The New Age of Scarcity:
How We Can Adapt

The Sylvia Ostry Lecture, November 22, 2023

By William White[1]

Introduction

Good afternoon. It is indeed an honor to have been invited to give this year's Sylvia Ostry Lecture. When I came back from the UK in 1972, to work as a young PhD at the Bank of Canada, she was already a legendary figure in Ottawa. And her high domestic standing was then replicated at the international level after she took up her position as the Chief Economist at the OECD. Throughout her career, Sylvia Ostry recognized that working to establish a better international order was as beneficial to Canadians as efforts to improve policy at home. She did both admirably well.

In 2003 Sylvia gave the Convocation Address to the graduating students at the University of Toronto. In that address, she made a number of important observations relevant to policy making in the modern age. Taken together they indicate her early, indeed prescient, recognition that the economy is a complex, adaptive system nested within other complex, adaptive systems. Personally, if sadly rather belatedly, I have become a strong supporter of Sylvia's perspective.

In my presentation today, I want to comment on the economic prospects of the advanced market economies and how policy might evolve in consequence. These countries, as a group, face problems similar to those that will challenge the Canadian authorities over the next few years or even decades. You will note that a number of the observations I will make today correspond directly to those made by Sylvia in her Convocation Address twenty years ago.

Sylvia's first observation, made in light of the 9/11 attacks, was "The landscape where we learn and work has changed profoundly". The corresponding and

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principal point I wish to make today is that the global economic landscape is about to change profoundly once again. The advanced economies have been living through an "age of plenty", though this fact was obscured by the highly unequal distribution of the benefits. Worse, that age is now being transformed into an "age of scarcity". The result seems likely to be continuing inflationary pressures and higher real interest rates than those we have experienced in recent decades. In short, the future is likely to be starkly different from the past.

Sylvia's second observation was "the complexity of the interacting systems sustaining life on this planet are profoundly transforming". Similarly, I will assert today that how we manage this economic transition could have profound implications for the other systems within which our economic system is nested. In particular, economic difficulties could trigger crises in our political, environmental and public health systems which are already showing clear signs of stress. In short, the stakes are high for all these systems.

Sylvia's third observation was "The policy response will require technological, social and political dimensions". Similarly, I will assert today that policy prescriptions are not helpful if they stabilize one system only at the expense of destabilizing another. For example, relying on government subsidies to mitigate climate change could trigger a fiscal crisis and perhaps a "cascade" of crises in related systems. In short, we need multidisciplinary systems thinking, not traditional silo thinking that only digs the hole deeper.

And, as a closely related insight, those making policies for complex, adaptive systems must also recognize that policies can have undesirable longer-run effects (unintended consequences) as well as the desirable shorter-term effects. For example, extraordinarily high public and private debt levels in the advanced economies now constrain future policy options. These high debt levels are the unintended consequences of excessive reliance on macroeconomic stimulation of aggregate demand in the past.

In short, policy makers, but perhaps economists most of all, must stop assuming that the economy is simple, linear and independent of other systems. Because none of these assumptions are true.

Finally, Sylvia's fourth observation was "We should recognize that uncertainty is now reshaping the world". It is now generally accepted that accurate forecasting in complex, adaptive systems is literally impossible. A variety of

outcomes are always possible in a variety of time frames. That is why I have just said "the future is likely to be starkly different from the past" rather than "will be starkly different". And to add to the general uncertainty, complex systems have "tipping points" implying policy changes can sometimes have highly non-linear results.

From an Age of Plenty to an Age of Scarcity

Let me now turn to providing some support for my principal assertion in this presentation: we are leaving an "age of plenty" and entering "an age of scarcity". The former period extended roughly from the end of the Cold War in the late 1980's to the onslaught of the covid pandemic in early 2020. That period was characterized by a large number of overlapping, positive shocks to the supply side of the global economy. These pushed growth up and inflation down. Moreover, given ample supply, the need for investment (pushing up aggregate demand) was relatively subdued. This increased the disinflationary pressure, especially after the start of the Great Financial Crisis.

More recently, every one of the positive supply shocks seen earlier in the global economy has either eased significantly or gone into reverse. And to these inflationary pressures, we must add the need for massive investments to cope with environmental and other challenges.

