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Liberty and Entrepreneurship

by Brian Lee Crowley*

Once upon a time, in ancient Greece, sailors were transporting a cargo of natron, a washing powder, somewhere in the Mediterranean. They stopped to prepare a meal on a fine white sandy beach. Lacking stones on which to support their kettle, they used lumps of natron to hold the kettle over the fire. The heat from the fire fused the natron and the sand, creating glass. For all we know, similar accidents may well have occurred elsewhere without anyone seeing and appreciating what had happened. In this case, however, the accident and an intelligent observer worked together to bring a highly valuable creation to humanity, increasing, not by design but by happy circumstance, our power to achieve our purposes.

The nameless sailor who saw the shiny crust that had formed under the fire and whose mind rushed on to the possibilities implicit in this discovery was an entrepreneur. He had discovered, by accident, a single bit of useful information, one of nature's slumbering secrets. By seizing it, experimenting with it, and then exploiting it, he unknowingly unleashed a series of powerful transformations and innovations. It became possible to have both warmth *and* natural light in buildings. Pots could be glazed. The seeds of mason jars, petri dishes, and the great stained glass masterpieces of Chartres had been planted.

Multiply this ancient example across all the many fields of human activity and we gain a new perspective on the entrepreneur's trade. Part of our human character is an urge to chafe against and try to transcend the limits on our freedom to realize our dreams. We want constantly to expand the areas in which we are not merely subject to mute and uncontrollable forces, but in which we control our actions and remake the world nearer to our heart's desire. When we are successful, we expand the realm of freedom, not only for ourselves, but to all to whom we make our knowledge available.

In this natural history of freedom, the entrepreneur's role is often neglected or overlooked because the contribution, while central, is little understood. Just as the ubiquity of the air we breathe masks its indispensability to life, so too the workaday character of the entrepreneur's contribution passes unremarked.

If it is true that human beings chafe against their limitations, then one way of defining the entrepreneur is as the person who makes experiments in transcending our limits, rather than merely contemplating them, who strives to make the first candle and thus to transcend the darkness. Entrepreneurs are the drones of the knowledge discovery process, the footsoldiers in our never-ending battle to beat back the frontiers of human ignorance.

Knowledge and Power

Knowledge *is* power. When we master nature's secrets, we can put her forces in our service rather than be subject to them. We can build skyscrapers, travel to the moon, or send information around the globe in the space of a heartbeat. And the more we know, the better we are able to outwit governments and other powerful human agencies that want us to live according to their priorities rather than our own. This crucial information-gathering and dissemination function is one of the great contributions of the entrepreneur's work.

I am frequently struck, however, in the academic literature about the entrepreneur, by the degree to which his role is overrationalized, how he is reduced to a logical type or to some supposedly exhaustive inventory of his knowledge and techniques. The entrepreneur defies such easy classifications precisely because his role is played out at the confluence of the two great bodies of human ignorance —ignorance about the world we inhabit and ignorance about ourselves.

We as a culture pride ourselves on an impressive body of knowledge about all these things, and so such emphasis on our ignorance does not sit well with many of us. Yet this may just be precisely the overweening arrogance of the ignorant at work. While we pride ourselves on our knowledge of the physical world, for example, in fact much of it is brought to us by entrepreneurs who happened by chance to witness some accident and understood at least part of the practical significance of what they saw. Here the unpretentious and deeply untheoretical role of the entrepreneur shines through most clearly.

The Greek sailor who discovered glass is merely the earliest recorded example that I know of this principle at work. Many other discoveries that were the fruit of fortuity have changed the course of human life for the better. The telescope, aniline dyes, photography, x-rays, the discovery of the relationship between electricity and magnetism, the curing of rubber, the telephone, the phonograph, welding, steelmaking, and penicillin are only a few choice examples. We knew nothing about the potential of the physical world to supply us with such wonders until someone stumbled upon them and *really* saw what they meant. We could not have sought them directly without knowing what they were, and had we known what they were, we would already have discovered them!

Markets and Incentives

Because we know and understand our world so poorly, we can never have a comprehensive overview of the resources at our disposal. We simply don't know the potential of the world and the people who surround us. In these circumstances, markets and a regime of private property have the curious and unintended effect of multiplying the knowledge available to us. Markets do this by creating an incentive to seek out the opportunities that our unique knowledge of time and place reveals to us, making potential "knowledge entrepreneurs" of us all.

