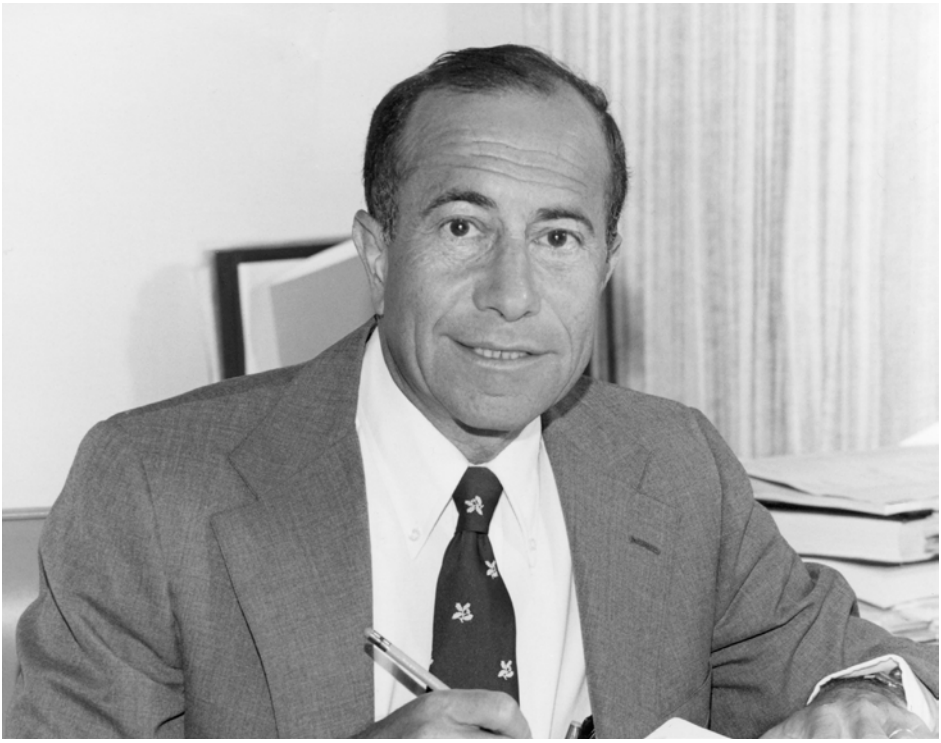
# Charles Wolf Jr.

## Sixty Years as a Scholar and Leader

*Reflections by His Friends, Colleagues, and Students*



# CHARLES WOLF JR.

## SIXTY YEARS AS A SCHOLAR AND LEADER

*Reflections by His Friends, Colleagues, and Students*

# Preface

During his 60 years (so far!) at RAND, Charles Wolf, Jr. (Charlie) has distinguished himself as a scholar, leader, educator, and philanthropist. Throughout his career, Charlie has sought to deflect attention and praise from himself, always pointing out the collaborative nature of work at RAND and the contributions of his colleagues. The very existence of a volume honoring Charlie's accomplishments, therefore, may make him a bit uncomfortable. As a longtime champion of brevity, however, he may appreciate at least our efforts to keep this tribute short and to the point.

The short commentaries in this volume are from Charlie's colleagues and students, sponsors who commissioned some of his best work, and RAND trustees and advisers. These are all people whose work or thinking Charlie has influenced in important ways. These reflections note the breadth of Charlie's work and the reach of his work's influence, both quite remarkable.

It is impossible, of course, to separate the work entirely from the man, and these notes also capture something of Charlie's style and his approach to professional life and leadership. His friends and colleagues, I think, will recognize him in these cameos. I suspect, though, that most readers will find here some telling anecdote they had not known before.

Perhaps the most important thing about the present volume is that it is still incomplete. Charlie's work goes on.

This volume was commissioned by Michael Rich, president and CEO of RAND Corporation, as part of the institution's salute to Charles Wolf for his 60 years of service.

C. Richard Neu

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# Charles Wolf's Case Against Scientific Public Administration

*Arthur C. Brooks*

When I was coming of age, there was no greater intellectual force in American public policy than microeconomics. No self-respecting policy analyst could afford to remain ignorant of the iron laws of supply and demand. By the early 1980s, no one but the most ardent socialist could argue in favor of wage and price controls, or suggest that government regulation did not require at least a modicum of cost-benefit analysis.

This was a welcome development. Fueled by the Reagan administration and think tanks such as RAND, the mainstreaming of basic economic logic led to strong economic growth in the United States and to trade policies that lifted billions of people out of poverty around the world.

But the economics revolution had a soft spot: market failure. Theories of market failure had been enumerated all the way back to Adam Smith. Namely, private markets fail in the case of public goods, externalities, information asymmetries, and monopoly. Private markets under these conditions would not provide efficient outcomes. And the reflexive answer always seemed to be more government.

Insufficient roads and bridges? Turn to the government. Pollution? Regulate. Monopolies cropping up? Prohibit them by law. The conventional wisdom held that only government could address market failure, whether by manipulating industry or directly providing goods and services.

This mentality clearly led to suboptimal outcomes. In one popular story in the 1980s, journalists revealed that the Pentagon was spending hundreds of dollars each on toilet seats with no cost accountability. It was a public outrage, but there was little coherent economic response.

Of course the Army needed toilet seats, and creating and supplying the armed forces surely counted as a public good. Inefficiency and waste, endemic to government, appeared to be unavoidable.

Free-market advocates had no rejoinder beyond eye-rolling and anecdotes. When sources of market failure were detected, the automatic response was a government-driven solution, end of story, even when the results were clearly unacceptable. The microeconomic revolution had apparently met its match in scientific public administration.

Until, that is, Charles Wolf published his 1988 volume *Markets or Governments: Choosing Between Imperfect Alternatives*. Wolf offered a way to understand and combat the chronic overpayment and underperformance of government, even in the case of public goods. Building on earlier papers, this short book put forward a theory of "*non*-market failure." It showed exactly how and why government fails to solve problems and frequently makes them worse.

Wolf's taxonomy of nonmarket failure couldn't be clearer.

1. The proverbial, uber-expensive toilet seat was a simple case of *redundant and rising costs*. They stemmed from an utter lack of market incentives to maximize benefits and minimize costs.
2. Next came *internalities,* the result of misaligned organizational goals that reflected the incentives of bureaucrats rather than the public interest. A canonical example was the growing concern over public schools that seemed to provide job security for adults before a good education for children.
3. The unanticipated side effects of poorly designed policies led to *derived externalities*. In the 1980s, this very problem in America's welfare system—namely, its tendency to destroy work incentives for the poor—sparked the beginnings of reform movements.
4. *Distributional inequity* came from the human tendency of those in power to behave in a self-interested way, as government itself created privilege for elites over ordinary citizens.

This simple framework of nonmarket failures offered a new way to assess government policies. Policy analysts applied it imperfectly, to be sure. But at least we had an organized defense against the manifestly

flawed "regulate first, ask questions never" mindset that had previously gone unchallenged.

Today, thanks in large part to Wolf's work, properly trained policy analysts must meet a higher bar to justify government intervention into private markets. It is insufficient to identify a source of market failure. It is necessary to show that a market actually fails, that the government can reasonably address the problem, *and*—most importantly—that the state can do so in a way that does not create its own burden of nonmarket failures. Among other things, the increasing reliance on the private provision of public goods in the 1990s and public-private partnerships flowed from these advances in thinking.

I read *Markets or Governments* in 1996, eight years after its publication. It directed my understanding of public finance better than any other single book or paper. More broadly, it probably did more to organize skepticism over regulation than any publication since Ronald Coase published "The Problem of Social Cost" in the *Journal of Law and Economics* in 1960—and for which he was awarded the Nobel Prize in economics 31 years later.

There will always be a tendency toward the conceit of scientific public administration. Charles Wolf armed my generation with the tools to deal that tendency an important blow. And in the process, he helped increase economic freedom and prosperity at home and around the world.

# Charles Wolf as a Scholar and a Teacher

*Brian G. Chow*

While I had known Charles through our mutual friend, Albert Wohlstetter, since the early 1980s, I did not have the opportunity to work closely with Charles until 2007. We co-led three projects. A project on the Proliferation Security Initiative (PSI) from the Office of the Secretary of Defense in 2007 was followed by two more projects during 2008–2011.

Charles's contribution to bettering policies relating to the global economy and security is far better known than his method of conducting research. Yet researchers, including myself, can benefit from the latter for conducting their own studies in a better and more effective manner. He poses hypotheses systematically, thinks multidimensionally, collects and processes the relevant information, concludes logically and convincingly, and recommends policy measures that are both practical and cost-effective. My interaction with him over the three projects has provided me a glimpse of his research methodology and style, as well as his contribution to better policies.

At the start of the PSI project, he asked each team member to jot down knotty issues and evolving ideas throughout the project so that other team members could comment on them or offer possible solutions. Others' comments begot additional notes. These notes formed the backbone for the final project report. This is an effective and stimulating way to design solutions that can withstand future uncertainties. It also leaves an audit trail of how issues were debated and resolved. In addition to his innovative approach, Charles adheres to such common practices as reviewing existing works and opinions about the research topic and assembling databases as evidence for the study, except he

probably would allocate a larger fraction of the budget for them than other analysts might.

As a project leader, he gives every team member ample opportunities to speak. In addition to being the richest source of original ideas, he is quick to single out others' good ideas among a sea of noise, especially in a brainstorming session. He always gives credit where credit is due. On the other hand, to one who offers a not-so-good idea, he excels in asking probing but friendly questions sprinkled with counterexamples. His to-the-point construct makes one recognize the shakiness of the proposed idea. Participants, whether they have offered good or bad ideas, find meetings with Charles stimulating, rewarding, and supportive.

