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# THE CASE AGAINST THE NEW “SECULAR STAGNATION HYPOTHESIS”

MIHAI MACOVEI\*

JEL CLASSIFICATION: E43, E51, E52, E31, E32, E12, E14

**ABSTRACT:** The new “secular stagnation hypothesis” developed by Lawrence H. Summers attempts to justify why the demand stimulus applied in the aftermath of the global financial crisis failed to revive growth in a satisfactory manner. Building on previous ideas of Keynes, Hansen, and Bernanke, Summers claims that excess savings together with feeble investment drove the natural rate of interest down to zero and advanced economies into stagnation. As the US monetary policy rate is not allowed to fall below the zero bound, Summers calls for “quantitative easing” and more expansionary fiscal policy to spur investment demand. This paper refutes Summers’s hypothesis by revealing its internal inconsistencies and presenting both theoretical arguments and empirical evidence on the long-term evolution of savings, investment, productivity, and capital stock. It also estimates the natural rate of interest following the approach of Salerno (2020), which is further refined based on Rothbard’s “pure interest rate” theory. The calculation shows that the natural interest rate did not drop to zero after the global financial crisis, but has actually remained consistently and significantly above the federal funds rate and the bank loan prime rate. This not only invalidates Summers’s central claim, but confirms once more the explanatory power of the Austrian business cycle theory in relation to the main trigger of the global financial crisis and its subsequent unfinished recovery.

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Puzzled by the anemic growth performance in advanced economies five years after the global financial crisis (GFC) of 2007–08 and the inability of mainstream macroeconomic theories to explain it, former US Treasury secretary and Harvard professor Lawrence H. Summers (2013) expounded a new “secular stagnation hypothesis,” reviving an old Keynesian theory developed by Alvin Hansen during the Great Depression. At the core of the theory, which tries to justify government interventionist policies, lies the assumption that major structural societal changes have reduced investment demand in modern economies, whereas savings have continued increasing. This has created a “savings glut,” which has driven the equilibrium or natural real interest rate all the way down to near zero and made monetary policy largely ineffective.<sup>1</sup> In order to combat the secular stagnation engulfing advanced economies, monetary policy would allegedly need to be recalibrated toward “quantitative easing,” and fiscal policy, in particular public investment, should be used more aggressively.

It may not be a coincidence that both Hansen and Summers released their theories precisely at times when the Keynesian theoretical framework was incapable of explaining why interventionist policies stimulating demand could not lift the economy out of recession. But instead of pouring old wine in new bottles, Summers could have usefully consulted the Austrian business cycle theory (ABCT) in order to understand the disappointing output growth following the global financial crisis. The ABCT was primarily elaborated by Austrian school economists Ludwig von Mises and Friedrich A. von Hayek and explains how excessive growth in bank credit due to artificially low interest rates set by a central bank or fractional reserve banks triggers an unsustainable boom and “malinvestments,” i.e., intertemporal misallocation of factors of production. A recession is bound to follow, because there are not enough real savings to support all the projects started in the boom. The recession liquidates the boom’s “malinvestments” and adjusts the structure of production

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<sup>1</sup> The natural rate of interest concept was developed by Wicksell ([1898] 1962), and although mainstream economists started using it as well, they modified its meaning, as explained below. Summers uses interchangeably the concepts of “natural,” “equilibrium,” or “neutral” rates, which he defines as “the interest rate that will prevail when the economy is at full employment and price stability” (Summers 2017).

to the economy's new saving-investment preferences and natural interest rate. According to the ABCT, further monetary expansion via "quantitative easing" and larger fiscal stimuli, as advocated by Summers, can only prolong the gap between the loan and natural interest rates, perpetuate entrepreneurial miscalculations, and cause economic stagnation. The Keynesian supposed cure for low growth is actually its main cause.

The key point in assessing the validity of Summers's hypothesis is the claim that chronically weak investment demand together with a "savings glut" have significantly decreased the natural interest rate to close to zero and below the market loan rate. This allegedly depresses growth and justifies "quantitative easing" and negative interest rates. After brief presentations of the new "secular stagnation hypothesis" and of Knut Wicksell's "natural interest rate" theory in the following sections, this article explains why the main arguments underpinning Summers's theory are flawed. Using both theoretical proof and statistical evidence on the evolution of real savings, investment, productivity, capital stock, and inflation, this article disputes Summers's central claim that the natural rate of interest fell significantly toward zero in recent years. Going a step further, it then estimates the natural interest rate for the US economy starting from an approach devised by Joseph T. Salerno (2020), which is further refined based on Murray N. Rothbard's "pure interest rate" theory. The latter describes how the pure rate of interest is determined in the time market and permeates the entire structure of production. The final section concludes that the refutation of the new "secular stagnation hypothesis" calls for ending the decade-long policies of stimulating demand, which have proven detrimental to reviving sound economic growth.

## THE NEW "SECULAR STAGNATION HYPOTHESIS"

In the presidential address delivered at the American Economic Association in 1938, Hansen presented a new interpretation of the protracted weak recovery from the Great Depression. According to him, the US economy was suffering from "secular stagnation," i.e., it had reached a maturity stage where savings were increasing, but investment was falling due to a decline in population growth and

subdued technological progress. If the main challenge of capitalist economies in the nineteenth century had been weathering business fluctuations, the twentieth-century problem became unemployment as depressions became longer and deeper (Hansen 1939).

To remedy declining investment demand, which had theoretically fallen below the level necessary to absorb savings, and the ensuing unemployment problem, Hansen advocated more rapid technological progress and the development of new industries to replace the maturing ones by increasing investment opportunities. He also saw a role for public spending in preventing the fall in national income below a critical level. But he surprisingly cautioned, with quite strong words, against the use of public investment as a panacea for filling the saving-investment gap: “[P]ublic spending is the easiest of all recovery methods, and therein lies its danger” (Hansen 1939, 14). Carried too far, the latter would lead to higher costs and prices, prolong economic maladjustments, and displace the otherwise available flow of private investment via both taxation and borrowing. Hansen also doubted the role that the interest rate could play in spurring investment, claiming that plentiful lending at low interest would not revive stagnating real investment. Despite the fallacy of his theory, Hansen’s original view of both fiscal and monetary stimulus as a potentially dangerous and partial cure to economic stagnation seems much more reasonable than that of Summers and other modern Keynesians.<sup>2</sup>

The secular stagnation theory fell into oblivion once the post-World War II baby boom solved at least one of Hansen’s fears, i.e., the decline in population growth. In addition, the war ended the Great Depression and new inventions like jet airplanes and computers supported the subsequent boom in productivity and output. As reality basically invalidated Hansen’s claims, his theory was laid to rest until Summers (2013) resurrected it in a speech at the International Monetary Fund (IMF). Faced with a similar challenge, i.e., a very weak recovery from the global financial crisis, despite unprecedented fiscal and monetary stimulus, Summers borrowed

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<sup>2</sup> Hansen (1939, 14) concludes his speech by saying that economists “will not perform their function if they fail to disclose the possible dangers which lurk in the wake of vastly enlarged governmental activities.” This is another surprising statement coming from someone often referred to as “the American Keynes.”