Consider a man I know who makes Scottish highland paraphernalia, things like sporrans, daggers, and bagpipe fit-

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tings. One day he was reading the newspaper and his eye happened to fall on a call for tenders from an aircraft manufacturer looking for subcontractors to make aircraft parts. He ran his eye idly over the advertisement. Suddenly, he realized that with the equipment he had for making highland paraphernalia, he had the capacity to make the aircraft parts that were described there. In that brief moment, this entrepreneur's understanding of himself and his capabilities was transformed; he now saw himself not only as a maker of daggers and sporrans, but as an aircraft manufacturing subcontractor. He now employs a number of people in the aircraft parts business, as well as carrying on his traditional activities.

A second example comes from a town near where I live. This town, originally founded on coal mining, had been in decline for decades following the closure of the mines. One snowy winter's day, a man was out walking his dog in the town and noticed a patch of ground where the snow had melted and steam was rising. His curiosity was piqued and on investigation he discovered that the mine shafts underneath the town had filled with water that was being heated geothermally. A chance surface leak, together with a man who was not content merely to see, but able to observe, transformed this town. An entire industrial park has been built on the exploitation of this cheap, plentiful, but strictly local and accidental source of energy.

Both of these examples illustrate just how limited is our knowledge of the physical world. More important than this kind of ignorance, however, is our ignorance about that most basic force of the economy: human wants, needs, and desires.

If the economy is, as it should be, about satisfying these wants and needs, the primary question must be: How do we know what these wants and needs *are*?

What people want depends on what they know — about themselves, their resources, and the real choices open to them. To discover what people really want, we must be constantly striving to offer them ever-changing choices, letting them know that these choices exist. Since by its very nature this information can never be complete, we are embarked, in a free economy, on a permanent quest for knowledge. This quest is for knowledge about our fellow humans: about their expectations, their wishes, their desires, and their thoughts. These determine their economic actions, and therefore the value of goods, services, and money.

Joseph Schumpeter wrote about the "creative destruction" inherent in capitalism, the ceaseless questing change that seethes within a market system. That change is driven by the twin forces of the constantly changing nature of human needs and the constant discovery of new knowledge that is one of the chief roles of the entrepreneur. The destructiveness of this process of change, can, of course, be deeply disquieting, so that the transformative work of the entrepreneur is often resisted by political authorities in the name of the preservation of a comfortable status quo.

Yet change which at first looks destructive often brings great and quite unexpected benefits later. No one, not even the entrepreneurs who spark these changes, can foresee all the consequences of what they have unleashed.

Consider in this regard something as simple as the invention of the motorcar. No one foresaw the myriad social transformations that would be wrought by this invention as people began to see and exploit its potential. Certainly its inventors were no better at crystal-ball gazing than anyone else; they believed that the total number of cars in the world would be forever limited by one insurmountable obstacle: the number of members of the working class intelligent enough to be trained as chauffeurs.

Yet the car was nearly to destroy, for example, the horse industry. Almost 20 million horses lived and worked in North America at the turn of the century, creating work for blacksmiths, livery boys, and makers of nails, harnesses, and saddles. Hay and oats were major cash crops. Of all this, almost nothing remains today. Local institutions like the rural school and church fell victim to the school bus and the Sunday drive. City centers shrank, suburbs blossomed, hemlines, drive-ins, and highways went up — barns, travel time, and (arguably) sexual mores came down. Millions of individual ideas, adjustments, desires, and innovations all conspired to work a transformation on the face of society which even the most prescient could not have envisioned. Indeed, many lawmakers early in the century resisted the automobile's rise, fearing the economic and social transformations they dimly sensed would come in its train.

Now we may find Zimbabwean chrome and Malaysian tin, French tires and Dutch chemicals, Taiwanese steel and German robots running on American software being used by Canadian workers under Japanese management to make cars for export to the Far East. Most of the jobs performed in the manufacture of a car didn't even exist at the turn of the century, and now the industry, directly or indirectly, employs millions of people in literally every corner of the globe.

A similar transformation occurred as thousands of feudal peasants moved from the countryside to the city during the Industrial Revolution. If authorities had had the power to stop such social transformations, to prevent entrepreneurial experimentation, some immediate suffering might have been prevented and some established interests protected. But we would still be working the land, and few of us would have horses, let alone automobiles.