In devising ways to encourage five prominent holdout countries (China, India, Pakistan, Indonesia, and Malaysia) to join PSI, Charles's original and novel thinking was best reflected in two principles. He proposed to "lead from behind," exercising U.S. leadership by ceding it to other PSI participants. He also proposed "to affiliate with PSI gradually," asking a holdout country to affiliate with PSI incrementally by building upon agreements and/or commitments already arrived at.

Charles has multiple proposals at a given time to shop for sponsors. The uninitiated are to be forewarned. The amount of funds afforded by a sponsor is not a key factor for Charles to undertake the research. For a small project such as the PSI study, Charles would automatically spend more than his own budgeted time. While he would not ask team members to follow suit, they all would do so on their own. Otherwise, the high standard expected from Charles could not be met. On the other hand, because researchers, whether junior or senior, would jump at the chance to work with Charles, he has little trouble picking whoever is most qualified to fill out the team.

For a small study such as our PSI project, producing just one monograph or technical report, RAND's highest-quality publications, would have been considered an achievement. Yet the project actually resulted in two such publications. The second one is *U.S. Combat Commands' Participation in the Proliferation Security Initiative—A Training Manual*. It is a manual for the Geographic Combat Commands to use in training personnel assigned to participate in the PSI exercises. Its

purpose is to help the GCCs deal with the normal issues arising from staff turnover and sometimes-insufficient institutional memory. This manual reflects Charles's interest not only in big policies but also in nitty-gritty issues, when they are important parts of a big policy's comprehensive implementation plan.

While the Nash equilibrium, as a solution of a noncooperative game involving multiple players, is not possibly calculated for the complicated policy issues Charles works on, he masters the essence of game theory. One example is our second project, which analyzed China's expanding role in global mergers and acquisition markets. He proposed to use a wide lens covering four aspects: China's foreign investment and national security interests and counterpart U.S. interests. He led the study team to evaluate the pros and cons or the benefits and costs of the two countries' actions and reactions in chained successions. This was his approach to come up with equitable, reciprocal measures and win-win situations for the United States and China.

Building on the second project, our third project investigated whether and to what extent China's burgeoning foreign investments in the United States, Europe, Asia, and the rest of the world might enable it to circumvent U.S. export controls and enhance its own military capabilities or degrade those of the United States. While the analytical approach and findings are not suitable for open discussion, this project illustrates the close interactions and friendship Charles established with the project coordinator from the sponsor's office. The coordinator sent in detailed comments, and Charles led the team to revise the draft manuscript iteratively with the coordinator and explain in detail how and why changes had, and had not, been made. Both during and after the project, the coordinator would also consult Charles on issues and studies outside the project.

I have been fortunate to work closely with Charles on three projects and am proud to have been on his research teams.

# A "Classic" Economist

*David S. C. Chu*

Charlie Wolf's writings—and his personal involvement in the advancement of the economics profession—remind us why this field of intellectual endeavor has so much to offer: He uses basic economic precepts to help us understand events in the world around us, bringing a semblance of order to what might otherwise appear as disconnected if not unintelligible developments. There is an elegant simplicity in his reasoning, which avoids mathematical complexity. At the same time, he does not flinch from taking on big issues, nor from offering forecasts (including empirical ones) or challenging conventional wisdom.

But Charlie's work is also notable because he was one of the pioneers in bringing an economist's perspective to national security issues. While contemporaneous with Robert McNamara's tenure as Secretary of Defense, and his encouragement to "systems analysis," Charlie took a somewhat different path, developing insights on strategy and its relationship to the fundamental security challenges facing the United States, vice the more operationally analytic focus of the systems analysis community.

That is not to say Charlie was always successful in persuading policymakers about the merits of his propositions. But he usually achieved at least a respectful hearing, which as a practical matter is a high-end outcome for the policy analyst.

Three of Charlie's many papers illustrate the qualities of his work.

In the early stages of the (U.S.) Vietnam War, Charlie published *Insurgency and Counterinsurgency: New Myths and Old Realities* (1965). In that essay, he questioned the syllogism

1. Insurgents require popular support.
2. Economic development/social improvement neutralizes support.
3. Therefore, counterinsurgency should emphasize socioeconomic improvement.

Charlie argued that insurgency can "gather momentum among a population that is passive or even hostile to the movement" (p. 4)—that an insurgency's success depends on its ability to mobilize the necessary inputs (the economist's classic production function), not popular support *per se*. Taking this perspective, socioeconomic development might even have the perverse effect of facilitating the insurgency, if one recognizes how the substitution effect (creating increased popular support for the government) could be overcome by the income effect (additional ability to buy off the insurgents, thus providing the insurgents the resources they need). Charlie applies the economist's basic tools to the security problem, yielding a counterintuitive insight. He goes on to discuss the incentives available to the insurgent in securing resources (e.g., inducements for the destitute, coercion for the privileged), and recommends an input-denial strategy, warning that unduly focusing on popular support could distract us from properly understanding how best to proceed:

> . . . our disposition to accept the "popular support" view of the problem often makes us too prone to look for overly broad and ambitious "social transformation" solutions, and to overlook the more modest, realistic, and sometimes distasteful measures that may improve the situation step by step. (p. 14)

That was not the conventional wisdom then; it is not the conventional wisdom now. But it is an alternative perspective that we would do well to ponder, acknowledging the validity of Charlie's warning that

we mask our own policy failings by too much ascribing blame to the incumbent government's popular standing.

Charlie's willingness to take on big issues and offer a clear forecast is exemplified in the paper that he and his colleagues published in 1995, *Long-Term Economic and Military Trends 1994–2015, The United States and Asia*. While separate authors prepared the forecasts for China, India, Korea, and the United States (Charlie prepared Japan), they all used a methodology Charlie had earlier developed. What's striking is how they got the "big picture" right (even if some of the specifics are off the mark): that by 2015 China's gross domestic product might well rival that of the United States, and that China's military capital would reach a level that would worry the United States (my interpretation—they simply forecast it might be one-third to one-half as large as ours).

I'm not sure anyone else was willing that early to take the stand they did. To be fair, they did overestimate the military role that India might play in the balance of power—but their forecasts of the likely contributions of Japan and Korea were remarkably prescient.

At about the same time (the end of the Cold War), Charlie and his partner Dick Neu convened an effort to help the country chart a security strategy forward, recognizing that "Increasingly, the first responses to national-security and foreign-policy problems [will be] economic: trade restrictions, embargoes, freezing of financial assets" (*The Economic Dimensions of National Security,* 1994, p. xi). In doing so, they acknowledged forthrightly that the success of U.S. post–World War II policy created a world that diminished the *relative* importance of U.S. economic leverage. Nonetheless, they argued that we should still strive to be "Number 1," and that it was in our interest "to minimize international instability of the sort that will generate undesirable developments in the first place." They posited that "U.S. economic security can be enhanced by enhancing international economic security" (p. xvi), outlining five objectives essential to that end (e.g., maintaining a functioning international commercial and financial infrastructure). While actual events in the succeeding two decades may have required more reliance on overt military power than they anticipated, it is also certainly the case that economic instruments of national power have played a very substantial role, and that—as they observed—the United

States accrues more leverage in the international environment when its economy performs well, or at least well compared with the economies of other advanced nations.

What is striking about this effort is its ambition in bringing economic ideas to bear on the broad national security challenge—i.e., how should the United States think about security policy now that it no longer needed to focus on an expansionist Soviet Union? And Charlie mobilized his extensive relationships with others in economics and national security matters to address that question (including Richard Danzig, Karen Elliott House, Sam Huntington, and Albert Wohlstetter).

Charlie and his colleagues asked whether defense resources could be used for economic purposes. Humanitarian relief (emergency assistance, as they termed it) was one of the examples they offered. That use of military resources has turned out to be very helpful in U.S. security relationships—think rescue efforts in Asia, or assistance to Japan following the tsunami. But it is only after its utility was demonstrated that it has become a staple of defense planning. By capitalizing on a basic economic insight (that one set of resources can produce more than one output), Charlie and his team anticipated what we now accept, long before empirical results commended it to the defense planning community—once again illustrating the ability of Charlie's use of basic economics to produce useful possibilities.

Perhaps the most appropriate tribute to Charlie is to follow his example in our future endeavors; that is, to ask how basic economic principles can help us better understand the issue at hand—to answer the question, what is going on here? In parallel, we should be willing to advocate that policy promptly reflect such understanding—more promptly than historically has been the case. Yes, it's a return to classic economics—our thanks to a scholar who applied those principles so effectively across his life's work.

# The Wolfman Abides

*David C. Gompert*

Charles Wolf (a k a Charlie) is a towering and complex figure. His intellect is intimidating, yet his wit is disarming. His character is oak, yet his charm is satin. He is fiercely competitive, yet no one is more gentlemanly, win or lose. In debating ideas, he neither seeks nor offers quarter, yet he is tougher on himself than on others.

I had heard of Charles Wolf long before working with him. While the rest of us Cold Warriors were calculating Soviet tanks and nuclear warheads, Charles was taking the temperature of the Soviet economy, which as it turned out was the far more important measure. We were all bean-counters back then, but Charles pondered what the beans meant. As one of the two or three most authoritative and insightful analysts of Soviet economics back in the day, when Wolf spoke, everyone listened.

At the end of the Cold War, while other Kremlin-watchers kept watching the Kremlin, Charles expanded his field of work to encompass the interplay of global security and economics generally. He could invariably be found at the nexus of "markets, governments, and society"—analyzing and explaining policy implications of foreign aid, international arms trade, and the phenomenon of states that are militarily muscle-bound and economically frail. Of signal importance was Charlie's work on China's economy. Early in China's remarkable postcommunist development, Charles foresaw what the trends implied. He offered an elegant model and alternative paths of China's expanding capacity to generate military power. Twenty years later, one finds that he was, as usual, on the money.

