witness that, usually, the business cycles have been followed by the reassessments of the economic science. Deep recessions have been followed by negation of the existing orthodoxies giving way to the new. As more than over a century ago, as now, economists seemed to feel that the glaring lack of consensus on fundamental

¹ General Electric, a giant corporation that earned revenue of some 70 billion in 1996 did not employ even a single economist, IBM fired its 'team of economists' in favour of good 'portfolio and risk managers', because as one spokesperson said, 'it is much cheaper for us'. Soon company experts became more concerned with risk management, watching financial derivatives, hedging against price and interest rate fluctuations, inventory management, etc.

² Note that using such models in 1974 the Economic Council of the President of the United States enthusiastically overestimated the economic growth for 3 per cent and underestimated inflation by the same percentage.

³ One worthy author of such models Lawrence Klein won a Nobel Prize for his models in 1980.

principles compromised the scientific status of Economics, and there were strong professional and public pressures to establish new orthodoxies that could speak authoritatively on economic matters.

Now let us now redeem who is an economist in practice? What he does? Is he someone a social philosopher like Adam Smith or an analyst and teacher like Alfred Marshall or a dentist of Keynes's dream? To me, it seems that modern economist is none of the said sort. He is someone – with a little bit of everything – a theoretician, observer/researcher, analyst, diagnostician, policy designer and sometimes one who gets involved in policy implementation. Evidently, such a person would have to be an intellectual giant and could exist only in our minds.

Keynes in his remark on the role of the future of economists was rather sceptic as he thought that economists could manage to get themselves thought of a humble, complete people, on a level with dentists. If so, he said, that would be splendid! Alas, even after eighty years of this remark that has not happened. Today, economists have either been reduced to pure theorists – academics caged in prestigious university campuses, some receiving the Nobel Prize in Economics for their theoretical contributions, or the massive number holding graduate degrees in economics and business working for state or private employers. Except a few, to our regret, the vast majority is neither well averse with real economics nor is able to use the acquired knowledge in appropriate manner. Professional economists have been to their desks doing some routine statistical analyses of little use. Evidently, we have reached nowhere close to Keynes's dream.

Personally, I would like to see my fellow economists of the future in the role of a mechanic – knowledgeable, well-equipped with plenty of analytical tools in his toolbox, capable of fixing the defects in the economic system⁴. I see him well aware of economic doctrine, finance, economic history, mathematics and philosophy. I see him talented in understanding the socio-psychological reactions of the people in face of economic trends, and capable of using appropriate analytical tools. Since, the economic system by nature, like an old car, is prone to frequent breakdowns and cyclical fluctuations, his role as constructor and repairer is of utmost priority. For such a

role, I visualise an apprenticeship in places where economic policy is evolved.

Let me also mention that we do not require an army of economists. Thus, there is no need to enrol a massive number of students in the universities. Educating an economist⁵ of the needed type is not going to be an easy task. While the students will have to be gifted, the teachers would have to be highly qualified and competent and curriculum tough. For a moment, let us not be misled by Keynes's remark that the study of Economics does not seem to require any specialised gift of an unusually high order⁶, instead I would like to cite and agree with him when he writes in his essay *Alfred Marshall* that ...*the master economist must possess a rare combination of gifts*⁷.

I see education as a complex process. As a teacher, I am inclined to believe that education is not only acquiring skill or aptitudes, but it is also about acquisition of attitudes. People need to know not only methodology, but also reality and should be problem/solution driven. They should know the scope as well as the limits of techniques they learn.

Greek philosophers have long back recognised the importance of education of the people. Modern economics, in pioneering work of Theodore Schultz⁸ has recognised the significance of the role that education plays in economic development of a country. Questions are many and open. Should it be general or specialised, scientific or skill-oriented, intermediate or higher, self-paid or state funded, etc? But let us not forget that from a country's perspective and its future, all types of education facilities need to find proper place to suit the public choice. But, at all levels and for every science/art there must be the right type of education. This, moreover, depends upon the choice of curriculum, length of study, intensity of learning, quality of teachers and institutional facilities, etc.

⁴ Economic system should be understood as a compound of institutional framework including economic legislation, economic structure of the society and economic policy of the state.

⁵ I mean here graduate (master) and postgraduate (doctoral) education of 'economists' only.

⁶ Keynes, J. M., 'Alfred Marshall' in his *Essays in Biography*, London: Macmillan (1972). This remark should be taken in context to the then prevailing widespread feeling among the university students and the public that the study of economics, compared to other sciences or law, does not require any pre-requirements and is easy to complete.