The Entrepreneur as Subversive

And so the vital link between entrepreneurship and liberty begins to emerge. In this connection, my earlier definition of the entrepreneur — "the person who makes experiments to try to transcend our limitations" — suddenly assumes a decidedly subversive hue, especially in the context of authoritarian or totalitarian political orders.

After all, the obstacles to achieving our goals can be intentionally man-made, and such restrictions will be just as tempting to defeat as natural ones, thus expanding again our potential for free growth. When Chinese students in America wanted to pierce the censorship at home about what was happening at Tiananmen Square, one method they chose was to program a computer systematically to dial telephone numbers in China, enabling them to locate fax machines throughout the land to which information was dispatched. China had permitted fax machines as part of its drive for economic growth, not realizing the subversive potential of the network they had created. But to the eyes of the entrepreneur seeking to transcend his limitations, it was an engraved invitation to fill an unforeseen need.

As the cascading effect of the entrepreneurial impulse sends powerful ideas sweeping across societies, these ideas are incrementally altered, redirected, refined, improved, and expanded. Dirigiste or authoritarian governments — governments that want to dictate outcomes and shape their society rather than facilitate exchanges of goods, services, and information which will be put to unknown and unknowable purposes — will suffer one of two fates. They may suppress changes driven by entrepreneurs, in which case their society will stagnate as they are unable to integrate and use vast quantities of knowledge. Only knowledge known to and approved of by rulers is permitted to be used in such societies, and that body of knowledge is always infinitely more limited than the knowledge possessed by the population as a whole. The pressure for change in such societies will become unbearable as they fall inexorably behind their more entrepreneurial and experimental competitors. Alternatively such regimes may recognize the need for entre-

preneurs to promote growth, but will find their own power as rulers incrementally undermined and transferred to those empowered by the innovations. Of course, these two hypothetical examples describe roughly what happened in the former Soviet Union and the People's Republic of China, respectively.

The only regime which cohabits easily with a society in which entrepreneurship is allowed to work its magic of social, cultural, *and* economic transformation is a regime of limited government. Such a government accepts its own citizens' ability and right to make responsible choices about their own lives and how to live them. And, of course, it is necessarily optimistic that the bad side-effects of the entrepreneur's free experimentation and innovation will themselves give rise to corrective experiments and innovations. A society which is congenial to the twin impulses of entrepreneurial creativity and freedom realizes that both emerge from incremental experimentation, a constant seeking of improvement, and not from the imposition of a grand design from above. ❑

BUSINESS-CYCLE CONDITIONS

The leading indicators continue to suggest that continued expansion is more likely than recession in the coming months. However, the flattening of the yield curve in 1994 from its exceptionally steep slope in the early 1990s raises some concerns.

Eight of the 12 primary leading indicators reached cyclical highs in our latest review: the *change in sensitive materials prices*, *new orders for consumer goods* (new orders and all other dollar-denominated series are reported in constant dollars), *contracts and orders for plant and equipment*, the *index of new housing permits*, the *ratio of manufacturing and trade sales to inventories*, *vendor performance* (the percentage of purchasing managers reporting slower deliveries from their suppliers), the *average workweek in the manufacturing sector*, and *initial claims for state unemployment insurance*, an inverted series. All eight series are clearly expanding. The moving averages of the average workweek in manufacturing and the ratio of sales to inventories had not reached cyclical highs since last April, so the new highs removed doubt concerning these series' cyclical statuses.

In contrast to the strong expansionary trends in the labor, production, and sales data, the financial and monetary series continue to weaken. In November, the *M2 money supply* decreased to a new cyclical low. Since last January, this series has decreased by about $50 billion, or 1.8 percent. The narrower *M1 money supply* also reached a cyclical new low, leaving it $12 billion, or 1.4 percent, below its March 1994 peak. This decrease was judged sufficient to downgrade the M1 series' status, and both monetary aggregates now are appraised as clearly contracting. The moving average of the *index of common stock prices* (constant purchasing power) decreased for the third consecutive month. This series is 5.1 percent below the cyclical peak reached last January. However, it also is a half percentage point above last April's low, leaving its trend in doubt. Its cyclical status remains indeterminate.