Hansen’s theory and refocused it on the zero lower bound, which prevents negative nominal interest rates and waters down the Keynesian monetary cure.<sup>3</sup>

Noting that growth in the United States and other advanced economies had been feeble despite buoyant financial conditions during the previous fifteen years, Summers (2014a; and 2014b) hastily concludes that mature industrial economies can hardly achieve adequate growth under conditions of full employment and financial stability. He believes that this is caused by a substantial decline in the equilibrium or natural rate of interest to close to zero, reflecting a significant shift between savings and investment. The economy has supposedly undergone an “increase in private savings, and a decrease in the level of investments” which could only be balanced at full employment at “an unattainably negative level of the nominal interest rate” (Summers 2015a). According to him, the fact that nominal short-term interest rates cannot fall below zero (or some bound close to zero)<sup>4</sup> prevents the adjustment needed to equate saving and investment at full employment (Summers 2015b).

The question is how such a chronic excess of savings over investment can exist in flexible markets, and Summers borrows Hansen’s main contributors to secular stagnation, i.e., low population growth and weak technological progress, to answer it. In addition, he points to other complementary factors. Savings have supposedly been boosted by an increase in income inequality to the benefit of people with a higher saving propensity and, most important, by a surge in global savings. Summers emphasizes the “open economy” factor and his agreement with Ben Bernanke’s “savings glut” argument.<sup>5</sup> Emerging economies, but also advanced

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<sup>3</sup> Professor and Nobel Prize winner for his Keynesian modelling Lawrence Klein had linked secular stagnation to the idea of a negative natural rate of interest for the first time in 1947.

<sup>4</sup> Despite the fact that from 2009 to 2015 and since March 2020 the Federal Reserve System has kept the federal funds rate close to zero and the Bank of Japan and the European Central Bank have been even bolder in slashing monetary policy rates. The former has kept its key interest rate at –0.1 percent since 2016 and also added a 0 percent target for the ten-year Japanese government bond yield. The latter has operated with a 0 percent key rate and a negative rate on its deposit facility since 2014.

<sup>5</sup> “Particularly in the 2003–07 period it is appropriate to regard Ben’s savings glut coming from abroad as an important impediment to demand in the United States.

ones such as Japan and Germany, have supposedly accumulated excess savings for precautionary purposes and distributed them to the industrialized world, in particular the United States, by investing them in safe assets, such as US Treasuries (Summers 2015c). In turn, the United States has not been able to channel the excess savings originating abroad into domestic investment. Summers considers that the decline in the demand for debt-financed investment, reflecting the legacy of the period of excessive leverage before the Great Recession, also played a role.<sup>6</sup> In addition, a drop in the relative price of capital goods—he gives the example of computers—has rendered investment less costly and therefore profitable companies, such as Apple and Google, will allegedly “find themselves swimming in cash and facing the challenge of what to do with a very large cash hoard” (Summers 2014a).

In order to overcome the “secular stagnation” challenge, Summers (2013 and 2015b) calls for more intrusive macroeconomic policy measures. He advocates monetary policy expansion via quantitative easing and a sizable reduction of real interest rates down to negative levels in order to match the fall in the natural rate of interest. Investment demand should also be increased, with a substantial role to be played by public investment and measures to reduce barriers to private investment. He argues in the Keynesian tradition that a substantial increase in public investment would not increase the public debt-to-GDP ratio because the investment multipliers are quite large until full employment is reached and the zero interest rate policy would suppress the debt service costs (Summers 2014a). He even calls for global action to solve the excess of savings over investment, arguing that “secular stagnation is a contagious malady” (Summers 2015c).<sup>7</sup>

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Ben and I are, I think, in agreement that it is important to think about the saving-investment balance not just for countries individually, but for the global economy” (Summers 2015b).

<sup>6</sup> Although this has not prevented the U.S. nonfinancial corporate debt from soaring over the last decade while a sizeable portion of it was used for financial risk taking in share buybacks, fuelling another stock market bubble (Howard 2020).

<sup>7</sup> Summers argues that Europe and Japan are exporting their secular stagnation to the U.S. by having very low equilibrium interest rates which cause capital outflows, a depreciation of their currencies, and a transfer of demand from the United States. This argument resembles John Hobson’s theory of domestic



It is most striking that although Summers presents some circumstantial empirical evidence in support of his hypothesis, this does not include any substantial data on the alleged global increase in real savings and collapse of investment, which are central to his argument. Moreover, in order to prove the decline in the natural rate of interest to zero, he only relies on some estimates in Laubach and Williams (2003) complemented by data on the decline in international real interest rates. Early on, a large inconsistency is evident in his treatment of interest rates. On the one hand, Summers (2015a and 2015b) claims that savings are chronically in excess of investment because *nominal* interest rates are constrained by the zero lower bound. On the other hand, he argues that *real* interest rates need to follow the decline in the natural rate of interest in order to address the saving-investment imbalance (Summers 2014a, 2015a, and 2015b). First, even if nominal interest rates are stuck at the zero bound, real interest rates can still be significantly negative with positive inflation.<sup>8</sup> Second, Summers (2015c) enters into a circular argument when he uses the decline in real interest rates as a proof of the sharp decline in the natural rate while at the same time blaming “secular stagnation” on the fact that real rates have not mirrored the decline in the natural rate (Summers 2014a, 2015a, and 2015b). Third, the charts with which he illustrates the decline in the natural rate of interest and in real interest rates—for the US Treasury Inflation-Protected Securities (TIPS) and for the world average—do not support his claim, but show a similar downward trend from about 3 percent per annum in 2000 toward zero in 2012–13, only that the former fell faster during the financial crisis (Summers 2014a and 2015c).

The fact that real interest rates followed the natural rate toward zero and even turned negative from 2012 to 2013, makes one wonder

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underconsumption leading to imperialistic expansion in search for new markets and investment opportunities overseas which later influenced Lenin and modern Marxists (Hobson, 1902).

<sup>8</sup> Bernanke was also critical of this inconsistency, noting that real interest rates can fall to –2 percent with a 2 percent inflation target (Summers 2015b). CPI inflation averaged 1.8 percent in the U.S. during the decade following the global financial crisis and Summers himself (2015c) presents a chart showing that the real yield of ten-year U.S. Treasury Inflation-Protected Securities (TIPS) has been negative for almost two years over 2012–13.

why the economy did not exit “secular stagnation” afterward. And yet, as economic growth performance gradually improved in the United States and the validity of his theory was questioned, Summers (2018) defended it forcefully, claiming that the economic recovery was due to “extraordinary policy and financial conditions.” But in doing so, he contradicted his own policy recipe:

There is also a question over whether the current policy mix and financial conditions can be maintained indefinitely. This is doubtful for fiscal policy especially in the US. Monetary policies involving low or negative real interest rates may be sustainable over the long term but they are likely to encourage financial risk, unsound lending and asset bubbles with potentially serious implications for medium-term stability. (Summers 2018)

And he even went further, saying that “[c]urrent palliatives are appropriate but unlikely to be long-term solutions” (Summers 2018), implicitly admitting that his policy recommendations are only short-run placebos. Such easily identifiable inconsistencies show that Summers’s main arguments are seriously flawed. Moreover, his entire theory is refuted by available statistics on savings, investment, productivity, and the estimated level of the natural interest rate, which will be presented in the next sections. But first, the theoretical foundation of the analysis, Wicksell’s “natural rate of interest” theory which was later incorporated into the ABCT, will be introduced.

