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Europe’s Losses of Innovation: The *Individual* as well as *Societal* Harms

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Estimates presented here reveal *large losses* in indigenous innovation among several European nations that were relatively dynamic. I refer to **France**, which had lost almost *all* of its innovation by 1980; to **Italy**, which by 1990 lost all of the innovation that it briefly had in the '60s and '70s – its Economic Miracle; and to **Germany**, which, after regaining in postwar years its rank in innovation (below France but a little above the UK and Italy), slipped back considerably in the '70s. The UK had lost considerable innovation from the late '50s to the end of the '70s, but regained much of that in the late '80s and the'90s. Austria, Holland and Spain had little innovation to lose. My thesis is that the large losses – and the narrowing of the scope for innovating – have serious *ill-effects* on society and *acute ill-effects* on a wide range of individuals. What were these ill-effects?

Recall that the innovations in an economy are contributors to gains in its productivity – to "total factor productivity," which is a weighted average of labor productivity and capital productivity.[2] The magnitude of the innovation going on is *measured* by the size of the productivity gain attributed to it. So, by definition, a "loss" in annual indigenous innovation causes a loss of just that size in annual productivity growth. The *incidence* of such a productivity slowdown is determined by its effects in markets: It slows the growth of wage rates, and as they fall relative to household wealth, the *supply* of labor is contracted; and it slows business investment,

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[1] Read at Day 1 of the conference *The Future of Europe*, Oxford Martin School, 27 April 2016.

[2] Equivalently, it is output per "basket" of labor and capital, as Oxford's Sir John Hicks put it.

which contracts the *demand* for labor. It also depresses interest rates, which hurts younger workers. So employment levels become naturally depressed – without any "deficiency of aggregate demand." In standard models, both developments reduce "economic welfare."

I note in passing that this set of effects from a productivity slowdown does not differ much from the "secular stagnation" that Alvin Hansen was talking about as early as 1934 – years before Keynes's *General Theory* (1937). "[W]hen the volume of savings outruns technological development," he wrote, "investment in new capital falls … creating business stagnation."[3] Stagnation results when productivity slows down or accumulated wealth speeds up. Now working-age population is stagnating!

True, international trade and investment flows serve to *moderate* such developments. Decades ago, Paul Samuelson of MIT found some theoretical conditions for "factor price equalization," but they did not hold empirically. Later, Zvi Griliches of Harvard suggested that Europe escapes the costs of reducing its indigenous innovation through technological transfer. "The Europeans are so smart," he wrote. "[T]hey let the Americans take the risks of innovation, then they copy each year the new products that were successful."[4] Of course, the Europeans might manage in this way to have the productivity *growth rate* of the US, but its productivity *level* would have fallen behind the US level. However, the Americans later suffered their own sharp productivity slowdown around 1970. As a result, the European countries losing much of their indigenous innovation also lost much of the

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[3] Later in the article he spoke of "secular business stagnation." See Alvin H. Hansen, "Capital Goods and the Restoration of Purchasing Power," *Proceedings of the Academy of Political Science*, Vol. XVI, No. 1, April 1934, 11-19. Quoted p. 17 and p. 19.

[4] In another speech, I recalled another version of his remarks: "They have a high standard of living without having to pay the costs of developing new methods and products and without suffering the pain of failure." Shanghai Forum on Innovation, September 12, 2012.

overseas innovation they would otherwise have been able to "import" from overseas. No wonder their productivity growth fell very heavily.

It is also true that some European nations still suffer to varying degree from the financial crisis *on top* of the damage from the secular stagnation. We ought to put this damage in proper perspective, though. Yes, *business investment* as a ratio to the GDP in the EU fell from 7.5 % in 2000 to 5.7% in 2014, a fact Joseph Stiglitz dug out recently.[5] But business investment, even after its decline from the mid-'70s as the productivity slowdowns were taking hold, fell *more* over the next 15 years: in **Italy** from 15.7% in 1980 to 11.3% in 1995, and in **France** from 13.0% in 1980 to 10.9 in 1995.[6] Other measures say the same. The *employment-to-population* ratio among men in **Italy** dropped from around 77% in the early 2000s to around 73% in 2014. But it declined deeply from 87% in the late '70s – when innovation began dying – to 77% around 2000. The *labor force participation* rate in **France** dropped significantly from 87.6% in 2000 to 83.8% in 2014. But the decline was greater from 93.3% in the benchmark year 1973 to 86.6% in the late 1990s.[7] Interestingly, in **Germany** the employment-population ratio started the '70s at 92%, then lost some ground in the '90s with German unification, but climbed back to 89% in 2014 – not far below the level in the '70s.

Do the brighter statistics in Germany and for that matter the UK put the theory in question? No. The UK's estimated annual innovation is *higher* in the recent span 1972-2013 than in the previous span 1946-1972, so from

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[5] The data over the latter span are those given in Joseph Stiglitz, "What's Wrong with Negative Rates," *Project Syndicate*, April 14, 2016.

[6] Data from OECD, Private Non-Residential Investment as a percentage of nominal GDP.

[7] For Italy, see the OECD statistics portal at www.oecd.org, men ages 15-64. For France, see OECD, *Employment Outlook*, July 1996, Table B, p. 188, men ages 25-64. Regarding France, data on the employment-to-population ratio of men for the 1970s are not available. They go back to 1980. The employment-population ratio in France fell from around 82% in 1980-84 to about 77% around 2000.

this perspective it comes as no surprise that Britain is doing better, not worse. And Germany is the continental European country with the *smallest loss* of innovation from the earlier span to the later span.

