Franco: a mind never at rest

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Modigliani was never a 9-to-5 worker. The night he died in his sleep he attended a charitable fundraiser, then stayed up late to dot some 'i's' and cross some 't's'. Intensity was ever his forte and that is why his basic scientific contributions were so many, so diverse, and so *deep*.

Madame Currie received Nobel Prizes in physics and in chemistry. Linus Pauling capped his chemistry prize with a prize for peace. If they had given prizes for vitamin C, he might have received a third one for curing cancer and the common cold. Some great scholars are great for just one thing: Max Planck for stumbling onto quantum mechanics comes to mind and, in economics, Edward Chamberlin was clearly a one-book man. Franco's Nobel Prize stressed his theoretical finance but I can perceive other equally important contributions: intergenerational accounting, macroeconomics, microeconomics, and policy wisdoms.

And what he did, Modigliani always did *his* way. At 20, as a recent immigrant who sold books to finance advanced study, his was not a background from Exeter Academy or New Trier High, or from Harvard, Chicago or MIT. Indeed, at The New School in New York by great good luck he tied in with Jacob Marschak and Hans Neisser, themselves gifts from Hitler to American science. Later, after Franco joined up with Herb Simon at Carnegie Tech, the rest was history.

Gottfried Haberler, recognizing Franco's quantum improvements on Keynes's 1936 Model T *General Theory*, engineered an early call to Harvard. Scouting the mediocrities and bigots then cluttering corners of the Harvard Yard, Franco and Serena politely refused the offer. Strangely, when Harvard later began to get its act together, they let MIT capture the arrived and arriving Franco Modigliani.

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Meanwhile, Modigliani at Carnegie Tech (and during the short-lived renaissance at the University of Illinois) had been publishing profusely on a great variety of subjects – literary and mathematical. This earned him early reputation as a frontier world economist. And, because he was so gifted in finding and inspiring co-authors, his workshops were of the Titian and Rembrandt quality.

A Gilbert and Sullivan patter song could be composed about Modigliani and Grunberg, Modigliani and Brumberg, Modigliani and Miller, Modigliani and Ando, Modigliani and Drèze, Modigliani and Cohen, Modigliani and Sutch, Modigliani and Shiller, even M&M (grandfather and Wall Street's Leah Modigliani). That way a whole generation of leading scholars began as proteges of one Master.

Franco never did really leave Italy. At MIT a revolving circle of Italian graduate students spiced our common rooms. Moreover, Modigliani's advice concerning policy as Italy advanced within the surging European Common Market – when heeded – greatly helped his homeland. To know one country you must know more than one. Modigliani was a deeper adviser on American matters because of his Italian understandings.

Here is but one example. In the late 1970s Modigliani (with Cohen) made Wall Street headlines when he declared that the Dow Jones Index deserved a doubling of evaluation. More important than this prediction was the reason for it. Wall Street tipsters understood that, under anticipated inflation, bonds deserved (so to speak) a much lower price/earnings (P/E) ratio. What's sauce for the goose is sauce for the gander: investment bankers therefore believed that stocks should also be priced down to equally low P/E ratios.

Knowing European inflation experience, Modigliani and Cohen reminded us that accounting earnings for corporations never do include price-tag increments on the firms' steady state ownership of machinery, structures and inventories. Their needed correction mandated that marking down stocks' P/E ratio fully to match bonds' P/E would prove to be a mistake in the long run. Subsequent events proved how right they were, when what had been a 700 Dow Jones was soon on its way far beyond 1400.

Clever economists are not always wise economists. When I came to know Harvard's Schumpeter well, I was not surprised to learn that this sparkling mind had been president of a bankrupt Austrian bank during the post-World War I inflation. Even at age 20, I would never

have chosen one so limited in gravitas to be custodian of my paltry nest egg.

By contrast at MIT and for other non-profit academies, Modigliani's advice proved useful, especially in the longer run. In China, before earthquakes, dogs are supposed to whine. The week before the 1987 Black October record Wall Street crash, Modigliani did not like the atmospheric noises. As portfolio insurance, he bought normally-priced puts. Doing so well with them, he went back for some more of that good stuff. But now they were twelve times more expensive. His smaller coup was to pass them up as over-priced.

The same shrewdness characterized Modigliani's advice against President Bush's program to "save social security" by letting participants take into self-managed private accounts part of their compulsory contributions. Knowing Chilean and Swedish experiments, Modigliani understood 1) that this was an inefficient way to get help from equities, and 2) that withdrawals by the more affluent would be for them to renege on the solemn covenants the historic system was premised upon. The week he died, Franco was working hard to explain the intergenerational accounting involved.