## THE WICKSELLIAN THEORY OF THE NATURAL INTEREST RATE

Showing a keen interest in price fluctuations, Wicksell ([1898] 1962) was among the few economists who endorsed the quantity theory of money (when this idea was largely discredited) and tried to improve it further. He noted that interest rate fluctuations played an important role in price changes and concluded that a connection must exist between the “natural” rate of interest which arises in the capital structure of the economy and the rate of interest that emerges on the credit market. Wicksell thought that these two rates of interest are supposed to converge under normal circumstances, in which case the rate of interest on loans is neutral with respect to

prices. On the other hand, any persistent deviation of the market loan rate from the natural interest rate would generate a cumulative change in the price level. Keeping the money rate below the natural rate of interest would lead to an increase in prices and vice versa.

Building on the work of Eugen von Böhm-Bawerk, Wicksell argued that the natural interest rate is determined by the supply and demand for real capital goods, as if the latter were lent in kind in an imaginary economy without money. As a result, the natural rate is ultimately determined by the relative excess or scarcity of real capital goods and should be "roughly the same thing as the real interest of actual business" (Wicksell, [1898] 1962, xxv), i.e., the businesses' return on capital investment.

Although the supply of real capital is limited physically by economic output, the money supply can be expanded without limit in theory. Wicksell stated very clearly that fractional reserve banks are able, especially in concertation, to lend "any desired amount of money for any desired period of time at any desired rate of interest, no matter how low, without affecting their solvency, even though their deposits may be falling due all the time" ([1898] 1962, 111). He even acknowledged the possibility that "the money rate of interest could fall almost to zero *without any increase in the amount of real capital!*" ([1898] 1962, 111; his italics). This is the extreme case that Summers and the modern proponents of negative interest rates are asking for, supposedly in order to match the fall in the natural rate of interest, which is prevented by the zero lower bound of monetary policy. Although an exact coincidence of the money and natural rates of interest is unlikely, Wicksell argued that any permanent negative difference, even small, between the money and natural rates would raise the general level of prices continuously and to an unlimited level. Therefore, if Summers's assumption is wrong, reducing the money rate of interest all the way down to zero (or even below) when the natural rate hasn't changed accordingly is bound to increase prices considerably and negatively impact the economy, as Mises later posited.

Wicksell described in detail the negative impact of the divergence between the money and natural interest rates on changes in the price level, but it was Mises who extrapolated the effects of interest rate manipulation to the capital structure of the economy.

This was to become the backbone of his Austrian business cycle theory. According to Mises ([1949] 1998, 521–34), the interest rate is determined by the prevailing “time preference” in the society, i.e., the degree to which people prefer present to future satisfaction. A lower time preference rate will be reflected in a greater share of investment to consumption, a lengthening of the structure of production, and a building up of capital. Mises called “originary” interest the interest rate that is price neutral. This rate is similar to Wicksell’s “natural rate of interest,” and is determined by the discount of future goods versus present goods ([1949] 1998, 539–48). Originary interest is a methodological tool which cannot be attained in a uniform way in the reality of a changing economy and explains the formation of the “gross market rate of interest” on the loan market, which includes in addition to the former an entrepreneurial risk component and a price premium. Rothbard ([1962] 2009, 348–451) elaborated further on the formation of what he called the “pure” rate of interest, which is also determined by time preference and emerges as a price spread between stages of production.

According to Mises’s ABCT ([1949] 1998, 535–83), an artificial expansion of the supply of credit on the loan market can lead to fluctuations in gross market interest rates, i.e., loan rates, even in the absence of an equivalent change in originary interest. When “the market rate deviates from the height which the state of originary interest and the supply of capital goods available for production would require” entrepreneurs are misled into investing in the wrong lines of business, creating “malinvestments,” and households into overconsumption (Mises [1949] 1998, 544). This triggers an unsustainable boom where businessmen overestimate the stock of real savings and embark on “longer processes of production.” This lengthens the capital structure by shifting investment from consumer-goods to capital-goods industries. The resulting intertemporal misallocation of factors of production cannot be indefinite, because the lengthened structure of production can be sustained only through larger real savings, and not through money creation. As soon as the expanded credit reaches the owners of factors of production in wages, rents, and interest, they try to reestablish their preferred consumption-investment pattern and several business investments are revealed as unprofitable. The ensuing recession liquidates the boom’s malinvestment and allows the structure of

production to adjust to the new savings and investment pattern reflecting the new natural interest rate prevalent in the economy.

If Summers is wrong and the natural interest rate has not dropped to zero, justifying an equivalent reduction in the monetary policy rate, significant negative economic consequences can follow this reduction according to the ABCT. They go beyond undesired cumulative changes in the price level, as originally claimed by Wicksell, fostering a boom of malinvestment, output losses, and capital consumption. And if the deviation of the market interest rate from the natural rate of interest continues during the ensuing recession, the latter will be prolonged unnecessarily. The economy would be caught in a vicious cycle of dwindling growth and anticrisis monetary policy, exacerbating the economic debacle that looked like "secular stagnation" to Hansen and Summers.

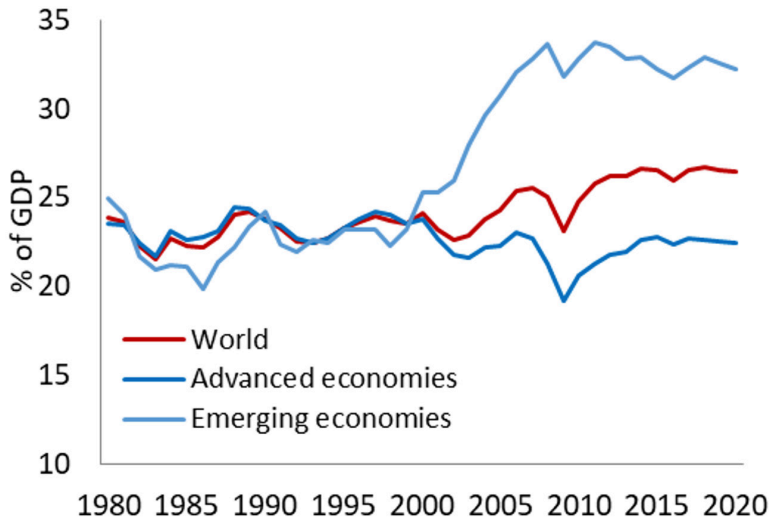
## FALLACIES OF THE "EXCESS SAVINGS" ARGUMENT

Summers claims that savings have risen while investment has dropped, causing the equilibrium, or natural, interest rate to fall to zero, but he does not specify whether he refers to nominal or real savings and investment. He mentions that a substantial part of excess savings emanate from abroad, but the only statistical evidence that he points to is the rise in the nominal amount of foreign central banks' reserves of US dollars and US Treasuries, which is a strong indication that he thinks in nominal terms. Moreover, Summers's idea of the surge in savings derives from the "global savings glut" theory of Ben Bernanke (2005), who tried to pin the widening US current account deficit on an alleged global excess of savings, also measured in nominal terms. Trying to justify a downward trend in the equilibrium real interest rate with nominal data on savings is obviously wrong and this inaccuracy resembles the confusion he makes between *nominal* and *real* interest rates. Summers's methodology is also inconsistent with the way in which Wicksell derives the natural rate of interest, from changes in the supply and demand for real capital goods.