There were at least five shocks that have changed from having an exceptionally positive influence on aggregate supply during the "age of plenty" to having a much reduced or even negative influence during the "age of scarcity". Let me take you through them.

First, the age of plenty was characterized by enhanced international political cooperation and economic **globalization**. Following the breakup of the USSR, the commitment of Deng Xiaoping to market led reforms in China, and the establishment of the Euro, global trade between 1990 and 2008 grew twice as fast as GDP. At the heart of this development was an unprecedented expansion in global value-added chains with China and Eastern Europe playing key roles. These chains directly lowered prices, while the plausible threat of moving production away from advanced economies suppressed their wage costs as well

Today, global political cooperation has been replaced by geopolitical confrontation, potential decoupling/derisking/friendshoring and outright protectionism. Measures to restrict trade have been rising since the onset of

the Great Financial Crisis and trade itself has recently been expanding much less rapidly than GDP. Moreover, in the last year or so, national security has risen much higher on the ladder of priorities, particularly for the US and China.

At the moment, it is hard to estimate what the ultimate economic costs might be. Will trade and capital restrictions apply only to strategic goods and services or will they spread and attain much broader scope? And could future growth be limited as well by the absence of cooperative innovation and technology transfer?

Second, in the age of plenty there were favorable **labour market** developments. The post War "baby-boom" bulge expanded the potential workforce in many countries. Urbanization in China and rising participation rates of women in most advanced countries further increased the number of available workers. Workers were also increasingly better educated and in better health. All of these developments helped boost the rate of growth of global output.

Today, the effective global work force is not only expanding less rapidly but is actually shrinking. Retiring workers increasingly outnumber new entrants, not only in advanced countries but also in China, Korea and many other emerging markets. Participation rates have also declined, – in part due to long covid but also due to many people (both young and those near retirement) reassessing their work-leisure balance. And finally, there is growing evidence of skills mismatch in many countries, with too few skilled tradesmen and too many liberal arts graduates. In China, youth unemployment is now over 20 percent.

A third factor distinguishing the age of plenty from that of scarcity has been a shift in **production processes** from efficient production to resilient production. In the earlier period, aided by globalization, there was also a relentless focus on least cost production and on maximizing shareholder value.

Today, responding to supply disruptions during the covid pandemic, a McKinsey survey indicates that over 80 percent of companies with overseas providers are now pursuing dual sourcing strategies. These are naturally more expensive, but costs are being further increased by the need for more information (eg who supplies the suppliers), for more sophisticated IT systems, and by a shortage of trained personnel. And there has been a growing shift in focus from shareholder value to stakeholder value, which might be socially desirable but will at the same time cut measured productivity and raise costs.

A fourth factor characterizing the age of plenty was the plentiful **supply of energy and other natural resources.** Although demand for fossil fuels almost doubled, supply responded effectively and major price increases were avoided. However, increases in the supply of such fuels will in the future be constrained by our rapidly depleting global “carbon budget”. Moreover, electrification based on non-fossil fuels will require a massive and near-term increase in the demand for many metals. In contrast, an effective supply response (new mines) could take decades and prices will rise in the interim. As well, to the extent global warming does continue it will threaten water supply, water-based transport and the availability of food. All of these influences will raise costs and prices.

Fifth, the age of plenty was characterized by **massive digitization and increasing connectivity.** From its start in 1989, the World Wide Web became the Internet and “smart” phones spread everywhere. Processing costs plummeted in response to Moore’s law and the costs of information storage fell likewise. The question looking forward is whether these trends will continue or weaken.

On the one hand, the McKinsey Global Institute has recently suggested that the benefits of digitalization and connectivity are approaching “saturation”. The low- hanging fruit have been picked. In an even more pessimistic vein, both Bob Gordon of Northwestern University and the World Bank have noted that measured growth in Total Factor Productivity in advanced countries has been falling for a decade or more, and both project this poor productivity performance will continue.

On the other hand, many people feel that potential technical progress in AI, bioengineering and medical care could yet transform society. Moreover, in a recent book, “The Second Machine Age”, two economists from MIT suggest that the blending of existing technologies, as in the iPhone, could also be transformative.

How will this debate play out? As the great Lord Keynes once said: ”there is no scientific basis on which to form any capable probabilities whatever. We simply do not know.”