Overall, the percentage of leading indicators expanding increased to 82 (9 series expanding of the 11 for which a trend is evident) from 80 (8 out of 10) last month. Our cyclical score, based on a separate evaluation of the leaders, increased to 85 from the score of 82 reported last month.

In contrast to last month, when the raw data for nine of the 12 leading indicators decreased, only five of the series decreased this month. The predominance of cyclical highs this month and the increases in the percentage expanding and the cyclical score suggest that the expansion, now nearly 4 years old, is likely to continue.

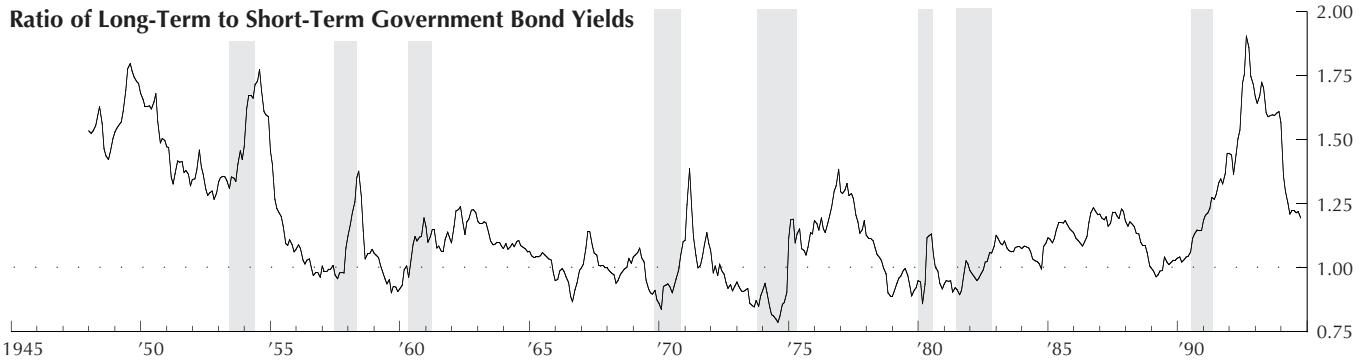
All six primary roughly coincident indicators are clearly expanding. Four series reached cyclical highs, according to the latest reports: *nonagricultural employment*, *manufacturing and trade sales*, the *civilian employment to population ratio*, and *gross domestic product* (GDP). Ignoring a 1-month spike in 1992, *personal income in manufacturing* also reached its highest level for this business cycle.

The increase in employment during 1994 was exceptional (and largely overlooked in media reports, which focus primarily on corporate announcements of mass layoffs and ignore new jobs, which are created one at a time and thus are not "newsworthy"). Payroll employment increased by 3,482,000, the biggest annual gain in a decade. The manufacturing sector added 293,000 jobs, led by the automobile and electronics industries. This was the second yearly gain following 4 years

Statistical Indicators of Business-Cycle Changes

Change in Base Data					*Cyclical Status*		
Sept.	*Oct.*	*Nov.*	*Dec.*	***Primary Leading Indicators***	*Nov.*	*Dec.*	*Jan.*
–	–	–		M1 money supply	?	?–?	–
–	–	–		M2 money supply	–	–	–
–	–	+		Change in sensitive materials prices	+	?+?	+
–	+	+		New orders for consumer goods	+	+	+
+	–	+		Contracts and orders for plant and equipment	+	+	+
+	–	–		Index of new housing permits	?+?	+	+
–	+			Ratio of manufacturing and trade sales to inventories	?	?	+
+	+	–	+	Vendor performance	+	+	+
+	–	–	–	Index of common stock prices (constant purchasing power)	?	?	?
nc	+	r+r	nc	Average workweek in manufacturing	?+?	?+?	+
+	–	+		Initial claims for unemployment insurance (inverted)	+	+	+
–	+	–		Change in consumer installment debt	?+?	?+?	?+?
				Percentage expanding cyclically	*89*	*80*	*82*
				Primary Roughly Coincident Indicators			
+	+	+	+	Nonagricultural employment	+	+	+
–	+	+		Index of industrial production	+	+	+
+	+	–		Personal income in manufacturing	?	+	+
–	+			Manufacturing and trade sales	+	+	+
+	+	+	+	Civilian employment to population ratio	+	+	+
+				Gross domestic product (quarterly)	+	+	+
				Percentage expanding cyclically	*100*	*100*	*100*
				Primary Lagging Indicators			
r+r	–	+	+	Average duration of unemployment (inverted)	–	?	?
+	+			Manufacturing and trade inventories	+	+	+
+	+	+		Commercial and industrial loans	+	+	+
+	–	+		Ratio of consumer installment debt to personal income	+	+	+
+	+	–		Change in labor cost per unit of output, manufacturing	–	?–?	?–?
+	+	+	+	Composite of short-term interest rates	+	+	+
nc No change.			r Revised.	*Percentage expanding cyclically*	*67*	*80*	*80*