At the same time, I recall that Charles projected China's gathering might without warning that the sky would fall on the United States. I

ascribe this only partly to his innate optimism and calm. Charles has always exuded a quiet and enduring faith in America and in markets—in other words, in freedom. As a small boy troubled by schoolroom air-raid drills during the Cold War, I was comforted by my mother's assurance that all was fine: otherwise, would Ike be playing golf? Even as Charles reports bad trends, his confidence in the future abides.

As good as he is with numbers, Charles is equally good with ideas. No one has summed it up better: "Not everything that counts can be counted, and not everything that can be counted counts." In the world of ideas, he believes in the power but not necessarily the rightness of markets. Whoever has not read the seminal Wolf writings on markets and governments, should. His angle of attack was this: Economists know how to perform rigorous analysis of market failure but not of government failure. Yet without the latter, choices between markets and governments cannot be rationally made. Hence, Charles's groundbreaking effort at measuring and comparing what each way of organizing society is good and bad at delivering.

Charles is usually right. But when he is not, he is the one to put the spotlight on his mistake—a quality unique in social science, where people are often wrong but never admit it. My absolute favorite Wolf writing is one on when he was right and wrong, and what to learn.[1] Who would write and share such an honest account?! Charles Wolf would. The inspiration for that essay was that if he held himself to account for his predictions and prescription, perhaps others would do likewise. I never knew whether he was being naïve or mischievous—probably the latter.

Charlie enjoys making predictions "interesting"—that is, with a wager. He used to carry a little black book in which to record bets (probably still does, despite smartphones). In it, one could find a bet he and I made about the rate of growth of the Russian economy in the

[1] Editor's note: Mr. Gompert is referring here to a section of the Prologue to a collection of previously published essays and opinion pieces by Charles Wolf, *The Economic Pivot in a Political Context*, Transaction Publishers, 1997. This section is titled "Hits and Misses" and offers a retrospective assessment of how well the forecasts and arguments in each essay had stood up in the following years. In all subsequent collections of his short writings, Charles included a similar "postaudit" after each essay.

aftermath of the Soviet collapse. I don't know what I was thinking: Here is the legendary Charles Wolf, and I was betting an expensive lunch at a place of his choice (of course) concerning the Russian economy. Well, I won. But I hesitated to say anything for fear that Charles would pull some counting trick out of his sleeve, probably having something to do with "purchasing power parity." I didn't need to say anything, for Charlie stuck his head in and asked if we might schedule lunch. Charlie was gracious in defeat and in picking up the tab at Michael's in Santa Monica. He is as good a loser as winner, though more experienced with the latter.

It turns out that this Russian bet was a Wolf sting operation. Readers may recall the famous line from *The Princess Bride*: "Never go in against a Sicilian when death is on the line." Heady with success, I readily agreed to the suggestion of a bet on the future value of China's currency against the dollar. Like the Wolf that he is, Charlie licked his chops. A year later, we were lunching at my cost at an expensive Santa Monica restaurant (of his choice, come to think of it).

Wolf tennis bears a striking resemblance to Wolf policy analysis: precise, fierce, courteous, tireless. Using his racket like a scalpel—drop-shots, lobs, English, and unreal ability to find the lines—Charlie combines skill and conditioning with psychological warfare. That's all I can recall, for I have repressed my memory of my several defeats.

Jim Thomson asked me to chair the committee to find someone to succeed Charles as dean of RAND's graduate school, where Charles was the founding and only dean for 16 years. This was like being asked today to line up a successor for Vladimir Putin: difficult, if not dangerous. Charles could not have been more open, helpful, and grateful for the effort we were making to live up to his legacy. This school, now the Pardee RAND Graduate School, is the finest center of advanced public-policy study anywhere. Charles deserves the credit.

The good place to close is by praising the ability and commitment of Charles Wolf to excite and mentor young researchers. If you check his bibliography, you will notice how many of his coauthors went on to make contributions in the field. This is no accident: Charles has always had a sharp eye for aptitude and, more important, the patience, steadi-

ness, and even kindness it takes to bring young talent along. Just as Charles keeps on keeping on, the ranks of those he has mentored grow.

In the best of all possible worlds, there would be many Charles Wolfs. In reality, there is only one.

# Looking Backward, and Forward

*Eric Larson*

I've had the pleasure of knowing Charles since 1989, when I entered RAND's graduate school as a doctoral fellow and he served as founding dean of the school. While it's been only in recent years that I've had the pleasure of actually working with Charles, his analytic and writing ability and his dedication to the education and intellectual development of younger associates have long inspired me.

Consider first Charles's publication record. According to RAND's publication database, Charles has authored or coauthored nearly 175 publicly available reports, books, and other publications since 1956, with a nearly equal number of internal notes, drafts, and other documents that have not enjoyed wider distribution. In each of the four decades from the 1960s to the 1990s, Charles had more than 30 publications, his output peaking at 41 publications in the decade of the 1980s. (One suspects that he was particularly inspired in the Reagan years by the prospect of hastening the Soviet Union's demise.) Frequently, Charles's work has had enduring relevance, as in the case of *Rebellion and Authority*, the seminal study of counterinsurgency he coauthored in 1970 with Nathan Leites.[1]

Even more impressive to me has been Charles's ability to meet the quotidian analytic demands of RAND's clients while still addressing broader topics and audiences. Charles produced perhaps 90 "P"-series publications, a now-defunct series of RAND publications that allowed staff to publish op-eds, essays, white papers, and other personal mus-

[1] See Ann Marlowe, "Supply-Side Foreign Policy: What Would Charles Wolf Jr. Do in Afghanistan?" *Weekly Standard*, February 7, 2011, available at http://www.weeklystandard.com/keyword/Nathan-Leites, as of June 2015.

ings. RAND's database lists at least 12 additional commercial books authored or coauthored by Charles, including collections of essays previously published in leading national media. Most recently, these have included *Looking Backward and Forward: Policy Issues in the Twenty-First Century* (2008), and *Puzzles, Paradoxes, Controversies, and the Global Economy* (2015).

As impressive as the volume of this output may appear, when one reads Charles's writing, one encounters a protean intellect with wide-ranging interests and is rewarded by his uncanny ability to speak with clarity, rigor, and authority on the widest imaginable spectrum of policy issues, whether historical, contemporary, or prognostic.

Charles has always addressed the large issues of the time—whether foreign assistance in the 1950s; counterinsurgency in the 1960s; the U.S.-Soviet military balance, oil and energy markets, and the Soviet Union's economic weakness in the 1970s and 1980s; or China's economic rise more recently. He has frequently offered us sketches of what might lie just over the horizon, as in *Asian Futures* (1968), *Computers and Economics: Progress, Problems and Prospects* (1971), *Long-Term Economic and Military Trends, 1950–2010* (1989), *Long-Term Economic and Military Trends, 1994–2015: The United States and Asia* (1995), *Fault Lines in China's Economic Terrain* (2003), and *China and India, 2025: A Comparative Assessment* (2011).

Equally apparent is Charles's intellectual creativity and iconoclasm, manifest in a unique ability to turn ideas and orthodoxies on their heads, or inside-out: *The Present Value of the Past* (1969) and *"Non-Market" Failures and Market Failures* (1978) come to mind. Also apparent is a penchant for clever turns of phrase that betray the keen sense of humor lurking within: *Military-Industrial Complexities* (1969), use of the acronym HAM (for "Hearts and Minds") in the aforementioned *Rebellion and Authority*, *A Dialogue on the North-South Dialogue* (1977), *The Common Sense of a "Common Market" in the Commonwealth of Independent States* (1994), and *The State of the Russian Economy and the Economy of the Russian State* (1995). Such wordplay has always been an irresistible invitation to the reader, the promise of something more than mere analysis: sophistication and insight, of course, but also provocation and wit.

Equally inspiring to me has been Charles's loyalty and devotion to his colleagues. *Remembering Nathan Leites: An Appreciation*, the volume of reminiscences of his friend and colleague Nathan Leites that Charles edited comes to mind, as does his assistance to Jody Goldhamer in arranging publication by RAND of her husband Herbert's memoirs of the Korean armistice conference,[2] not to mention the many opportunities and kindnesses Charles routinely has extended to younger associates, including me.

To my eye, Charles hasn't changed all that much over the 25 years I have known him. (I have long suspected there must be a portrait of Charles in his attic that provides a truer accounting of his years . . . .) Indeed, he remains as active and analytically sharp as when I first met him, and he continues to speak in concise yet fully formed paragraphs, or even outlines ("1a," "1b," "1c," "2a," and so on), while retaining his wiry athleticism (due to a steady diet of tennis, no doubt).

It's only been in recent years that I've actually had the opportunity to work with Charles, mostly on research related to China. As a longtime admirer, I've viewed this opportunity as one of the more delightful surprises and privileges of my career. One of my favorite stories is when Charles arrived a few minutes late for a meeting of our study team, apologizing that "it took a little longer than usual to jog down" to the conference room. I didn't think anything of this until after the meeting ended, when I exited the conference room a few moments after Charles, only to observe him already in a brisk trot down the hall en route to his office: As ever, Charles had not been speaking metaphorically but had been quite precise and literal about the circumstances that had delayed him.

My hope is that Charles will continue to look both "backward and forward," and, more selfishly, that there will be additional opportunities to work with, and learn from, this inspiring and indefatigable man.

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[2] Herbert Goldhamer, Andy W. Marshall, Ernest R. May, *The Korean Armistice Conference: A Personal Memoir*, Santa Monica, California: RAND Corporation, P-7869, 1994. As a doctoral fellow in RAND's graduate school, I was recruited by Charles to assist with this project.