So, there are at least four, and potentially five, negative **supply** shocks to justify anticipations of a more inflationary future. Potential positive **demand** shocks lead to the same conclusion.

During the age of plenty, **investment** was relatively weak in the advanced economies. In part this was due to the global glut of labour that drove down wages in the advanced countries. Sadly, the age of plenty did not benefit everyone equally. Lower wages not only constrained consumption, but also reduced investment by inducing a substitution of labour for capital. As well, in many countries, companies lowered investment plans to generate cash to buy back shares and pay out dividends. Finally, investment in fossil fuels was also affected by fears that such investments would become “stranded assets” as the “carbon budget” became ever more binding.

In addition, **government spending** as a percentage of GDP plateaued after 1980. Many governments, worried about deficits, pared back expenditures on new public infrastructure and even the maintenance of old infrastructure. Guns and butter issues were also favourable. Military spending fell sharply - the peace dividend generated by the end of the Cold War. And spending for redistributive reasons was also restrained in response to the Reagan-Thatcher ideology that spending by the wealthy would eventually “trickle down” in response to market forces.

In the age of scarcity, all of this seems likely to go into reverse. There will be a variety of reasons to increase investment, each associated with one of the anticipated negative supply shocks I have just identified. Private investment should rise as companies automate in response to higher labor costs. Decoupling/derisking will also require new investments to replace or complement old ones. Building-in redundancy and modularity to increase resilience to shocks will also require new spending.

Confronting global warming will require huge expenditures, whether for adaptation or mitigation. Adaptation to rising temperatures means spending to repair damage caused by violent weather. As well, it means investment in new infrastructure that can better resist such damage. As for mitigation, if the need for fossil fuels is to be reduced, we need a whole new infrastructure: renewable sources of electricity, factories for EVs and heat pumps, new smart grids and the list goes on and on. To give an indicative number, the International Energy Agency estimates that getting to net zero by 2050 will require decades of spending amounting to around 6 percent of global GDP annually.

Much of this investment spending will have to be done by governments, and it will come on top of necessary infrastructure spending that was wrongly

postponed during the age of plenty. This will be uncomfortable for many governments that already have record high debt to GDP ratios and often have deficits that (post covid) remain unusually high for this stage of the business cycle.

Moreover, "guns and butter" spending also seems certain to rise. Military expenditures are already increasing sharply almost everywhere in light of geopolitical tensions, and this could get much worse. As for "butter" issues, ageing populations have more health needs and the rising incidence of Alzheimer's disease will stretch care facilities more generally. With measures of inequality rising in many countries, and resentment threatening trust in government, traditional institutions and even democracy itself, redistributive measures by government would seem more urgent than ever.

How can we adapt?

So we face a combination of multiple negative supply shocks and multiple positive demand shocks. To me, this suggests continuing inflationary pressures and higher real interest rates over a much longer time period than most currently envisage. How should public policy react to these difficult circumstances, bearing in mind that economic policies can have effects on other systems, that the longer-term effects of policies can be different from shorter-term effects, and that policy changes can have uncertain and potentially non-linear responses?

Four possibilities suggest themselves, each with its own shortcomings. At this juncture, we have no good choices.

The first is that governments might choose not to make the investments and other expenditures I have just noted as being necessary. This would help mitigate the near-term problems of inflation and fears of fiscal crisis. However, it would leave unaddressed the crucial longer run problems of slowing potential growth, national security and climate change. In my view this would be a potentially disastrous choice.

The second possibility is that governments might increase their expenditures as suggested, letting deficits and government borrowing rise, and rely on tighter monetary policy to return to current inflation targets. However, we have already seen the difficulties faced in doing this in the post-covid period. And how much more difficult would this process be in the era of scarcity, when

diverse and overlapping negative supply side shocks would seem more likely to trigger a persistent wage-price spiral?

And a still further problem with this strategy will be posed by existing high levels of private sector and public sector debt.

Relying on higher real, and even higher nominal, interest rates threatens the stability of the private sector, both financial and non-financial. After decades of tighter banking regulation and ultra-easy monetary policy, lenders have increasingly become non-regulated entities. This implies that we do not really know who in the financial sector might be threatened by higher rates. Moreover, borrowers have increasingly used the money for highly speculative investments, share buybacks and dividend payouts. This has made the capacity of the non-financial private sector to meet higher debt service requirements even more problematic. The greatest danger in this case is that the contractionary effects of tighter money trigger a deep recession that then cascades into a debt-deflation.