Most important, Summers's (and Bernanke's) "global savings glut" argument is refuted by statistical data on global real savings, proxied by the ratio between gross national savings and nominal

GDP. Over the last four decades, the world savings ratio has been almost flat, barely increasing from about 24 percent of GDP in 1980 to 26 percent of GDP in 2020 (graph 1). As a matter of fact, the savings ratio had been declining for about 2 percentage points until the early 2000s and started growing moderately only afterward. The much-feared “savings glut,” which allegedly originates in emerging markets, in particular in China, has raised the global savings ratio only marginally, because the saving propensity has dropped concomitantly in advanced economies. Germany has recorded a large increase in its savings ratio since 1980, but this has been compensated for by significant drops in the US and Japanese savings ratios. China’s savings ratio has also trended downward, from above 52 percent of GDP in 2008 to around 44 percent of GDP in 2019, after growing steadily at the beginning of the country’s transition to a market economy.

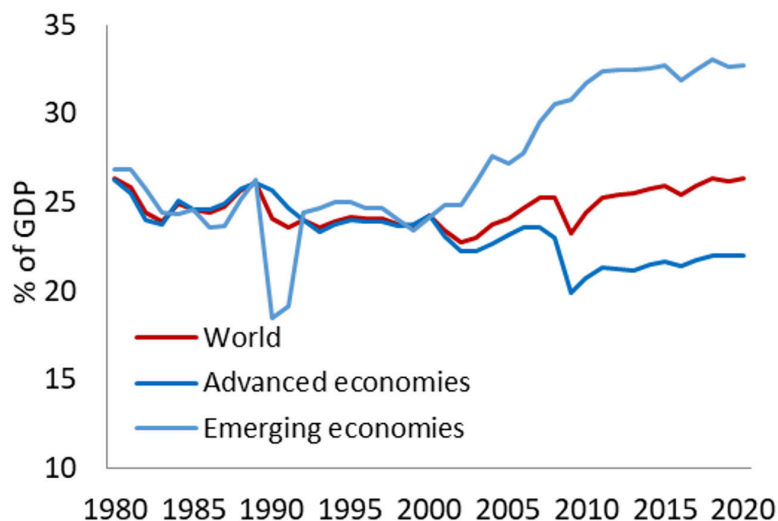
**Graph 1. World savings rate**



Source: data from the IMF World Economic Outlook Database.

The dramatic fall in investment bemoaned by Summers has not taken place either, according to statistics. The global investment ratio, expressed as gross fixed capital formation to GDP, has been broadly flat at about 26 percent of GDP from 1980 to 2020, and has actually increased in tandem with savings, from around 23 percent of GDP in 2009 to 26 percent of GDP in 2019 (graph 2). Since the financial crisis, savings and investment have balanced out almost every year in both emerging and advanced economies. Therefore, there has not been any global “savings glut” originating from emerging economies, as claimed by Summers and Bernanke. This was to be expected, because a gap between savings and investment at a global level would occur only in nominal terms, i.e., if money newly created by credit expansion were parked in bank accounts and were not spent on new investments. However, such a mismatch would not occur in real terms. In terms of goods, savings always equal investments, as reported in national accounts statistics too, because the part of production which is not consumed is used up in the formation of capital goods, i.e., investment.

**Graph 2. World investment rate**



Source: data from the IMF World Economic Outlook Database.

It does not seem to be a coincidence that the savings ratio started growing in the early 2000s, at the exact time when the Federal Reserve System (Fed), followed by all the other major central banks, reduced interest rates to a historical low level, giving a boost to credit expansion by fractional reserve banks. Deposits in US commercial banks more than doubled in size every decade, from \$3.5 trillion in 2000 to above \$7 trillion in 2010 and about \$16 trillion in 2020.<sup>9</sup> In parallel, foreign exchange reserves of central banks have surged from less than 15 percent of GDP in 2000 to about 30 percent of GDP (Summers 2014). But this reflects primarily an increase in fiduciary media and not in real savings, i.e., output which is not consumed but invested in the production of capital goods. Therefore, Summers and Bernanke mistook for a “savings glut” an abundance of newly created fiduciary media following a radical easing of monetary policy originating in the United States and other advanced economies; however, the growth in bank deposits and foreign reserves does not represent an abundance of real savings available to increase the real stock of capital goods.<sup>10</sup> The opposite of Summers’s argument is actually true: it was not plentiful real savings that drove down the equilibrium real rate of interest, rather record-low nominal interest rates which spurred monetary credit expansion, as will be elaborated below.<sup>11</sup>

If time preference goes down in a society and the saving propensity grows, the increase in real savings would be matched by an increase in real investments, i.e., the saving-investment pattern would shift simultaneously. It has been noted that the ratios of saving and investment to GDP, as calculated in national accounts statistics, have increased mildly during the last twenty years. But could this have triggered the claimed significant drop in the natural interest rate? Looking at the evolution of the real stock of capital goods and productivity will provide useful indications given the interconnections between these variables.

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<sup>9</sup> Board of Governors of the Federal Reserve System (US), Deposits, All Commercial Banks [DPSACBW027SBOG], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/DPSACBW027SBOG>, June 25, 2021.

<sup>10</sup> The Federal Reserve System has gradually cut the federal funds rate to an almost record low of 1 percent from August 2003 to June 2004, a level not seen since the 1950s.

<sup>11</sup> For an additional critique of Summers’s neglect of “real savings” in his “secular stagnation” hypothesis see also Shostak (2020).



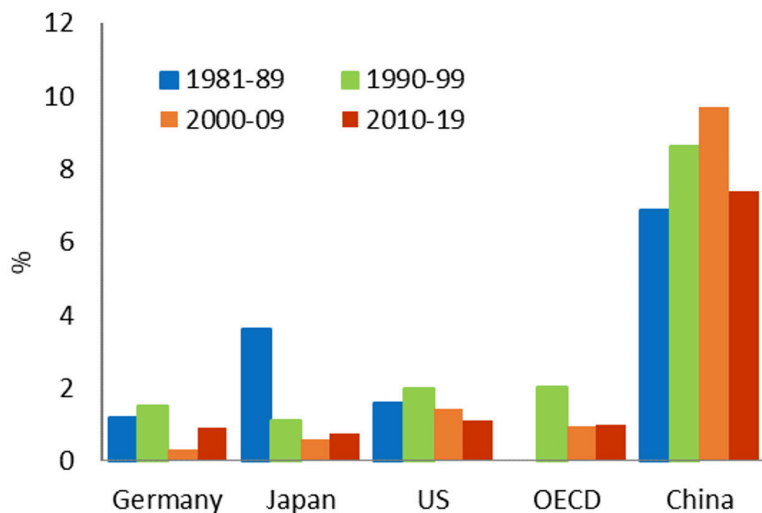
## WHAT DO PRODUCTIVITY AND CAPITAL ACCUMULATION SUGGEST?