# Charlie Wolf, the Decline of the Soviet Union, and the Rise of China

*Andrew W. Marshall*

Beginning in the late '60s and early '70s, questions were raised about the truth of estimates of the burden on the Soviet economy of its large and growing military programs. The Central Intelligence Agency's view was that between 6 and 8 percent of the Soviet economy, which was estimated to have a gross national product about 50 percent of that of the United States, was devoted to military programs. This was largely accepted. Indeed, Soviet GNP was said by many to be growing more rapidly than U.S. GNP, and some (e.g., Paul Samuelson) thought Soviet GNP might be larger than U.S. GNP by sometime in the 1990s. If so, the prospects for the United States outlasting the Soviet Union, or that the Soviets would find the burden too heavy to bear, looked bleak.

Jim Schlesinger questioned this estimate of the burden while he was the Director of Central Intelligence and when he became the Secretary of Defense. One of the first things he asked me to do when I joined him at the Department of Defense was to draft another query on this matter, and to ask again that the CIA review its position. Thus began a very long process of finding things that had been uncounted as part of the Soviet Union's military programs, or whose cost might have been underestimated. Gradually, the agreed military burden estimate grew to about 16 to 18 percent of Soviet GNP.

In the early '80s, I asked Charlie to look beyond the Soviets' military programs and to explore the cost of the Soviet empire. He finished his excellent study by 1984. This added, perhaps, another 3 to 4 percent to the combined military and empire burden.

All this increased the numerator, but in the late 1970s Soviet émigrés and Soviet economists still in the Soviet Union began to question the accepted estimates of the size of the Soviet GNP. Instead of being about 50 percent of U.S. GNP, it was more likely to be one-third to one-quarter of the U.S. GNP. If so, the military and empire burden might be somewhere in the region of 25 percent to 35 percent of Soviet GNP, a possibly unsustainable level.

I relate this very rough and incomplete history to note Charlie Wolf's important role in arriving at an estimate of the cost of the Soviet empire and his early interest in and adoption of the view that the size of the Soviet GNP was substantially overestimated. He was one of the few to do so; there was no broader acceptance until much later. The 1990 book *The Impoverished Superpower*, co-edited by Charlie Wolf and Henry Rowen, contains chapters by a number of analysts who were the early questioners of the dominant view. These were the heroes of the period, in my view, the good guys who deserve more credit than they have received.

In mid-1986, Fred Iklé, at that time Undersecretary of Defense for Policy, asked Charlie Wolf and me to lead one of the four panels created to support the Commission on Integrated Long-Term Strategy. We were to supply a 20-year projection of the future security environment facing the United States. This was to include projections of economic growth of the major powers, their technology and military forces, likely threats, important political-military contingencies, etc.

This panel report still reads well, noting the economic rise of China and East Asia more broadly, including the likely growth of India and low growth of Europe and the Soviet Union. Charlie and his colleagues at RAND were solely responsible for these 20 years of economic projections. It would have been even better if Charlie and I had been allowed to reflect our views on the likely size of the Soviet GNP in 1986. We would have cut the accepted estimate in half, but Iklé did not allow that. He thought that doing so would lead to cuts in the U.S. defense budgets and jeopardize the effort to keep pressure on the Soviet Union. He feared that the United States might ease up too soon. Maybe this was a wise decision, maybe not.

The projection of the likely future growth of China's GNP led me to conclude that China would naturally invest in a more powerful military in the future and would become the leading candidate to replace the Soviet Union as our major competition and possibly challenger. Not sure, but likely to happen. Again, Charlie Wolf had an important role.

So Charlie, in addition to his many other accomplishments in the more traditional areas of economics, has had an important role in defense decisionmaking. He has been an important source of useful analysis and generally wise assessment of long-term trends and the relative size of resources available to our competitors and rivals. A good, wise man, and a friend for 60 years.

## Expanding the Audience, Spreading the Word

*Newton N. Minow*

My first exposure to RAND was in 1961, when I was helping to develop the first communications satellite, Telstar. At the time, I was Chairman of the Federal Communications Commission in the Kennedy administration. Dr. Frank Stanton, then president of CBS, was on the RAND board and suggested I consult RAND, which had expertise in communications satellite technology. So on a trip to Santa Monica, I visited RAND and heard a valuable briefing that was put to good use in Washington. Telstar was our first successful venture into space, with the ability to telecast the first live program seen simultaneously in Europe and the United States—and also put us ahead of the Soviet Union in the space race.

When I left the FCC, RAND invited me to become a trustee and eventually to become the chairman of the Board of Trustees. I served on the RAND board for 30 years, in good and bad times, learning all the time and making many friends. One of the best was Charlie Wolf, a rare type of economist who had both a sense of humor and an original mind. From time to time, Charlie would brief the board on some difficult issue, to which he brought rare insight and uncommon perspective.

After one meeting, I suggested to Charlie that he write some op-eds and essays because I believed that his views deserved a wider audience. He began to do this. Before long, he became a respected contributor to national and international publications. He also wrote books, and his scholarship extended to many national and international issues.

For RAND, Charlie was a founder of the graduate school, and I was honored to be RAND's chairman when the school opened to students from many parts of the United States and the world. The school would not have happened without Charlie's leadership, vision, and ability. Today, it is one of RAND's important contributions to our country, and its graduates have become leaders in their disciplines and scholarship. It is a proud legacy that Charlie gave not only to RAND, but to the life of the mind and the capacity to think constructively about how to make this a better world.

Charlie has given 60 productive and constructive years of service to RAND. And the best is yet to be.

# Charles Wolf and the Economic Dimensions of International Security

*C. Richard Neu*

Within Charlie Wolf's large and wide-ranging body of work, a few recurring streams of analysis have drawn my attention over the years: economic development, particularly in Asia; the economics of communist systems and their later transitions to market-oriented societies; foreign aid and security assistance; burden-sharing among allies; and the consequences of macroeconomic policy choices. These areas of analysis stand out partly because Charlie has returned to them repeatedly and productively throughout his long career. They stand out in my mind also because they align with my own interests, which were no doubt influenced by my association with Charlie from an impressionable age.

Each of Charlie's reports, essays, and commentaries is grounded in the circumstances of particular countries at a particular time and with respect to particular policy choices. As a consequence, these writings are direct, practical, and frequently influential. They address specific questions that matter and contribute to specific policy debates.

I think, though, that, taken together, these individual analyses add up to something broader and with relevance to circumstances and policies well beyond the specific cases that Charlie deals with. In retrospect, it seems to me that, gradually over the years, project by project, report by report, Charlie has exposited a way of understanding how economic forces shape the international political and security environments and how economic instruments can advance U.S. and Western interests. Perhaps without explicitly intending to do so, Charlie has provided the larger analytic community with a way of considering

what I've come to think of as the economic dimensions of international influence and security.[1]

That economic conditions underlie all international relations is, as Jane Austen said in a different context, a truth universally acknowledged. What nations can produce, how they obtain what they can't produce, and their changing resource endowments combine to shape how they *can* act on the world stage and frequently how they actually *do* act. But acknowledging this simple truth is not the same thing as applying it insightfully to analyses of international relations, a field too often dominated by political and military analyses.

Charlie's contribution has been in teaching us, mostly by example, just how to go about this application—how to think about evolving endowments of labor, capital, know-how, and institutional infrastructure; what economic factors should be on our mental checklists when we assess national circumstances and possibilities; how we can give material assistance to our friends and what we might reasonably ask in return; and how we occasionally undermine our own position or influence with clumsy economic policies. Charlie's body of work constitutes a master class in bringing economic analysis to bear on important questions of security and international influence. The power of thinking about the economic foundations of international affairs is apparent in Charlie's initially outlying but eventually mainstream projections of first Soviet and then Chinese economic growth prospects and the consequences of each for Western security interests and policies. There is much in these case studies for the attentive student to apply elsewhere.

The quality and value of Charlie's analyses derive, to an important degree, from the style with which he pursues these analyses. I recently came across a nice description of what we economists should strive for, at least on our good days: "What we can aspire to establish is a combination of logic, modeling, suggestive anecdote and experience, and empirical measurements from different perspectives that lead

[1] I can't claim independent credit for this formulation of Charlie's larger intellectual contribution. Twenty years ago, he and I collaborated on a RAND report titled *The Economic Dimensions of National Security*. The phrase, with modest variations, has stuck with me since.

to an overall view of economic phenomena."[2] This is the combination that characterizes all of Charlie's work. Especially effective is his use of suggestive anecdote and (certainly in Charlie's case) quite extensive experience.

An anecdote of my own may illustrate Charlie's dedication to really knowing some ground truths about a situation as an essential part of any analysis. Some years ago, Charlie and I both served on the dissertation committee for a promising doctoral student. This dissertation focused on the controversial (then and now) practice by major art museums of occasionally "deaccessioning" redundant or noncore artworks to allow the acquisition of other, more-pertinent works. Both Charlie and I judged the resulting dissertation to be excellent—but it, and by extension the committee that approved it, came in for some criticism in certain circles because it did not contain the sort of fancy quantitative analysis that was fashionable in academic circles then (and sadly still is today). Charlie replied to this criticism—graciously and calmly, as was his habit—by pointing out that the student had immersed herself for extended periods in the actual operations of two major museums and that he, Charlie, found it refreshing to read a dissertation that reflected not just quantitative abstractions but real understanding of actual institutions. That was probably the most important lesson he could impart to the student—and to the critics.

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[2] Lawrence H. Summers, *Economic Possibilities for Our Children, The 2013 Martin Feldstein Lecture*, National Bureau of Economic Research, July 24, 2013. It is perhaps noteworthy that the inspiration for this characterization of good economic analysis was the work of Martin Feldstein, a longtime friend of and sometime visitor to RAND during Charlie's time as head of the economics department.