Under "Change in Base Data," plus and minus signs indicate increases and decreases from the previous month or quarter and blank spaces indicate data not yet available. Under "Cyclical Status," plus and minus signs indicate expansions or contractions of each series as currently appraised; question marks indicate doubtful status when shown with another sign and indeterminate status when standing alone.



Source: Standard & Poor's Statistical Service.

of decline, and the largest increase since 1984. The retail trade sector added 779,000 new jobs, with the largest gains occurring among eating and drinking establishments. The most notable job trend of the year, however, was the surge in employment in the business-services industry. Payrolls in this sector, which includes "Kelly girl"-type job agencies, increased by 722,000. This represents a remarkable one-fifth of the increase in total employment during 1994. Overall, job gains helped reduce the unemployment rate to 5.4 percent in December, a decline of 1.3 percentage points since last January.

The primary lagging indicators continue to edge upward, possibly signaling the early stages of the bottlenecks that usually precede recessions. Four laggers reached new highs: *manufacturing and trade inventories*, *commercial and industrial loans*, the *ratio of consumer installment debt to personal income*, and our *composite of short-term interest rates*. All four series are clearly expanding.

The *average duration of unemployment*, an inverted series, posted another strong increase in December. Since October, the base data for this series has decreased from 19.3 to 17.8 weeks, the shortest duration since June 1993. The moving average of the *change in manufacturing labor costs per unit of output* also increased, raising further doubts about the series' underlying trend. For now, it remains appraised as probably contracting. Unit labor costs have been declining since 1992 and they continue to do so, reflecting ongoing gains in labor productivity. The recent uptick in this series represents a slower rate of decrease in manufacturers' unit labor costs, rather than an increase in such costs. Prior to every recession since 1970, manufacturers' unit labor costs have increased (*i.e.*, our rate-of-change series has increased to a level greater than zero). Continued decreases (even at a slower rate) have favorable implications for the economy.

In addition to the exceptionally large gain in employment, the big economic story of 1994 was the increase in interest rates. Short-term rates doubled over the past 12 months from roughly 3 to 6 percent and long-term rates, although they recently have edged downward, increased from roughly 6 to 8 percent. One consequence of these trends was a shift in the yield curve from the exceptionally steep slope of the early 1990s to a more nearly flat slope. This change is indicated in the accompanying chart, which shows the ratio of the rates on 20-30 year Treasury bonds to rates on 2-4 year issues. On this chart, a level of 1.00 would indicate a flat yield curve, values of less than 1.00 a downward-sloping curve and values greater than 1.00 an upward-sloping curve.

The recent flattening in the yield curve (plotted as the sharp decrease in our ratio) is cause for concern. Prior to seven of the nine postwar recessions, the yield curve became downward-sloping, or "inverted." If the spread between short and long-term interest rates continues to narrow, the yield curve eventually will invert and, history suggests, a recession will follow. We emphasize that, for a number of reasons, it could be many months before this happens. First, despite the recent flattening, the yield curve currently remains upward-sloping. Second, even if it does become inverted, there often is a long lag between a shift to a negative slope and the onset of recession. No two business cycles are alike, but the sharp adjustment in the yield curve in 1994 most nearly resembles the adjustment of 1955, which was not followed by a recession until 2 years later. Finally, our leading indicators overwhelming suggest that continued expansion is more probable than recession in the coming months. Clearly, the yield curve bears close watching in 1995, but at present the economic outlook remains favorable. ❑

PRICE OF GOLD

	1993	*1994*	*—— 1995 ——*	
	Jan. 14	*Jan. 13*	*Jan. 5*	*Jan. 12*
Final fixing in London	$327.40	$388.75	$375.30	$377.60

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