According to Rothbard ([1962, 1970] 2009, 526), in the absence of monetary expansion, the real interest rate is supposed to fall in a progressing economy and not in one which is stagnating or regressing, as assumed by Summers. In a progressing economy the production processes are longer and more productive due to an increase in gross investment and capital accumulation, supported by growing savings as time preference and interest rates fall. In a regressing economy, the opposite is true—gross savings and investment decline and consumption increases. Time preference increases together with the interest rate, widening the spread between cumulative prices in the stages of production (Rothbard [1962] 2009, 531). Wicksell ([1898] 1962, xi) argues in the same way that the real rate of interest will fall when the quantity of real capital increases. This is contrary to what Summers claims, i.e., that the natural interest rate has fallen in a stagnating economy, by wrongly assuming that real savings and investments have moved in opposite directions.

A fall in the natural rate of interest is moreover associated with increasing productivity and capital accumulation, as explained by Rothbard, but such an increase has not taken place. In recent years, many economic analysts, both mainstream and nonmainstream, have noted and searched for the causes of a significant decline in productivity in both advanced and emerging economies (IMF 2017; OECD 2016; and Macovei 2018). Organisation for Economic Co-operation and Development (OECD) statistics show that productivity, measured as the annual growth in real GDP per employee, has fallen across the board in most advanced economies over the last two decades (graph 3). Emerging economies, illustrated by China in the chart, have undergone a similar decline in productivity following the financial crisis. One would not have to search much to uncover the mystery of the steady decline in productivity. The same OECD statistics reveal that the annual growth in the capital stock per employee has decelerated significantly over the last two decades, not only in major advanced economies such as Germany, Japan, Switzerland, and the United States, but also in middle-income economies such as South Korea and Spain (graph 4).<sup>12</sup>

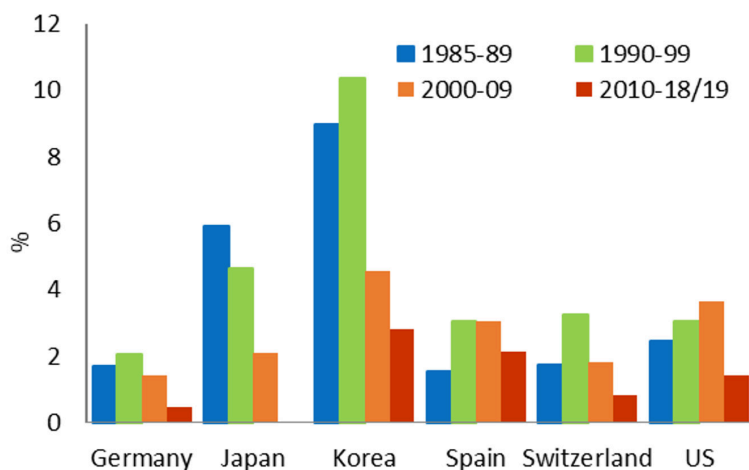
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<sup>12</sup> The capital stock per employee is calculated from the annual change in “capital services,” which is estimated by the OECD using the rate of change of the

**Graph 3. Productivity (change in real GDP per employee)**

Source: data from OECD Statistics. Data as of 1995 for the OECD.

productive capital stock, taking into account wear and tear, retirements, and other sources of reduction in the productive capacity of fixed capital assets. To ensure data comparability, the OECD capital services measures are based on a common computation method for all countries. See data at OECD Statistics (Growth in GDP Per Capita, Productivity and ULC, accessed June 23, 2021), [https://stats.oecd.org/Index.aspx?DataSetCode=PDB\\_GR](https://stats.oecd.org/Index.aspx?DataSetCode=PDB_GR). The total capital stock decelerated in the US as well during 2000–09 and only the relatively larger drop in employment during the global financial crisis has caused the capital stock per employee to advance further.

**Graph 4. Capital stock per employee percentage change**

Source: data from OECD Statistics; own calculations.

Since the global financial crisis, the capital accumulation per worker has slowed significantly in many economies and reached almost zero in countries like Japan and Germany. At the same time, a modest increase in the investment-to-GDP ratio has taken place globally, both in emerging and advanced economies. This may appear counterintuitive but illustrates well the malinvestment that took place both in the boom years before the GFC and thereafter, when aggressive fiscal and monetary policies prolonged the misallocation of factors of production. Even if investment appeared robust, it was actually tied up in wasteful projects that later had to be liquidated and which have not contributed to a durable increase in the capital stock. As the monetary expansion originating in advanced economies spread to the rest of the world via artificially reduced interest rates and large capital flows searching for yield, emerging markets also underwent short-lived consumption or real estate booms due to surging indebtedness during the last two decades (IMF 2015; and BIS 2016).

As a matter of fact, the real cause of the longer-term economic slowdown in many advanced economies has been the gradual

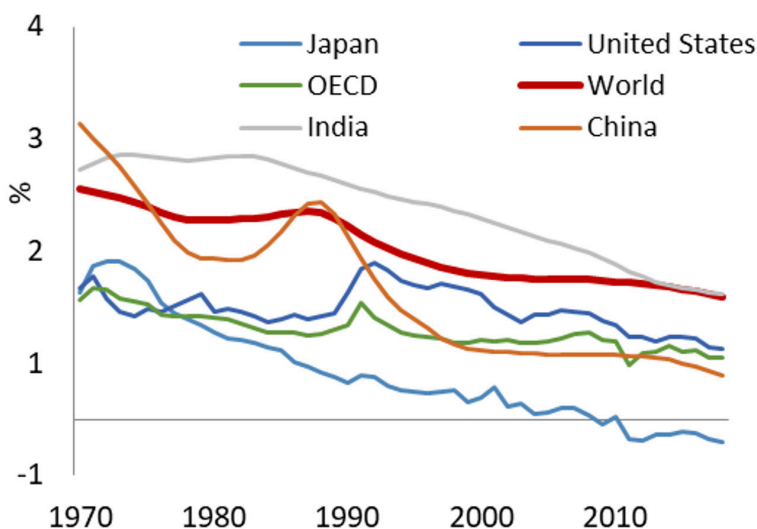
erosion of the stock of capital goods, dwindling productivity growth following the offshoring of productive activities to emerging markets, and a drop in the domestic investment-to-GDP ratio of about 4 percentage points since the 1980s. This was brought about by heavy regulatory burdens and welfare policies that limited economic freedom, together with steady credit expansion and increased financial leverage, which led to larger booms and busts. The “secular stagnation” hypothesis not only fails to identify the plausible explanation of the West’s economic decline, but advocates policies that would accelerate it further.