# Charles Wolf and His Influence on Policymaking

*Donald Rumsfeld*

Dr. Charles Wolf, Jr., is an exceptional talent, a valuable national asset, and a friend. His research and analysis have contributed greatly to critical public-policy discussions over many decades, and indeed to needed adjustments in U.S. policy. Further, through his leadership and teaching in government, at RAND's graduate school and other institutions, he has helped to mold more than one of the next generation's policy leaders.

Dr. Wolf has been a part of RAND nearly since its beginning in 1948. He and his colleagues helped found the Pardee RAND Graduate School—the only Ph.D. program based at an independent public-policy research institute.

From the Foreign Service to academia, Dr. Wolf has observed as our world has evolved.

When I was first elected to the U.S. Congress back in 1962, he had already waded deep into the issues that were shaping our country and the world. In the years following, as I served in various public and private posts, Charles became a valued source of analysis that provided guidance and insight to policy decisions for our country.

When I left government for private business in 1977, I was approached by my friend, Newt Minow, then the Chairman of RAND, who encouraged me to join the RAND Board of Trustees. I had known Andy Marshall and Don Rice while still in government and, to my benefit and pleasure, came to know Charles Wolf as a new member of the board.

In 1987, I was privileged to write a foreword to *The Future of the Soviet Empire*, a book Dr. Wolf was coediting with Professor Henry

Rowen. I understood well the value of Dr. Wolf's work in national security and international economics—particularly, in this case, on the economics of communist systems and the transition of postcommunist economies to new economic models. As so many others did, I gained insight from the profile of the USSR and the cogent policy positions presented.

Dr. Wolf became the authority in his field—the intersection of economic and foreign policy—six decades ago. His body of work has assisted senior public servants to know more, think harder, be wiser, and make better-informed policy decisions on behalf of the people of our country. From Cold War politics and postcommunist economics in the 1950s to the subsequent fall of the Soviet Union and, more recently, economic relations, international trade, and the economics and security of East Asia, Charles has never hesitated to write what he believed, even though it may not have conformed to the then-conventional wisdom.

I, like so many others, have benefited greatly from Dr. Wolf's pioneering research. His work has been influential over the course of so many decades, to the great good fortune of our country.

Dr. Wolf has been a forward-thinking leader whose contributions will continue to impact the United States and other nations around the world. We are indebted to Charles Wolf for his 60 years of remarkable work on some of the most complex and important issues facing our world.

# Charles Wolf and Public-Policy Education

*Thomas C. Schelling*

I knew Charles before he moved to Santa Monica. I thought his idea for a school of public policy was a good one. I had no idea how good it was going to prove. I was on his academic advisory board for some 30 years until it became a governing board, and then for five years until mandatory retirement. I know the Pardee RAND Graduate School well and know that there is nothing like it elsewhere in the world. I don't know whether to congratulate Charlie most on his idea and his concept and his energy in getting the school established and recognized, or on his 30 years or so of deanship while it became such a fantastic success. I must congratulate RAND itself on having the good sense to recognize what the school could do for the corporation. Charles must be proud; we are.

# Keep the Ball in Play! An Appreciation of Charlie Wolf

*Richard H. Solomon*

One of the great pleasures of RAND is the opportunity to work with highly intelligent and stimulating colleagues—professionals who easily become friends as well as working collaborators. My personal as well as professional life over my decade and more with RAND has been enriched by the opportunity to work with, and compete with, Charlie Wolf.

Any assessment of Charlie's contribution to the organization naturally begins with recognition of his diverse intellectual contributions over more than six decades. The voluminous record of his written work is, in itself, a catalog of creative and relevant publications. Almost all reflect collaboration with a wide range of colleagues, beginning with such other intellectual superstars of the RAND firmament as Nathan Leites and Jim Schlesinger. His work since the mid-1950s spans virtually the entire intellectual history of the organization.

Charlie's writings, grounded on the intellectual discipline of economic analysis, bring rigor to subjects that—I speak as a political scientist—would otherwise lack structure and quantified dimension. And, viewed from the perspective of a specialist in Asian affairs, Charlie's wide-ranging analyses of issues from the two Koreas, to China, to Southeast Asia have enriched our understanding of processes of economic development and defense policy.

Charlie's organizational contributions to RAND are highlighted by his leadership in establishing and overseeing the Pardee RAND Graduate School. Pardee RAND is Charlie's intellectual grandchild. Its numerous graduates, armed with quantitative methodologies and

appreciation of public-policy issues, give generational outreach to his analytical style.

Charlie has long made significant contributions to public-policy discourse on international affairs through his op-eds, regularly published in the *Wall Street Journal*. They often provide insights contrary to conventional wisdom and thus broaden and refocus public debate. (If only the *New York Times* would publish his pieces!)

My most personal appreciation of Charlie, however, has come on the tennis court. His style of play evinces all that we admire in his approach to life and work: His game is disciplined, unrelenting, and often as contrarian as is his analytical work. Charlie does not hit the ball hard; his skills are placement and persistence. You think you can overpower his soft shots, but in fact his unceasing returns lead you to over-hit—and you end up beating yourself!

However frustrating Charlie may be on the court, we value his competitive endurance, just as we learn from his often-counterintuitive analyses. With over six decades and more at RAND, and surely more to come, keep the ball in play, Charlie!

And let me add that no appreciation of Charles Wolf would be complete without recognition of his wonderfully hospitable and creative Trese!

# Charles Wolf: Scholar, Leader, and Friend of Romance

*James A. Thomson*

To say that Charles Wolf has had a distinguished career would be a great understatement. His research has covered a broad swath of public policy, both national security and domestic policy issues. He lists on his RAND biography China, international economic relations, international trade, Japan, North and South Korea. But these are only the areas of his recent work. During the Cold War, his work also covered the Soviet Union. Arguably, his most influential paper was "The Costs of the Soviet Empire," written in 1982. It analyzed the costs associated with maintaining the USSR's global alliances, of which the largest chunk was in trade subsidies. He and his colleagues estimated the total cost as 3.5 percent of Soviet gross domestic product. This cost, plus the larger military budget, created a considerable drag on the Soviet economy. This research, of course, predated the rise to power of Mikhail Gorbachev and his efforts to reform the Soviet economy and to reduce the burdens of military spending and of empire.

While ranging widely over policy topics, Charlie (as he was known when I arrived at RAND in 1981) never lost touch with his original discipline of economics. He wrote widely on economics and still does. Perhaps his most original contribution was his book *Markets or Governments*, which "provided a formal theory of non-market failures" in government and other places, such as universities.

In addition to his scholarly portfolio, Charles took on leadership roles at RAND. He was both the founding dean of the graduate school and the chairman of the economics department, two jobs that he handled at the same time for many years, including the years when he produced the "Cost of Empire" paper that I just mentioned. For several

years after he left the chair of the economics department, he was also the leader of the U.S.-Japan Center, now known as the Center for Asia Pacific Policy. His publications list shows no diminution of research productivity during the years that he held all these jobs.

These jobs were about people: hiring and managing researchers for RAND as chair of the economics department and training the next generations of policy analysts in the graduate school. I suspect that these roles have had a similar effect as his research. As I used to tell some of my management team (only the ones who needed to be reminded): It is not what you personally do; it's what your people do. They will make you look good, or not. Charlie touched many people through these two roles, many of whom have gone on to influence public policy through their own research or leadership roles. They have helped make Charlie look good.

Inevitably, anyone with a career like Charles's is going to provide a lot of fodder for stories. And Charles is definitely not an exception to that rule. I'll add a couple that I have never told before.

In 1984, Don Rice, then the president of RAND, decided to promote me to be a RAND vice president. I was invited to an impromptu officers' meeting for Don to announce this to the other officers, which included Charles as dean of the graduate school. As the meeting broke up, Charles came up and said to me "Don't let it go to your head."

Why did he say that? One possibility is that he had sized me up as a person who let things go to his head. Maybe I was arrogant and Charles was just taking me down a peg. Another explanation is that, during his long RAND career, he had seen others let things like a promotion go to their heads, and he was just providing a friendly piece of advice to a youngster. That's plausible, because even though I don't think I was arrogant, there was no shortage of people at RAND who thought highly of themselves and who did let things go to their heads. A more likely explanation is that Charles was projecting, in the psychological sense—the attribution of one's own attitudes, feelings, or suppositions to others. Of course, that is never conscious. I can't imagine Charles saying to himself something like "Boy, if I got that job, I would let it go to my head." No way! But something was going on in

his mind that led him to blurt out that remark. I choose projection as the explanation.

Charles was such a great dean of the RGS that it's hard to find fault with anything he did, including hiring my later-to-be wife as assistant to the dean for administration. The school was smaller during Charles's tenure; annual admissions were usually around ten. Darlene and two secretaries were full-timers. That was the entire administration, Charles plus three. It is a testament to Charles's administrative efficiency that he did the job half-time, while also chairing the economics department, leading the U.S.-Japan Center, and doing research.

Charles and I did not see eye-to-eye on one recurring issue—fundraising. After becoming RAND president, I thought the graduate school was the easiest "sell" we had at RAND to kick-start our nascent fundraising efforts. (And so it has proven to be.) Actually, Charlie and I probably did see eye-to-eye in principle. Charles was definitely in favor of raising money for the school. But, in practice, he was not raising money; nor—although he will vigorously deny this—was he cultivating potential donors. The advisory board for the school was an academic board. Great people, but not the best group of potential donors. At an officers' meeting in the early '90s, I reminded everybody, but really aimed at Charlie, that we were a charity and should not be afraid of asking for money. David Lyon, a RAND vice president at the time, told me afterward that Charlie felt that charities help poor people, and that intellectual organizations are not charities.

