

As Productive as a French Farmer

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By DANNY QUAH.

Almost a full decade after the end of the Cold War, the specter of the Soviets still stalks East Asia. The fear now, of course, is not that communist conquest and domination could happen at any time, but that some form of it has already occurred. According to this theory, East Asia behaved much like Stalinist Russia by achieving growth only through mobilizing the labor force and by driving into the ground steel and concrete. The corollary is that the slowdown the region is experiencing is just as inevitable as the one that attended the communist behemoth.

By this reckoning—sparked in great part by U.S. economist Paul Krugman's renowned 1993 *Foreign Affairs* article—East Asian total factor productivity (TFP) growth has ranged from tiny to nonexistent. It is TFP growth that truly measures economic success because it shows how creative economies are. TFP is where it's at, then, and East Asia never got it.

The question I'd like to ask is, Who died and made TFP king? Maybe TFP isn't such a great measure of economic success. The myths a belief in TFP supremacy propagates are so pervasive that many worthwhile development strategies are bound to be considered failures if they're measured only by the TFP criteria.

But what is TFP? No statistician, economist, scientist, or policy-maker ever physically handles TFP; no one knows for certain what the economy-wide TFP is. Instead, TFP is measured as a residual. The formula is: TFP growth equals growth in output minus growth in quality-adjusted inputs of capital and labor. In other words, TFP is that which we cannot explain.

This has not diminished TFP luster one iota. Indeed, TFP has become imbued with near-magical qualities: For countries, it is now associated with, not just overall productivity of a nation's resources, but with creativity and inventiveness. Conversely, however, what we think is TFP might be only a statistical error caused by our insufficient understanding of the national economy. Before committing national development strategies to TFP growth, it might be useful therefore to try to get a better grip on it.

Let's first consider the OECD economies. From 1970 through 1987, the OECD country with the highest TFP growth was France. Indeed, average French TFP growth rate was almost double that of the United States. France is that country where one of the few things farmers, fishermen, and transport workers do like clockwork is go on strike, bringing all economic activity to a grinding halt. The French unemployment rate today is more than double Britain's and six times Singapore's. France is hardly the model of a modern successful economy.

Now let's look at TFP growth in sectors. Over this same period, and across the OECD economies, which sector had the highest TFP growth? Agriculture. Agriculture as the modern engine of growth? In which parallel universe?

Workers at the forefront of the new industrial revolution, the one led by computers, not by pitchforks, know that information technology (IT) has improved their productivity immensely. IT investment as a fraction of total investment rose to over 40% in 1996 from 7% in 1970. But what do TFP measurements show? Across the G7, aggregate growth has plummeted to an anemic 0.8% per year from its 3.3% average over 1960-1973.

Despite all their problems, the East Asian economies are not crumbling with industrial decay. Singapore is the world's largest producer of computer disk drives; South Korea

invests heavily in semiconductor manufacturing; Malaysian entrepreneurs envision constructing networks of satellites, digital television, and telecommunications to link multimedia enterprises. All these industries are critical pieces of a fast-growing IT-driven world.

Some may ask, shouldn't policy-makers go for growth by aiming for higher savings, better education and skills in the labor force? Sure they should, but not because this will improve TFP growth. Remember, TFP is what remains after accounting for contributions due to quality-adjusted factor inputs. Thus, these changes are just as likely to worsen measured TFP growth or leave it unaltered as they are to increase it. If low TFP growth is the disease, none of these proposals is a cure.

Microsoft has, over the last 20 years, been the single most successful economic entity on this planet. It achieved growth rates between 25% and 50% per year in the early 1990s. Microsoft's domination continues, now not just in its market narrowly-defined but in everything that modern workers touch. Microsoft achieved this success while hiring the smartest engineers, the brightest managers, the most hard-working, geekiest programmers. It spends unstintingly on the most advanced computer hardware. Microsoft attained superstar economic performance through massive infusion of labor and capital. If Microsoft's TFP growth were found to be low, what would we make of it? No one knows what Microsoft's TFP growth is, although I and some others are currently trying to estimate it. But it's not much, I suspect. Yet we like this company. Then should we think differently when it comes to the East Asian economies?

Sure, countries are not firms, but the difference here is meaningless. After all, TFP measurements are no more than mechanical production-function accounting and production functions apply to firms even better than they do to countries. Let's acknowledge successes where they are, whether it's Singapore or Microsoft, and let them get back to doing what they do best: growing.

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