Arguments such as slowing population growth and weak technological progress are, first, not valid and, second, could only play a circumstantial role in explaining “secular stagnation.” The world’s population growth has indeed decelerated from about 1.8 percent per annum in the late 1980s to 1 percent per annum in 2020 (graph 5). Due to the government-enforced one-child policy, a major contributor has been the decline in the population growth of China from about 2 percent per annum to 0.4 percent per annum over the same period.<sup>13</sup> India’s population growth also dropped from 2.4 percent per annum at the beginning of the 1980s to about 1 percent in 2020.<sup>14</sup> Yet, despite the steep decline in population growth, investment-to-GDP ratios and capital accumulation advanced significantly in both China and India, which runs against Summers’s argument. The same holds true at the global level, where investment-to-GDP increased (see the previous section) despite the fact that population growth slowed as well.

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<sup>13</sup> China and India are the two most populous countries in the world, each of them accounting for about 19 percent of world population.

<sup>14</sup> In countries such as the US, Germany, UK, and France, population growth was pretty constant on average from the 1970s until the GFC and only declined more visibly after the GFC, most likely because of the weak economy due to failed policy response.

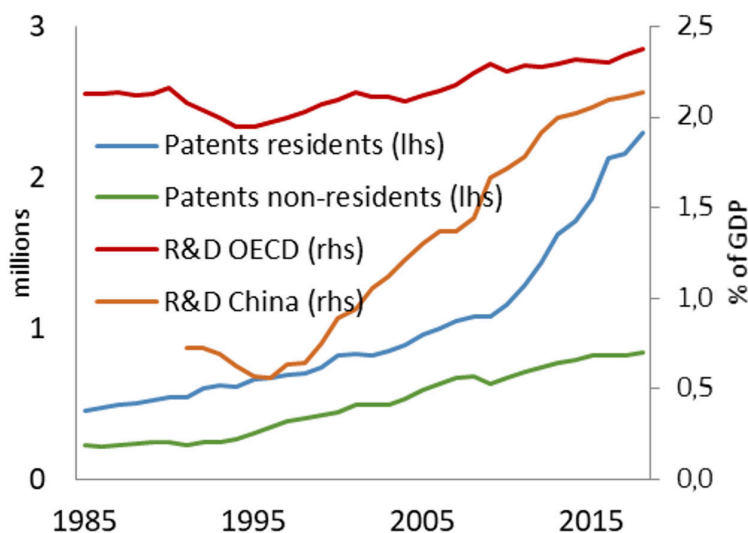
**Graph 5. World population growth rate (% p.a.)**

Source: data from OECD Statistics.

It should not come as a surprise that investment and capital accumulation per worker increase even if population growth slows, because this is a prerequisite for improving living standards. Countries where the growth of output, investment, and capital stock plummeted or stagnated have been faced with other serious economic issues or misguided policies in addition to the demographic headwinds. Japan is the classic mainstream example of a country whose economic woes are allegedly due to the decline and aging of its population. Yet Japan's economy has actually never properly recovered from the collapse of its real estate boom in the early 1990s because of ultraloose fiscal and monetary policies and lack of structural reforms. Government intervention has perpetuated the survival of zombie companies and the misallocation of factors of production, resulting in slashed investment, falling productivity growth, and hefty capital outflows, which in turn have gradually eroded the capital stock per worker. And despite a minor decline in population since the Great Recession, Japan's labor force has actually grown but has increasingly been used in less productive activities while real wages have stagnated (Macovei 2020).

The second argument, about feeble technological advance, is not supported by facts either. Technological progress has actually accelerated over the last two decades if one considers the growing number of patent applications, the increase in research and development (R&D) spending as a share of GDP (graph 6) and the exponential improvement in computing power, microchip capacity, artificial intelligence, big data, and nanotechnology (UNCTAD 2018). However, neither accelerating innovation nor investment can lead to sustainable growth in the capital stock and output if the factors of production are misallocated by counterproductive government intervention. The bottom line is that monetary policy can completely misguide investment if interest rates are set too low due to a gross underestimation of the natural interest rate, as shown in the reminder of the article.

**Graph 6. Number of world patents and R&D spending**



Source: data from World Bank and OECD Statistics.

## ESTIMATING THE NATURAL RATE OF INTEREST

Summers’s claim that the natural interest rate has declined significantly is based on calculations by Thomas Laubach and John C. Williams, two Fed economists who estimated that the natural interest rate fell to almost zero in the United States during the financial crisis and remained at that level until 2016 (Holston, Laubach, and Williams 2017; and Laubach and Williams 2003). Using a statistical technique known as the Kalman filter, they derived the natural rate of interest from the deviation of the model’s prediction of GDP from actual GDP. The GDP deviation from potential output is used as a proxy for the neutrality of the monetary policy and indicates how much the real federal funds rate has deviated from the natural rate of interest.

The macroeconomic model used by Laubach and Williams suffers from the inherent limitations of economic modeling in general. It provides an oversimplified image of the real world and assumes that past trends will continue unabated in the future. Laubach and Williams did not calculate the natural rate of interest based on past observations, but derived it from projections of an unobservable concept of potential output. There is a more fundamental issue in their specific case, however. As noted by Salerno ([2017] 2020), New Keynesians, including Laubach and Williams, have borrowed Wickse’s concept of natural rate of interest but applied it differently. New Keynesians have defined the “neutral,” or “natural,” interest rate as *the interest rate that prevails when the economy is expanding at its potential rate*, i.e., with full employment of factors of production and at stable inflation. As a result, this new concept of a “full employment real interest rate” used by Summers reflects different characteristics than Wickse’s natural rate, which is only the loan interest rate, which is neutral in respect to commodity prices. Therefore, the results of Laubach and Williams’s model are not necessarily consistent with the natural rate of interest described by Wickse.

Starting from Wickse’s original definition, Salerno ([2017] 2020, 122) notes that the natural rate of interest “is nothing but the basic or long-run rate of return on investment in the structure of production,” and makes his own estimates of the natural rate based on the rates of profit for US nonfinancial corporations, as calculated by the US Bureau of Economic Analysis (BEA). The return on

investment is calculated either as (i) the ratio of companies' net operating surplus to net stock of produced assets, i.e., fixed assets and inventory, or (ii) the ratio of companies' corporate profits to their net stock of produced assets. The numerator, i.e., the measure of corporate profitability, includes the pure rate of interest and entrepreneurial profit. Rothbard ([1962, 1970] 2009, 370) explains that in an "evenly rotating economy" (ERE) the rate of return on investment is equal to the pure rate of interest because there is no uncertainty and the entrepreneurial profit rate is zero.<sup>15</sup> In turn, Salerno argues that the entrepreneurial profit rate is close to zero or only slightly positive also in a real economy where output per capita grows very slowly such as the United States. He notes afterward that the US companies' after-tax average corporate rate of return has varied between 6.2 percent and 8 percent from 2006 to 2015.<sup>16</sup> Salerno concludes that Wicksell's natural rate of interest showed no trend of significant decline toward zero as claimed by Summers, but actually increased to around 8 percent in 2015.