Around this time, I invited Graham Allison, the former dean of the Kennedy School at Harvard and a renowned fundraiser, to visit RAND to talk about his research, but also to spend time with me giving advice about fundraising. In the course of this conversation, he told me that in order to raise money, the fundraiser has to lower his ego below the ego of the prospective donor. Aha!

Notwithstanding this, Charles and Theresa have been generous donors to the graduate school. They've set an example that the current dean can point to as she aggressively raises money for the now-named Pardee RAND Graduate School.

Charles probably doesn't realize it, but Darlene and I owe him a debt of gratitude. In 1989, Don Rice announced that he was leav-

ing RAND to become Secretary of the Air Force. I was a candidate in the subsequent search for his successor. Darlene was my girlfriend. Since she was an employee of RAND, I would become her boss once removed, because she would report to Charles. I was asked about this during the final interview and, to the best of my recollection, told the search committee that, if I were chosen, all personnel issues involving Darlene should bypass me and go directly to the board chairman.

According to what a couple of trustees told me later (these things seep out slowly), that was not satisfactory to some trustees who apparently would have preferred that Darlene leave RAND if I were chosen. This was raised with Charles, who, it seems, told the chairmen of the search committee that he and all the women at RAND would raise a ruckus if Darlene were turfed out because I was made president. That was the end of that, and my proposed solution was implemented. Thank you, Charles.

# Dr. Charles Wolf's Intellectual Contributions

*Daochi Tong*

It is truly a great honor to be invited to write a commentary on the significance of Dr. Charles Wolf's intellectual contribution to celebrate Dr. Wolf's 60th anniversary with RAND. But it is also a substantial challenge for me, as Dr. Wolf's work in the last 60 years has covered so many areas: from national security and U.S. foreign policy to economic theory and the roles of governments and markets; from international finance, trade, and currencies to foreign aid and international assistance; from the former Soviet Union's, Russia's, and Eastern Europe's transitional economies to Chinese, Indian, Japanese, and Asian economic development; from U.S.-China economic relations to the global economy. I believe none of us would be able to describe the breadth of his intellectual contributions and output. So let me try to concentrate on some of the areas that I am familiar with.

From the perspective of economic theory, I believe his most significant contribution would be the theoretical framework he developed on "non-market failure." A theory of market failure is well established in the economic literature. This theory constitutes the basis for government intervention in the economy and society, calling for the supply of public goods by governments. There had, however, been no similar theory of nonmarket failure. Dr. Wolf's work filled this gap with a formal theory of nonmarket failure, first published in 1978 in his RAND report *"Non-Market" Failures and Market Failures*, which was further developed in his 1993 report *Markets or Governments: Choosing Between Imperfect Alternatives.* Dr. Wolf's analysis has strong implications for countries moving from central planning to a market-oriented economic regime. As we have witnessed from the experiences of such

transitional economies, neither markets nor governments are perfect. Policymakers have to consider the deficiencies of both markets and governments when making economic decisions and policies.

Dr. Wolf has, for many years, paid great attention to the study of the Chinese economy. In my mind, his most significant and influential contribution in this area would be the 2003 book *Fault Lines in China's Economic Terrain*, which outlines the major challenges that China might encounter in its economic development and considers how severely China's growth may be affected. Among the potential fault lines identified are unemployment, rural poverty, corruption, epidemic disease, limited water resources, pollution, energy, and an underdeveloped financial system. Indeed, China has encountered many of these issues in the past ten to 15 years, such as the epidemic of severe acute respiratory syndrome, water shortages, severe pollution, and sharp price fluctuations for oil and other major commodities. Fortunately, China has managed most of these difficulties successfully and maintained a high growth rate. But as China enters a period of single-digit growth and focuses more on sustainable development, many of the challenges outlined in the book still exist. Smooth sailing through the adversities would guide China to a new level of development.

Undoubtedly, Dr. Wolf's study of China goes way beyond what I described above. He attaches great attention to U.S.-China relations and has created a channel for regular exchanges of views between Chinese and American scholars through RAND's cooperation with the China Reform Forum. Volumes of CRF-RAND conference proceedings edited by Dr. Wolf contain papers presented by top experts on U.S.-China relations from both countries and are valuable reading for academics, business leaders, and policymakers alike.

Dr. Wolf's more recent book *China and India, 2025: A Comparative Assessment* is a thorough empirical study and estimation of what may happen in the world's most populous countries, China and India, in the next decade. The comparative analyses of demographic change, macroeconomics, and science and technology are the most enlightening to me. China is now an aging society, and the population dividend that supported past Chinese growth is expected to end in the coming years. How to deal with the challenge is one of the top priorities for

the Chinese government. Dr. Wolf's study offers an answer: "Whether China's demographic disadvantages will be a drag or a dividend will depend on the extent to which these demographic circumstances provide a stimulus to improving technology and to raising the skill and productivity of a shrinking labor force." As China is putting more resources into R&D and encouraging grassroots innovation and entrepreneurship, I am confident that China will overcome this hurdle.

I have always enjoyed reading Dr. Wolf's regular commentaries in the *Wall Street Journal* and other media. With a sharp mind, he often challenges conventional wisdom on some of the hot topics with his unique analysis and perspective. Those topics include whether the Chinese currency is significantly undervalued or "manipulated," an issue frequently raised by the U.S. Congress and government. Dr. Wolf's commentary, "A Liberated Yuan Is Likely to Fall," which originally appeared in the *WSJ* in 2014, argues that if the Chinese currency becomes fully convertible on the capital account and if the exchange rate relies more on market forces, the yuan's value is likely to depreciate. Indeed, a 2015 IMF report finds that the yuan is no longer undervalued and that the yuan's exchange rate is very close to the equilibrium market value.

Dr. Wolf's most recent commentary about China is "The U.S.-China Crossover," originally published in the *Weekly Standard* on March 20, 2015. As China has become the second-largest economy in the world, many economists are forecasting that China will surpass the United States sometime between 2020 and 2025. Dr. Wolf's commentary offers a different view based on China's slowing growth rate in recent years. More importantly, he argues that, "GDP is, at most, a partial and imperfect indicator of leverage and power in global economics and world affairs."

I had the good fortune to study and work under the mentorship of Dr. Wolf while I was with RAND in the 1990s. I coauthored several reports with him on such topics as transitional economics, trade, and emerging-market economics. He also served as the chairman of my dissertation committee at RAND's graduate school. My dissertation, *The Heart of Economic Reform: China's Banking Reform and State Enterprise Restructuring*, received an award from RAND, and a revised

version was published as a monograph by Ashgate Publishing of the United Kingdom. It would not have been possible without his guidance and support.

## On Charles Wolf

*Hui Wang*

Charles is a fun friend whom I am lucky to have. As a friend, he shares his insights, explains what he is doing, asks about what you are doing, seeks confirmation or clarification of his understanding of what you have said, comments on how you may do something differently than you have done it, renders you his unwavering support more than generously, and enjoys staying close with you.

Charles sees undefined values in young people. To him, each young man or woman has the hidden facets of a splendid diamond. He helps to uncover them and make them shine. He naturally involves students and young people in his projects because he enjoys working with them. He is happy to see them succeed and cheers for them unreservedly. He often talks about how bright and smart these individuals are. He is quick to give credit to students who work on his projects.

Charles has a global vision with curiosity. He entertains stories from Indonesia, Turkey, Ukraine, Japan, and China. He tirelessly follows the developments in Asia, Europe, the Middle East, and South America. His diversified interests and his profound understanding of a complicated world keep him on top of ever-changing events and in the forefront of strategic thinking. Although a recognized authority on international economic issues, Charles modestly listens to and eagerly learns from others, often from different backgrounds. One day, a scholarly bank CEO from China visited Dr. Wolf at RAND with admiration and intended to listen to Dr. Wolf. However, when leaving the meeting, he found that he had done most of the talking, while Dr. Wolf had quietly listened and asked just three questions.

Charles Wolf has advanced our knowledge about China and contributed to preparing the United States and the world for a fundamentally transformed and rapidly rising China.

In early 1988, a report by the Commission on Integrated Long-Term Strategy jolted the security and policy circle of the United States and its major allies across the Atlantic by projecting, among other developments, the historic shift of world economic weight from the Atlantic to the Pacific. This report projected that China might rise, passing Japan, to become the second largest economy in the world by 2010. At the time, China was ranked tenth globally by official gross domestic product. This projection was made at the height of China's struggle to dismantle the Soviet-style planning system and liberalize the economy while desperately steering away from a perilous spiral of inflation and other transitional chaos. This forecast immediately amazed me.

Several years later, when Albert Wolhstetter, cochairman of the commission, gave me an original copy and explained the fascinating debate around this pioneering report, he largely credited Charles Wolf for research on the trend of the Chinese economy. Charles was one of the chairmen of working groups for the report. In 2010, China actually exceeded Japanese GDP at both nominal and purchasing-power-parity exchange rates. When the earlier China projection was, naturally, mentioned to Charles, he humbly referred to the work of RANDite K. C. Yeh. What a fine scholar and colleague!

Around 1996, Charles proposed the idea to identify, select, and collaborate with a Chinese research institute to form a platform for discussion on economic and security issues mutually interesting to the United States and China. This led to about 15 years of RAND–China Reform Forum (CRF) annual conferences. Through this platform, Charles orchestrated, in Santa Monica and Beijing alternately, an annual exchange of ideas and theories among scholars, current and former officials, advisers, and generals from both the United States and China.