⁷ "Is it not intellectually regarded a very easy subject compared with the higher branches of philosophy and pure science? Yet good or even competent, economists are the rarest of the birds". He further adds, He must reach a high standard in several different directions and must combine talents not often found together. He must be mathematician, historian, statesman, philosopher – in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general, and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purpose of the future. No part of human nature or their institutions must lie entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood; as aloof and incorruptible as an artist, yet sometimes as near the earth as a politician." Ibid.

⁸ See his (1963), *The Economic Value of Education*, New York: Columbia University Press; (1971), *Investment in Human Capital: The Role of Education and of Research*, New York: Free Press.

In the 1980s, voices against Economics and the Economists were uttered loudly⁹ and are reflected in an earlier statement of Nobel economist Fredrich August von Hayek that no body can be a great economist who is only an economist..., and (as such he) is likely to become a nuisance if not a positive danger¹⁰. In academia, the pressure for jobs, promotion, tenure and publication in American and British universities grew such that the economists had to cultivate ever narrower fields. The slogan became publish or perish. The result was that the economics students were trained to become narrow specialists without understanding the institutions, the economic thought, the economic literature, the handling and evaluation of quantitative and qualitative data, learning to weigh evidence, and without wider visions.

Lately, with the reform of the education system within Europe, the so called *Bologna Process*, Europe has lost its edge. Unfortunately, as against its age-long tradition and culture, it has followed the poor American example, destroying the very foundations of knowledge. Economics requires broader knowledge. Does this broadening not mean that we have to sacrifice some education in economics that is all the time becoming more and more technical, specialised, fragmented and professional? I am afraid that unless we lengthen the time of study, evidently, some sacrifices in curriculum will have to be made. As far as the question of specialised economics education is concerned, to me it basically relates to business studies. Scholars are saying world-wide that the *specialist knows more and more about less and less until he knows everything about nothing*. The real question is should a well-trained business economist deal with few areas or spread his investigation widely? I feel that it should be left to individual choice.

Since J. M. Keynes published his *General Theory of Employment, Interest and Money* (1936), Economics education in the Western world, particularly in the US, has moved far away from the tradition. Many distinguished economists in 1990s accepted that in the US Graduate (Master) education tools and theory are preferred at the cost of creativity and problem solving. It was also noted that graduate students who come from other fields can get Ph.D.s with little or no knowledge of economic problems and institutions¹¹.

To me, it seems that time has come to reverse the trend. In the light of the above observation, I believe that it would perhaps be right to sacrifice some technical aspects of economics (including some of mathematics) in favour of disciplines like political science, logic, sociology, philosophy and history. Philosophy consists of logic, epistemology, moral and political philosophy. A sound knowledge of logic

and theory of knowledge will make an economist not only good theorist but also teach him to distinguish between, on one hand, tautology and deductions from them, and on the other, empirical facts and their relation. Economics suffers from mistaken validity for truth and the easy transition to falsehood that lies at the alleged rigour and precision of mathematical economics. Conclusion may be valid but untrue. Similarly, a good education in moral and political philosophy would avoid or at least reduce the numerous hidden biases in economic reasoning. The knowledge of political institutions and processes makes the economist aware of the constraints and opportunities for getting policies right. The economists need to take their investigation into the political variables in economic policy, and supplement positive with normative political economy. Further, social, political and economic history is deeply neglected in modern economics education. It hardly needs any argument of defence.

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A widely held criticism of modern American and European education of economics is that it has, unfortunately, become too narrow and too far from reality¹². The Economics Departments in universities are awarding degrees to generations of *fach idiots - brilliant at esoteric mathematics yet innocent of actual economic life*¹³. I would rather agree with my late friend Professor Paul Streeten and *favour being a broad-gauged economist and vaguely right to being precisely wrong*¹⁴. Economics is not a science in which controlled experiments can be conducted and no economic theory has ever been falsified by an experiment.

3. ECONOMIC DOWNTURN AND THE MULTI-DISCIPLINARITY OF SCIENCES

As we all know, the World economy, for a couple of years, is passing through a serious economic recession. Many of its problems are deep rooted and have long been neglected. Problem-fixing solutions have not yet been found. We learn from economic history of some serious recessions in the past¹⁵. Of course, every time the intensity of the economic pain and social cost was different. I have discussed these in of some detail in my key note speeches and papers at Opatija (2010) and Pula (2011) Zagreb (2012) Conferences.