This article follows Salerno's methodological approach and tries to estimate the natural rate of interest based on the BEA's US National Income and Product Accounts (NIPA), but uses a somewhat different and more granular calculation of capital and corporates' return on investment. The approach, suggested by Wicksell and elaborated upon by Rothbard ([1962, 1970] 2009, 373),<sup>17</sup> treats capital differently from other productive factors, such as land and labor.<sup>18</sup> The production of capital is imputable in the long run to

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<sup>15</sup> Rothbard also uses the methodological device of the ERE introduced by Mises, which abstracts from change and uncertainty and helps define a state of equilibrium where all prices are final prices, the rate of ordinary interest is the same for all commodities, and all factors of production are employed to provide the highest-valued service possible. This analytical tool is used to better understand the entrepreneurial function and isolate interest income.

<sup>16</sup> When using net operating surplus rather than corporate profits to calculate the return on investment, results vary: the after-tax corporate rate of return is then between 11.7 percent in 2009 to 13.6 percent in 2015.

<sup>17</sup> Rothbard has in turn built on the works of Böhm-Bawerk and Frank A. Fetter in developing a unified and consistent theory of factor distribution explaining the relationship between capital, interest, and rent.

<sup>18</sup> In Wicksell's ([1898] 1962, 168) own words, "It might be possible to obtain some information from the accounts of individual enterprises and from the annual reports and dividends of companies. But it has to be remembered that the thing



land, labor, and time; capital is therefore not an independent factor of production that earns a net interest rent for its owner, not least because capitalist-entrepreneurs take a risk in advancing money to the other factors of production "in the *expectation* of being able to recoup their money with a surplus for interest and profit after sale to the consumers" (Rothbard [1962, 1970] 2009, 355).<sup>19</sup>

Accordingly, the businesses' return on investment is calculated by subtracting from the net operating surplus of private enterprises<sup>20</sup> all advances to factor owners which are not directly linked to interest on "liquid capital," such as "rental income", "proprietors' income" which includes a significant wage component of sole proprietorships and partnerships, and negligible "business current transfer payments." The result includes the sum of "corporate profits adjusted for inventory valuation and capital consumption of domestic companies"<sup>21</sup> and of "net interest paid on financial assets." This amount is divided by the net stock of produced assets (private and nonresidential),<sup>22</sup> to which, deviating from the results presented by Salerno, the capitalists' expenditure on factor incomes, labor, and land are added. According to Rothbard, investment in each stage of production includes both durable and nondurable capital

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that is commonly regarded as interest does not correspond to the use to which we are applying the term; for it usually covers not only interest on liquid capital, but consists far more largely of rents of every kind: rents of land, monopoly rents, the return on buildings and durable machinery."

<sup>19</sup> In other words, interest income is not derived from concrete capital goods, but from the fact that capital owners restrict their present consumption and advance present goods, i.e., money, to factor owners who are producing the future goods that capitalist-entrepreneurs acquire, hold, and process before they later sell to consumers. For this service of advancing time to the owners of factors, capitalists are paid the pure interest, which is equivalent to the price discount between present and future goods (Rothbard [1962, 1970] 2009, 348 and 374).

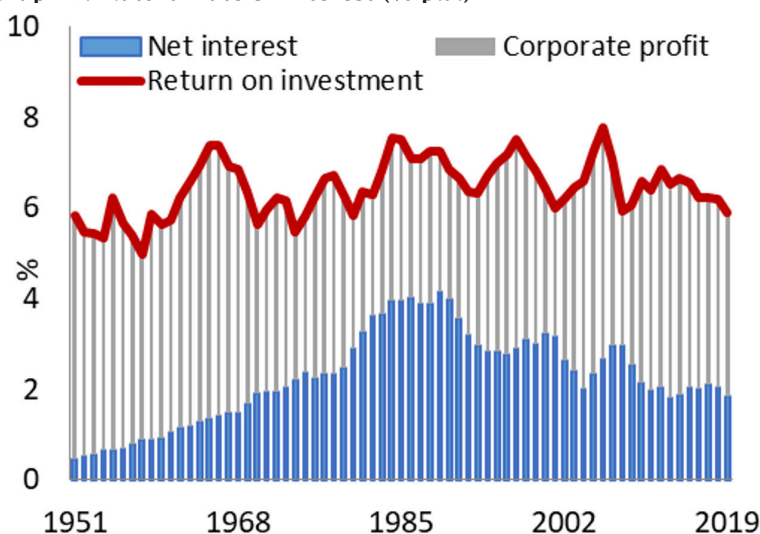
<sup>20</sup> Presented in BEA NIPA (table 1.10, "Percentage Shares of Gross Domestic Product," last modified May 27, 2021), <https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey>.

<sup>21</sup> This adjustment is important to exclude from corporate profits "capital gains or losses, which reflect changes in the prices of existing assets, but not in the real stock of produced assets" and account for the consumption of capital in production.

<sup>22</sup> Presented in BEA NIPA (Table 5.10, "Changes in Net Stock of Produced Assets (Fixed Assets and Inventories)," last modified Sept. 2, 2020), <https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey>.

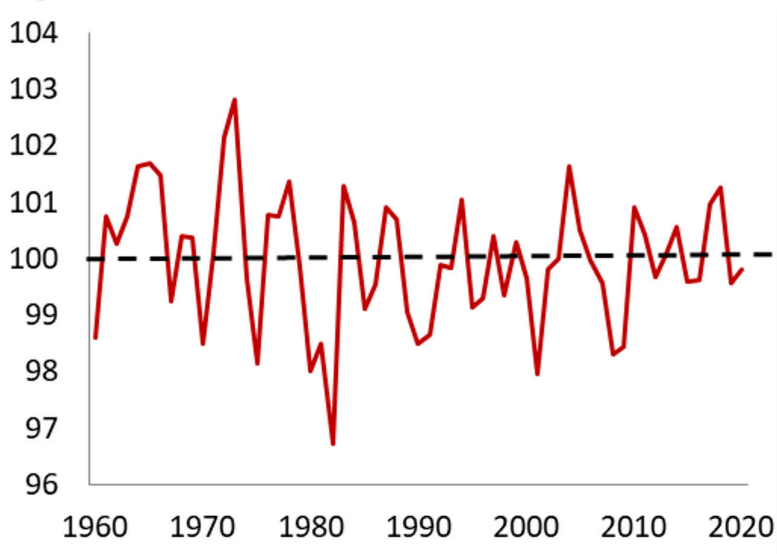
goods. The latter represent the services of original factors which, although assimilated to consumer goods in mainstream economics and statistics, are actually mixed with existing durable capital in the production process in order to yield a final product. As a result, Rothbard ([1962] 2009, 401) argues that “it is inadmissible to leave the consumption of nondurable goods out of the investment picture” and to “single out durable goods, which are themselves only discounted embodiments of their nondurable services and therefore no different from nondurable goods.”

According to this calculation, the US companies’ return on investment, which is here assimilated with the normal, i.e., natural, rate of interest in the real monetary world, varied between 5 percent and 7.8 percent from 1951 to 2019 (graph 7). The level of about 6 percent recorded over 2015–19 refutes once more Summers’s assertion that that natural rate of interest has declined to almost zero in the United States since the Great Recession. There has been a moderate decline in US companies’ return on investment from 7.5 percent in 1985 to around 6 percent in 2019, split between a larger drop of about 2 percentage points in the rate of net interest payments and an increase in the rate of corporate profits of about 0.5 percentage points. This decomposition of return on investment illustrates well the fact that even if loose monetary policy and credit expansion have artificially reduced the loan interest rate in the economy, the return on investment, i.e., the discount between present and future goods, has not been reduced proportionally, because business uncertainty drove up the entrepreneurial profit component.