From these data and other data I infer that the losses of innovation in Europe have brought appreciable declines, relative to trend, both in wage rates available to ordinary workers (relative to trend) and in interest rates available to savers from the ‘70s well into the ‘00s. (Population slowdowns may have contributed to the declines.) These developments have led to heavy reductions in most people’s incomes and wealth – relative to past trends – and in labor force participation rates. The developments mean *diminishing opportunity.* People are forced to take less preferred paths of consumption and leisure.

All that is about the private sector. What about the *public* sector? The great slowdowns brought slowdowns of government revenue, which in turn led to budgetary deficits that are endemic and seemingly endless. The beneficiaries of social insurance and social assistance are threatened. Moreover, the slowdown malady that has hit the once-dynamic nations of continental western Europe is bringing political uncertainty about what can be done and will be done; and this may bring political instability.

Note that *these* ill-effects of the losses in innovation – the “diminishing opportunity” and the public sector problems – are *societal*. The social benefit cutbacks are everyone’s cutbacks. The slowdown of the general level of wages is everyone’s slowdown. But a great many people earn rewards from economic life that are *not societal*. These rewards are very much *individual* – specific to the person gaining them. I see three kinds of individual awards.

As some observers have said – Kenneth Boulding, Tony Blair, Mitt Romney … – a person may value “attainments”: attaining things through one’s own effort and talent. I’ve used the word *prospering* (from the Latin *pro spere*, meaning as hoped, or according to expectation) to refer to the experience of *succeeding* in one’s work: a craftsman’s gratification at seeing his hard-earned mastery result in better work or better terms for the work he does, a merchant’s satisfaction seeing “his ships come in,” or a scholar’s sense of validation from being awarded an honorary degree. By mid-19th century, an English (male or female) might speak of “getting on,” meaning getting somewhere. Even when their ventures failed, they felt good that they were “taking control” of their lives.[8]

Various scholars – Thorsten Veblen, John Dewey, Abraham Maslow… – speak of a person’s satisfactions from using his or her ingenuity and knowledge – his/her workmanship – to solve problems. A person who over a career has the pleasure of developing such capacities is said to be experiencing *personal growth*, or “self-realization.” Though John Rawls did not adopt this view – the workers in his model have only the wage that society determines – he acknowledged that view at the end of his great book.[9]

Lastly, several of the greatest writers and philosophers – Montaigne and Voltaire, Cervantes and Shakespeare, Kierkegaard and Nietzsche – portray a full life – a life of richness – as a personal journey

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[8] These terms are noted in my book *Mass Flourishing*, Princeton, 2013, p. 66.

[9] John Rawls, *A Theory of Justice*, Harvard, 1971. He wrote: “[H]uman beings enjoy the exercise of their realized capacities and this enjoyment increases the more the capacity is realized or the greater its complexity… As [one] learns how to exercise [these capacities], [one] will come to prefer more complex opportunities…A rational plan … allows a person to flourish … as much as he can.” Pp. 428-49. Jean-Paul Sartre, by the way, maintained that a person has no pre-existing “self” that must be “realized.”

into the unknown marked by interior struggle, the fascination of uncertainty and the excitement of "acting on the world." That sort of life is often what is meant by the term *flourishing*.

Obviously, to have such engaging lives, working-age people need more than a secure job at the going wage – work that keeps them busy but gives them little or no autonomy. They need to have *human agency* – to be able to take the initiative, to express their thoughts and explore new paths.[10]

What sort of economy might offer – to a large degree, at any rate – all this prospering, growing and flourishing? Clearly it must be an economy in which the actors are exploring, theorizing, imagining, creating, testing and discovering. I've argued that several Western nations, mostly western European nations, developed in the 19th century just such an economy: an economy full of *entrepreneurial* people – people alert to unnoticed opportunities: searching for better ways of doing things, and exercising their initiative to try out new things; – and an economy full of *innovative* people – people imagining new things, developing new concepts into commercial products and methods, and marketing them to potential. The innovation in the enterprise sector was pervasive – stretching across most industries – and it was inclusive – rising from society's grassroots. You feel the enthusiasm in Lincoln's "young America," in Harold Evans's tales of innovators, Emma Griffin's trove of English diaries and Gershwin's "An American in Paris." They evoke lives of agency and resulting richness.

In the economies that have lost so much dynamism – most acutely, Italy and France – this life of richness seems to me to have largely slipped

[10] I don't know where the term originates. The term had a considerable impact when I used at the March 2015 conference organized by the New York Review of Books Foundation. I just noticed that it is used in *Mass Flourishing*, p. 285, and credited in a footnote to Richard Sennett's book *The Culture of the New Capitalism*, 2006, p. 36.

away: It’s available to fewer and fewer. This loss is very serious – far worse than the slowdown of wages and the fall of interest rates. The fact that Italy and France are at the bottom in “job satisfaction” is, for me, evidence that the Italians and French *badly need* more engaging careers.

What is at stake in continental Europe is *not* so much a return to rapid productivity growth and thus a tight labor market – though consumption and leisure are obviously important to people. What is at stake is a broad return to *modern life*.