Concern has also been expressed recently that higher interest rates might now threaten the stability of the public sector as well. Current ratios of public sector debt to GDP are very high and Quantitative Easing (which swaps long debt for overnight money) has made debt service more responsive to higher short rates. Should higher rates trigger fears that government debt service might be unsustainable, then rates would likely rise further still and the prophecy could become self-fulfilling. And, of course, the likelihood of such a spiral would increase should governments choose to absorb private sector losses on their own balance sheet. The end game here would be much higher inflation as governments increasingly turned to their central bank for financial support. We have seen this process play out many times in Latin America and elsewhere.

Whatever form a future economic crisis might take, an associated danger would be some kind of a political crisis. Democracies are also complex, adaptive systems subject to tipping points. As I have just noted, rising inequality and political bifurcation are well advanced in many countries and trust in government and institutions has already declined sharply. In short, there are many signs that our political systems are also under severe stress.

So this second possibility could also be a disastrous choice.

A third possibility arises from appreciation of the dangers associated with the first two policy choices. Governments would increase their spending and their

deficits, recognizing that this would lead to higher inflation. But they would then take measures to limit the feedback effects on interest rates, a program of "financial repression" used with some success to deal with the debt overhang after World War ll. Macroprudential regulation, capital controls and Yield Curve Control might all be used to pursue this objective.

The first problem with this strategy is that it might not work. The complexity and the openness of modern financial markets makes evasion easy, in which case we are back to the disastrous possibilities I have just suggested. The second problem with this strategy, even supposing it could be made to work, is that it will hurt ordinary citizens to the advantage of the already rich. Again, this might be expected to have unwelcome political implications.

John Kenneth Galbraith once said "Politics is not the art of the possible. It is choosing between the disastrous and the unpalatable". My fourth possibility is not disastrous, but many will still find it unpalatable. If supply is slowing, but investment must rise regardless, then it is simple arithmetic that consumption must slow if inflation is to be restrained.

On the supply side, we need broad-based reforms to increase economic potential. Both the IMF and the OECD have noted that the pace of structural change has slowed sharply in recent years. Tax reform to foster investment and encourage saving might serve the same objective. Measures to improve the efficiency of government services would be of particular importance given the fiscal challenges facing many governments. Finally, measures to improve insolvency procedures could help ensure timely and orderly debt restructuring, rather than the opposite.

On the demand side, increased fiscal expenditures would have to be paid for through higher taxes, with taxes on carbon and land high on the list of priorities. As well, tax expenditures and other fiscal subsidies (especially for fossil fuels) should be closely examined and potentially removed. All of these changes should be designed to be highly progressive to ease both social and political strains. Among other implications, this means universal programs should be replaced by means testing. More broadly, governments must take concrete measures to ensure longer term fiscal sustainability and to align fiscal policy more firmly with anti-inflationary monetary policy.

This fourth approach is the best way to confront looming challenges. In its broad thrust, it resembles the recommendations made by John Maynard

Keynes in his 1940 treatise on “How to Pay for the War”. Keynes also wished to avoid an inflationary outcome and to do so in a socially just way.

But “selling” an unpalatable set of policies will not be easy. Vested interests must cease to resist policies and reforms that are in the public interest. Perhaps even more important, voters in democracies must be convinced of the need to make sacrifices today for a better tomorrow. Recent decisions by numerous governments in Europe to roll back already announced measures to reach net zero are worrisome, particularly since they were in response to voter discontent about the costs. Politicians could lead the way, but their appetite for reelection has thus far dominated the wish to do “the right thing”.

Finding the means to overcome these difficulties should be our most urgent task. Perhaps, as in wartime, an appeal to “national security” might be needed to motivate appropriate action. Indeed, although there is no overt enemy, we are in a war to preserve a sustainable future and a free society.

Failing to “sell” these unpalatable policies implies that one of the other possibilities will be chosen as offering an easier path going forward. Unfortunately, as I have argued, each one of these alternative paths seems likely to prove much more dangerous than is currently anticipated, for all of the systems on which human life depends. As I noted earlier, the stakes are very high and the risks are ever increasing.