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The Modigliani brain children are too numerous and varied to be noticed in my limited space. A brief sample can be listed.

1. At Carnegie, with Simon and others, Franco contributed to dynamic control theory. Although Franco never did accept as gospel the Lucas-Sargent rational expectationism, he did apply at the micro level the Richard Muth version of mean expectation.

2. To the economics masses, perhaps the Modigliani-Miller theorem is best known. It reaches the counterintuitive conclusion that *any* degree of debt leverage can be optimal for a firm. Why? Because share buyers can *undo* algebraically whatever the firm has done. Two pitfalls must be warned against. 1) Readers forget that often firms can borrow cheaper and more safely than median investors can. 2) If people in Society A are more risk averse than people in Society B, do realize that in the ideal normative steady state, B will be choosing somewhat riskier methods of corn production than A will. For each person and polity, there will not be indifference over what degree of stochastic risk-taking will end up being chosen. Modigliani-Miller, properly understood, does comprehend that.

3. For me, Modigliani's life-cycle theory of saving and bequeathing is first among equals. It is rooted in intergenerational accounting and explains why rapidly growing societies tend to be higher-saving than are slowly-declining societies. I rank this paradigm far above Friedman's permanent income hypothesis and various post-Harrod exponential tautologies.

4. Particularly with Ando, Modigliani was a parent of the MIT-Penn-Fed macro model. This had for years an informal usefulness at both the Federal Reserve and the Bank of Italy. Nihilists opine that economists have zero edge to forecast future macroeconomic trajectories. Not only did the MIT-Penn-Fed prove useful, but inside the confidential bureaucracy of the Fed pieces of it live on. As Chairman Walter Wriston learned the hard way at Citibank, MV = PQ models of 1950 type generated excessive squared errors of estimates and did so even after Ptolemaic epicycles were glued on to St. Louis Federal Reserve Bank versions. Paradoxically, today's Taylor-like rules, which were generated out of actual past economic history, could also have been generated out of the MIT-Penn-Fed equations themselves. Street-smart Franco never believed in the rational expectations view that policy changes can in the end affect only nominal price levels, being impotent to perturb significantly such real variables as unemployment and real outputs.

5. With Sutch and others, Modigliani grappled with the term structure of interest rates. (Paradoxically, his recognition that different investor types had favorite domiciles of particular debt instruments partially qualifies the Modigliani-Miller theorem.) From 1950 to 1975, lower-income families put their savings in three percent saving accounts; proceeds from them were lent to leveraged purchasers of new and old homes. In a reverse Robin Hood operation, with the connivance of bureaucratic fiats, it was kind of a case where the richer 'rob' the 'poorer'. Only amateurs in the art of trading believe that there are easy pickings to be had if only one reads the term structure of the public debt cleverly. Most of what is obvious is *already* in the posted market prices. The superlative long-term trader somehow successfully second guesses what is obvious and moves ahead of next market moves. Nihilists misunderstand their self-contradiction between belief that economic events are unpredictable at the same time that no safe excess returns are earnable. Modigliani's multi-variable causal models

contrasted well with the Friedman monistic positivisms. Franco understood that economic history is neither a stationary time series nor is it meaningless chaos. During Friedman's own lifetime, the M in MV = PQ became, because of endogenous exogenous innovational institutional change, a vector of money substitutes, thereby vitiating that some one M_0 or M_{13} could invariably move price levels.

A final anecdote

I never expected to make the grade of being a co-author with Franco. Just as a revolution once began on a tennis court, it was on a Belmont, Massachusetts, doubles court that the Samuelson-Modigliani article(s) were born. Between serves partner Franco asked partner Paul: "What do you think of Luigi Pasinetti's new result?" "Don't know it. How does it go?" "Pasinetti deduces that a rise in the fraction of income that workers save cannot raise the ultimate equilibrium." "Can it be that simple? In a plain vanilla Harrod model, the saving fractions of workers and rentiers are equal. Why won't a further *ceteris paribus* rise in workers fraction alone raise Harrod's average saving ratio and thereby eventually create a higher K/L ratio?"

That's what I vaguely remember. There followed for me a tiring three months. Once a week we met to discuss our joint findings. Busy Franco had to catch up with where we had left off before we could advance one inch. My English assistant thought him to be maybe slow. I corrected her: No, he is *deep* and will not leave anything unresolved. In the end our dialogue with Pasinetti I hope did leave each side correct under the *different* technological and institutional structures brought to the problem.

In memoriam

These days more than once a month events occur that make me wish Franco were alive to give his take on them. That's the true immortality that only scholars can hope for.