⁹ F.A. von Hayek (1988), in his *The Fatal Conceit*.

¹⁰ F.A. von Hayek (1967), in his *Studies in Philosophy, Politics and Economics*.

¹¹ See Krueger, Ann, et. al., JEL, Vol. XXIX, No.3 Sept. 1991, pp 1035-1053.

¹² Klamer, Arjo and David Colander, (1990), *The Making of an Economist*, Boulder: Westview Press.

¹³ Kuttner, R (1986), "The Poverty of Economics", *Atlantic Monthly*, February Issue, pp 74-84.

¹⁴ Paul Streeten, *American Economics Education*, Mimeo.

In short, I can mention that recessions of the 19th century were acute and lasted long enough to create economic hardships for the ordinary people. Hunger, poverty, unemployment were widespread and the governments made it more difficult by doing little or nothing. The Great Depression of 1929-32 was definitely the worse in the series with deep effects on global economy. Note that each recession and its negative effects have in the past had serious impact on the economic thinking that followed.

Current recession is in no way less severe than most in the past. Most of the recessions have lasted long. The only difference now is that the sustainability of the global world has increased tremendously and that the world can absorb the shocks much easily than ever before. Geographically, Europe is worst hit by it and recovery soon is not in sight as yet.

Let me make a passing comment on the most recent developments in European Union countries. Although, The IMF, The World Bank and the European Bank have reacted to the situation with a bail-out packages. Hardly, any improvement in job creation and GDP growth is visible. Why? *Firstly*, to my mind, the economic DNA of the Southern Euro-zone countries is altogether different than that of the North. While the South basically depends upon the primary sectors, the North relies heavily upon export of industrial goods. Accordingly, there is a great North-South divide in per capita GDP of the countries in the zone. *Secondly*, sticking to a utopian ideal of economic convergence, spill-over effects and automatic evaporation of income distribution gaps through common denominator of money – the Euro, the EU is living under a false hope. It has not happened so far and will not in the near future. It is unrealistic because of the disparity in the terms of trade among the primary, secondary and tertiary sectors within the zone. For this to happen over time, major economic restructuring will have to take place, and the financial costs of this change will be enormously large for which there is no money available in near future. *Finally*, in this very context, let me make another point. In the post WWII era the World in general and the OECD economy in particular, has witnessed an unprecedented economic growth in past history. The Western world, however, has learned to live rather too well, that had unmatched with its labour productivity and sustainability of natural resources. The globalization process that the West has so enthusiastically pushed forward in the 1990s had let loose forces in which the tides shifted to the Eastern hemisphere.

Now a days, every body talks about the rising economic power of the Asian economies. Let us record that in the Asian economies the production, incomes, consumption, investments, employment have rapidly grown over last two decades. Their higher absolute productivity of labour

and the low wage rates has led the OECD countries to gradually bleed for quite some time, and dices are not to likely change in the near future. Some people would like to ask if some more dominos will fall victim to this recession in the East (e.g. Japan, China, India and others). I would say, hopefully yes! Must we worry? No! From history we learn that mankind has always resisted to odds and adapted to the situation. It has also moulded the course of events by making strides in science and technology.

How multi-disciplinarity does come in the picture in current economic context? To my firm belief it is the key to many solutions. We have learned from the past history and everybody acknowledges that progress in science and technology is vital to economic growth of nations. Innovations, inventions and scientific progress, in general, brings in new entrepreneurs in the markets who create new jobs, products, incomes and profits and turn the business cycle in upswing and ultimately recovery and economic growth.

4. CONCLUSION

Finally, we all know that 'knowledge' is a 'stock' (fund) that grows over time. Education is a process of learning and experiments. As there are no boundaries in science, the 'mixing' or the multi-disciplinarity creates new knowledge and new solutions. In times of crisis, by nature, human mind looks for new avenues. So is happening now. Scholars and scientists in the universities, institutes, laboratories; engineers and mechanics in workshops and factories are busy in search for new solutions. Acquisition of interdisciplinary knowledge is an inborn characteristic of human mind, and the scientific progress relies on this very trait. In times of current economic difficulties, it is not only the natural scientists but the economists and business managers too are busy in finding new ways to ride the tide of recovery when it comes. Combined knowledge of different sciences is our future and hope.

LITERATURE

As referred in the foot notes to the text.

¹⁵ In the last 250 years, recessions have caused economic failures and wide-spread misery and destitute e.g. 1750s, 1820s, 1870s, 1880s, 1920s, 1970s, 1990s, and now 2008/12.