In 2001, while many were wondering at the nearly double-digit growth of the Chinese economy for over two decades with seemingly uninterruptable momentum, Charles analytically and judiciously

assessed its major fault lines and the magnitudes of their deceleration impacts. At a RAND–CRF conference in Beijing, Charles distinctively highlighted potential adversities, both internal and external, underlying the economic miracle, which could hinder China's continued growth. These included corruption, limited water resources, pollution, epidemic disease, unemployment, and rural poverty. Although his insights were instantly impressive, they are being validated more and more over time. A year later, for instance, severe acute respiratory syndrome (SARS) broke out massively in China. As a result, cities and population centers throughout China were under threat, stores and schools shut down, and transportation stopped. Then, astonished by the prescience of Charles's study, publishers suddenly competed to publish it in Chinese. Furthermore, the world has witnessed China increasingly challenged by economic deceleration and widespread corruption. For these insights and more, Charles is admired for his lasting contribution to understanding China.

# Charles Wolf's Prescient Analysis of the Chinese Economy

*K. C. Yeh*

Throughout his career, Charles has pursued studies of economic development and national security issues involving many countries in Asia. His research focuses mainly on the long-term economic trends that could significantly change the future strategic environment in the region, such as the growing economic and military imbalance between South and North Korea, the protracted economic stagnation in Japan, and rapid economic growth in China and India. He has produced a large number of reports, monographs, and articles on these issues. Anyone who reads his works will surely find a rich array of original ideas, incisive analysis, and interesting insights. Let me cite some examples.

In the 1980s, Charles undertook a major study to assess China's economic future. At that time, the Chinese economy was rapidly expanding as China began to reform its economic system. The crucial question was whether China could sustain its high rate of economic growth in the coming two or three decades. The Chinese government and many Western observers believed that China could. By contrast, Charles forecast a long-term economic growth rate considerably lower than what others expected. The sharp difference in outlook is partly due to the different statistics used. The optimistic forecasts were based on official statistics that exaggerated gross domestic product growth for a number of reasons. For example, the official data understated the size of GDP in the base period due to incomplete coverage of many economic activities, particularly in the services sector. At the same time, the price indexes used as deflators to derive GDP in constant prices understated the extent of inflation, because they were based on state-

controlled prices. The GDP data used in Charles's projections were adjusted for these biases.

More importantly, the basic approaches in Charles's forecasts were different. The optimists simply assumed that, with high savings, structural changes, and sensible economic policies, the Chinese government could sustain rapid growth for decades ahead. Charles's approach was somewhat different. He used a simple Solow-Romer–type framework to identify the main sources of growth and assessed how each of these might affect overall economic growth. From the vantage point of the late 1980s, he hypothesized that in the period 1980–2010, China's economy would evolve through three stages. In the first stage, 1980–1990, China would begin its transition from a planned to a market economy. The economy would grow quite rapidly, mainly as a result of institutional changes that removed many inefficiencies in the prereform system and an upsurge in the demand for basic consumer goods and services after decades of depressed living standards. The engine of growth that revitalizes the economy in this first stage would be private entrepreneurship.

In the second stage, 1990–2000, economic growth would accelerate to an even higher level, as China's export-led development strategy proved highly effective in exploiting China's comparative advantage, its massive supply of cheap labor. The engine of growth in the second stage would be the sharp rise in exports and inflows of foreign capital and technology.

Around the year 2010, the economy would enter its third stage, when a somewhat lower growth rate was to be expected, partly because growth from a much larger base now would be more difficult than from a smaller base in the earlier years. But, in the future world of Charles' forecast, there were more substantive reasons to anticipate a decline. China now had to divert resources to solve some formidable problems. By this time, the effectiveness of relying on exports to drive economic growth was on the decline. China's labor costs were rising, competition from other developing countries intensifying, and the pattern of world demand gradually shifting toward technology-intensive goods and services. China had to develop a new growth engine. Options were rather limited, and they all required large amounts of resources to develop.

Meanwhile, many deep-rooted problems that had been set aside earlier were becoming more acute and could be ignored no longer. Examples are pollution, corruption, and water shortages in North China. Furthermore, the military modernization program was rapidly expanding. Economic reforms were also moving into more difficult terrain, as the market system came into conflict with the Chinese Communist Party's economic and political interests. All these problems would have considerable negative effects on the sources of growth.

On the other hand, there were some positive developments. Decades of marketized reform had nurtured the growth of an entrepreneurial class. The rapidly expanding export sector had served as a training ground for large numbers of skilled workers and technicians. New industries had emerged as foreign factories moved to China. Substantial investments in human capital and R&D were bearing fruit. The Party leaders, too, were better educated and more experienced in managing the economy. But, all things considered, the Chinese economy was not likely to grow as fast as before.

This three-stage growth scenario provided the basis for projecting an initial rapid growth rate, which accelerated even further in the second stage but subsequently settled down to a much lower but sustainable rate of 4–6 percent. Charles later updated the projections in a study comparing China's and India's future growth. But the results remained basically the same.

What actually happened to economic growth in the period 1980–2015 corresponded roughly to the pattern depicted in Charles's scenario. Official sources report a continuous decline in the growth rate, from the two-digit levels in the 1990s and 2000s to around 7 percent in 2014–2015. Many Western observers have lowered their estimates and forecasts.

One distinct feature of Charles's research is the unique way he conceptualizes a complex situation in terms that capture succinctly the essential characteristics of the problem. For example, he titles two studies, *Fault Lines in China's Economic Terrain* and *North Korean Paradoxes*. The former highlights the many deep-rooted problems in the Chinese economy, such as the rapid aging of the population and the work force, acute shortages of water and energy resources, pollution,

a fragile financial system, widening gaps in income distribution, and rampant corruption. These problems have remained dormant thus far, but at some point they could erupt into severe crises. The latter title underscores the many future uncertainties and peculiar features of the North Korean economy, such as the overwhelming emphasis on military spending amid widespread poverty and state enterprises' rent-seeking activities, in contrast to South Korean enterprises' profit-seeking behavior.

Perhaps because of his broad knowledge of economic development in many countries, Charles frequently and effectively uses a comparative approach in his studies. For example, he compares the growth prospects of China and India, the military capabilities of North and South Korea, and long-term economic and military trends in the United States and Asian countries. He contrasts the bloated distribution system in Japan with its more efficient industrial organizations. Elsewhere, he designs alternative development strategies for China's Hainan Province in light of the development experiences of South Korea, Taiwan, and Hong Kong. In each case, he uses the contrasts and similarities to bring to light the unique features of the problems.

Most of Charles's research is policy oriented. His policy analysis is incisive and pragmatic, as it is based on sound economic reasoning as well as political and economic realities. One interesting example is his analysis of China's rampant corruption. He notes that marketized reform has been the cause of both economic growth and corruption. Reforms promote economic growth by removing many nonmarket institutions that stifle incentives to work and to innovate. At the same time, reforms also open up opportunities for government officials to exchange special privileges and inside information for economic gains.

This dualistic nature of economic reform with respect to corruption poses a policy dilemma. Should China slow down economic reforms to curtail corruption, at the cost of slowing down economic growth, or should China continue to push economic reforms, at the cost of rising corruption? China's leaders have opted for a political solution in the form of an extended anticorruption campaign. The problem with this solution is that it overlooks the root cause of corruption. The market economy in China is still underdeveloped. The state still inter-

feres with the market mechanism directly or indirectly; e.g., distributing land-use rights arbitrarily, setting prices, and giving state enterprises preferential treatment. As long as government officials remain active in playing a role that should have been left to the market, corruption is inevitable.

Charles rejects the option of slowing down reforms to curb corruption. Incomplete reforms might well create a situation in which state involvement in market transactions could do great harm to economic growth. But neither is the alternative of pushing ahead with reform while ignoring corruption any more viable. Charles distinguishes between two types of corruption: developmental corruption that oils the engine of economic growth, and parasitic corruption that drains resources which otherwise could have been used to generate economic growth. In Charles's analysis, corruption in China is largely the second type. This means that rising corruption is likely to have a net negative impact on economic growth.

Charles offers a way out of the dilemma: Expedite reforms to free the economy from state involvement in the market mechanism. This would allow economic transition to continue and thus contribute to economic growth, and at the same time it would eliminate many opportunities for government officials to seek illicit benefits. Charles believes that the government has an important role to play: building institutions to ensure that the market can function smoothly and efficiently, e.g., an independent legal system to protect property rights, enforce contracts, and safeguard free competition. Charles is a strong advocate of the market system, yet fully aware of possible market and government failures. For him, rolling back reforms to curtail corruption is precisely what a Chinese adage describes as a case of misplaced emphasis: cutting one's foot to fit the shoes.

There can be little doubt that Charles's work has influenced the economic thinking of many intellectuals and government officials in the United States and abroad. Scholars are interested in the many original ideas and insights in his work. Government officials take his views seriously, as Charles's research often sheds penetrating light on problems of concern to them. Rumor has it that Zhao Ziyang, China's

premier in the 1980s, read the RAND report on China's long-term economic trends and was surprised at the findings.

Charles writes lucidly and clearly. He disseminates his ideas to a large audience through RAND reports, monographs, articles in professional journals, and columns in major newspapers. He gives lectures in universities, attends international conferences, and frequently exchanges views with high government officials in Asian countries. For many years he organized annual conferences jointly with China's Economic Forum and the Central Party School, which at one time was headed by Xi Jinping, currently the Chinese Communist Party leader and the President of China. Many of Charles's publications have been translated into Korean, Japanese, and Chinese. Not surprisingly, in 2007, Japan presented Charles the Medal of the Rising Sun, clear evidence of the high esteem the Japanese have for him.

# Charlie Wolf: Wisdom as the Source of Rigor

*Benjamin Zycher*

I learned long ago not to attempt the impossible. Analytic questions not impossible but merely complex, and even those more-or-less straightforward, uniformly reveal themselves to be afflicted with ambiguities, detours, data problems, delays, and other such obstructions on the path toward enlightenment, or at least toward fulfillment of contractual obligations to sponsors.

It is clear that I have learned this lesson more thoroughly than has my old friend Dick Neu, who has undertaken the task—if not impossible, then herculean—of producing a volume conveying the incredible breadth and depth of the intellectual and policy significance of Charlie Wolf's work over these past six decades. I rather doubt that any single volume can achieve that end—even if "achieving" it could be defined—but I know of no one better suited than Dick to attempt this task. And so I thank Dick deeply for this opportunity to include my thoughts in this joyous endeavor.

Put aside Charlie's sharp mind and analytic rigor. Put aside his innate understanding of the subtleties and potential pitfalls inherent in the analysis of economic data, and of the very real need to exercise great care lest empirical "findings" yield myopia rather than insight. Put aside his intuitive grasp of when to pursue detailed and finely honed empirical estimates, and when it would be better to measure the rough magnitudes or bounds of a given question. And put aside Charlie's continuing efforts to combine analytic technique with actual knowledge of the subject matter under scrutiny, a talent that sadly has become increasingly rare in the modern economics profession.

What truly is central to Charlie's work is wisdom. Wisdom is both the origin and the dominant characteristic of Charlie's work generally, and of that part with which I am most familiar: his writings on the Soviet economy and the Soviet defense burden, on the longer-term implications of the eurozone, and on the prospects for the Chinese economy, at a time when much prominent opinion was decidedly bullish on all three. This wisdom on Charlie's part took two forms: a healthy skepticism toward the pronouncements of experts, and a decided preference for comparing the findings of "sophisticated" analyses with the truths offered by first principles.

In sharp contrast with much conventional wisdom, Charlie has understood clearly that expert opinion often is to be treated with less than full trust, as the experts are not merely disinterested observers, devoid of biases and the subtle influence of assumptions implicit and thus unquestioned. This is quite apart from the obvious truth that experts invariably disagree. Instead, they too are mortals, often displaying a blindness driven by groupthink, by best-in-the-world haughtiness, and by an insider-in-the-know bias. Accordingly, their pronouncements are not independent judgments; as Charlie sometimes put it in those rare moments when his diplomacy was less than perfect, the experts too often are members of "the cartel."

This larger wisdom on Charlie's part was manifest in his work on the size of Soviet GDP and the share of that output consumed by the defense sector. Undertaking his investigation partially in response to the estimates of Soviet economic performance published by the U.S. intelligence community, Charlie recognized that those GDP estimates seemed high in a way inconsistent with the eternal truth that central planning for the most part does not work, and that growth through ever-expanding resource extraction is at best very difficult physically, and is at the mercy of world market commodity prices as well. Moreover, simple on-the-ground observation—unscientific, unrandom, and unpublishable in peer-reviewed journals—would lead most to conclude that the observable Soviet economy simply did not work very well at all, and that the Soviet Union as a result was not particularly pleasant. (As the aforementioned Dick Neu commented to me sometime in the mid-1980s upon returning from a trip to the Soviet Union: "Gawd,

what an awful place.") Charlie recognized those crude realities even as the sophisticated analyses largely were blind to them.

Charlie also understood that any analysis of something as opaque as the Soviet economy must rely on an array of assumptions, and it is not difficult to choose among alternatives and to sequence them in such a way that their effects exacerbate rather than offset each other. What prices were appropriate for Soviet goods, many of which were uncompetitive in international markets? How should ruble prices have been converted into dollars? How should we have estimated physical output in a system in which incentives to falsify data were so overwhelming that the top leadership itself had a poor understanding of the actual state of economic affairs? What was the value of, say, an unfinished Soviet apartment building? It had yet to produce any services, but did the intermediate goods already consumed in construction have some value difficult to define? Well, yes and no. *Ad infinitum.*

No obviously "correct" answers to such questions were available, but the intelligence community had a job to do; analysis had to proceed, and policymakers' questions had to be answered. And those answers influenced decisions, regardless of the policymakers' poor understanding of the problems inherent in the underlying work. And this larger context had important implications for estimates of resource consumption by the Soviet defense sector, itself a parameter difficult to define. Were the costs of dual-use aircraft part of "defense"? What about electric generating plants engineered to produce nuclear materiel as a byproduct? (That the Chernobyl disaster was a direct result of such overlapping goals is an indicator of how pervasive this phenomenon was.)

And so Charlie applied wisdom to the question. Rather than attempt to untangle this Gordian knot, he returned to first principles. An economy's size over the longer term must be driven by resource availability, investment, the size of the labor force, improvements in productivity, and the institutional framework shaping incentives. Charlie also recognized that institutions change ever so slowly in most cases, so that a simple model incorporating reasonable projections of capital availability, the labor force, and technological advances would yield estimates not precisely accurate, but instead useful in terms of subject-

ing the official analyses to a reality check. Yes, this approach might miss considerable detail, but it is far less vulnerable to the unknowable biases created by sophistication.

The results of Charlie's wisdom were important insights challenging the intelligence community view that the Soviet economy was roughly half the size of that of the United States. A more defensible estimate was about one-third, with a corresponding increase in the share of Soviet GDP devoted to defense activities, from roughly 25 percent to 37 percent.[1] And even that increase in the defense share might be understated depending on what resource consumption is included in "defense." That the Soviet leadership under Mikhail Gorbachev—after the collapse of oil prices in 1986, and with the Hobbesian budget dilemma created by the Reagan defense buildup and missile defense proposals—opted for reforms that simultaneously were too little and too much suggests strongly that Charlie was right and the experts were wrong.

The creation of the eurozone elicited loud applause from many experts arguing that transforming Europe into a common-currency area would yield large economic benefits. These were to take the form of, *inter alia*, reduced transaction costs attendant upon the constant need to convert several currencies into each other, a reduction in the costs of adjusting to exchange rate fluctuations, greater resource mobility across European borders, and the creation of greater scale economies attendant upon increased transnational organizations and markets.

Not so fast, said Charlie: A common-currency area creates its own set of problems. Fluctuations in exchange rates are the result of changes in myriad underlying economic conditions, and the latter will not disappear merely because the euro has replaced the national currencies. Instead, adjustments to changing conditions will emerge in the markets for real resources—labor prominent among them—rather than in shifts in nominal exchange rates, and because changes in economic conditions affect different economies in very different ways, the under-

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[1] See, e.g., Charles Wolf, Jr., "Gorbachev's Allocative Choices," in Charles Wolf, Jr. and Steven W. Popper, eds., *Defense and the Soviet Economy: Military Muscle and Economic Weakness*, Santa Monica, Calif.: RAND Corporation, N-3474-USDP, 1992.

lying effects in terms of employment and other central parameters will vary widely as well. The United States as a common-currency area works well, but that is largely the result of labor mobility far greater than is the case in Europe; and the U.S. system still relies on substantial wealth transfers among regions, among which disaster relief and unemployment insurance are only the most obvious.

This European reality means that demands would emerge for transfer payments to ease the adjustments for those hit the hardest by changing economic conditions, and as those problems grew over time, there might result a "solution" in which the eurozone would create its own tax base, thus expanding the European public sector writ large, with the familiar adverse implications for economic growth. Moreover, inflation is always a tempting tool with which to forestall the painful short-term effects of fluctuations, so that a permanently higher long-run inflation rate in Europe was an outcome not to be dismissed.

The point is not whether all of these potential problems have come to pass, although the debt problems synonymous with Greece, Italy, and Spain obviously are related to the creation of the eurozone. The point is that expert opinion at the time largely downplayed such concerns; an example is a conference in The Hague in 2002, at which Charlie and I were the skunks at the garden party. The Europeans simply did not want to hear it.

And then there was the conventional wisdom on the Chinese economy after about 20 years of the Deng reforms, with double-digit GDP growth rates year after year. Whatever the problems with the measurement of those growth rates, it was obvious that the Chinese economy was getting very big very fast; would it not overtake the U.S. economy at some foreseeable point?

Well, said Charlie, every silver lining has its clouds, and those afflicting the Chinese economy were dark indeed, even given the impressive performance overall. Charlie organized a series of papers, among them several of his own, on specific problems confronting the Chinese economy, the result of which was an important RAND book

published in 2003[2] that remains highly relevant today. The problem of rural poverty and unemployment was and remains severe, posing a pervasive threat of social unrest. The debts of the state enterprises have weakened the financial system significantly, and no straightforward solution to that problem is available, particularly given the unemployment problems that would result from mass bankruptcies. Water shortages in the north are a pervasive problem, and air and water pollution is endemic—arguably the worst in the world—creating important adverse effects in terms of public health and labor supply. The one-child policy has yielded a looming labor shortage combined with all of the problems attendant upon an aging population. The problem of epidemic disease and HIV infection is suppressed but is not trivial. Corruption is a pervasive feature of the system, imposing its own set of adverse effects, and it is difficult to believe that the current anticorruption efforts of the Xi government are only an excuse to remove political enemies. The potential for sharp increases in energy costs and for conflicts with Taiwan and other neighbors are additional threats to Chinese economic growth. Any combination of only a few of these would reduce that growth significantly.

As *Pravda* used to put it, it is no accident that I refer to Charlie as "The Chief." I have received from him inspiration, sound analytic sense, and a far stronger inclination toward intellectual modesty. I truly have been blessed to be his colleague and friend for so many years, and may all of us be blessed to have him for many, many years to come.

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[2] Charles Wolf, Jr., K.C. Yeh, Benjamin Zycher, Nicholas Eberstadt, and Sungho Lee, *Fault Lines in China's Economic Terrain*, Santa Monica, Calif.: RAND Corporation, MR-1686-NA/SRF, 2003.

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