**Graph 7. Natural rate of interest (% p.a.)**

Source: data from US Bureau of Economic Analysis; own calculations.

It is hardly possible to achieve a precise decomposition of the return on investment into its two components, identified by Mises and Rothbard—natural rate and profit risk rate—in the absence of modeling approximations. But it does not even appear to be necessary to make this split, because “the interest rate is equal to the rate of price spread in the various stages” of production, which tends to be uniform for every good and every stage throughout the economy (Rothbard [1962, 1970] 2009, 371). In a real market economy this interest rate deviates from the natural or pure rate of interest, because uncertainty creates entrepreneurial risk. However, as Salerno explains, these deviations are likely to be modest, not least because the market process selects the entrepreneurs which are most able to deal with uncertainty. At the same time, increased government intervention in the economy can add to uncertainty and may raise the entrepreneurial risk rate, as seems to have happened in the US economy over the last two decades (graph 8). Nevertheless, this would only increase the spread between the various stages of production and the discount between present and future goods, which is in fact the interest rate guiding economic activity and reflecting changes in time preference.

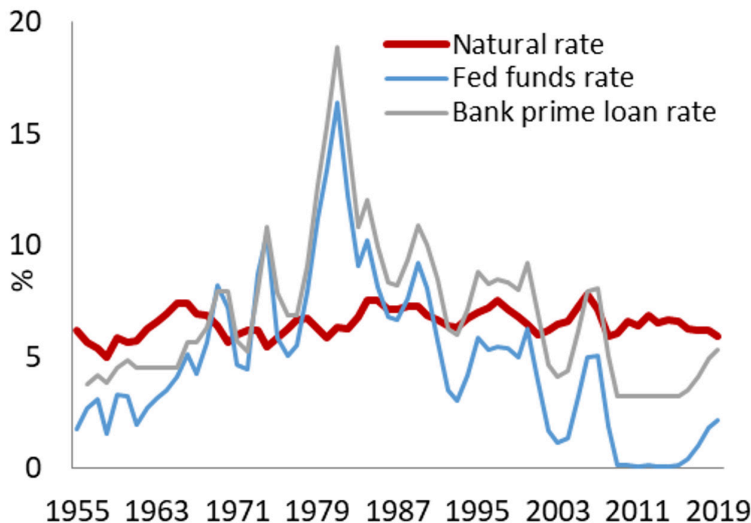
**Graph 8. US business confidence index**

Source: data from FRED.

According to the calculation presented here, the natural interest rate did not drop to zero after the financial crisis and has actually remained consistently and significantly above the federal funds rate and the bank loan prime rate since the early 2000s, when monetary policy was eased significantly (graph 9). Moreover, the gap has widened considerably since the Great Recession, contradicting Summers's "secular stagnation" hypothesis. At the same time, the large deviation of both the key monetary policy and the bank lending rates from the natural rate, accompanied by an acceleration of credit growth to double-digit rates at the onset of the boom preceding the GFC fits the Austrian business cycle theory very well (graph 10).<sup>23</sup>

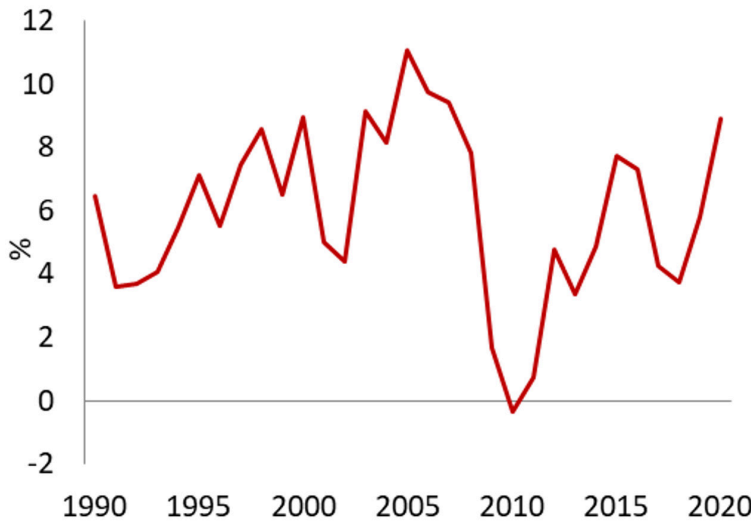
<sup>23</sup> For a detailed account of how the economic developments surrounding the GFC can be explained by the ABCT, see Salerno (2012).

**Graph 9. Interest rates vs. the natural rate (% p.a.)**



Source: data from FRED and the BEA; own calculations.

**Graph 10. Bank credit expansion (% p.a.)**

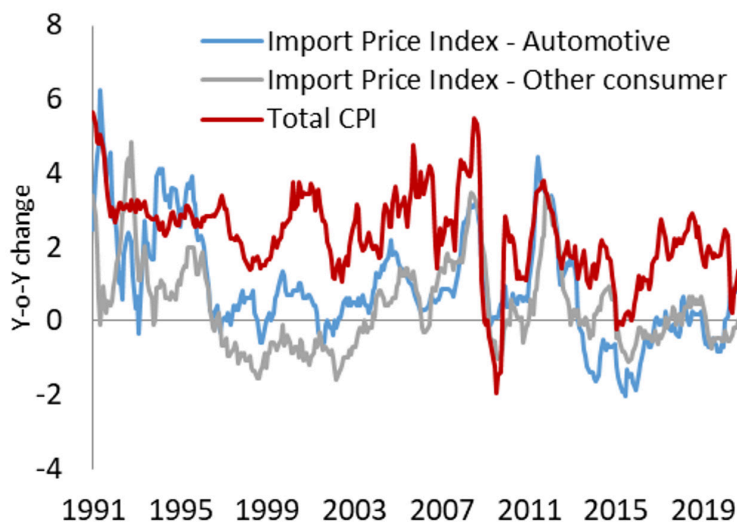


Source: data from FRED.

A final argument that Summers (2015a and 2015c) made to reinforce his claim that monetary policy had not been expansionary was the perceived “substantial decline in the rate of inflation” and outright fears of deflation in the wake of the financial crisis. Although Consumer Price Index (CPI) inflation has moderately trended downward in the United States since the early 1990s and was briefly slightly negative at  $-0.4$  percent in 2009 (Graph 11), Summers’s reliance on a single inflation indicator can be very misleading about the underlying inflationary pressures and structural imbalances in the economy. First, consumer price inflation has averaged about 1.8 percent per year since the GFC and until the start of the COVID-19 pandemic,<sup>24</sup> which is very close to the Fed’s annual inflation target of 2 percent, thus invalidating Summers’s fears that inflation would persistently remain below target. Second, as Rothbard ([1962, 1970] 2009, 1003; his italics) notes, “credit expansion raises prices *beyond what they would have been in the free market* and thereby creates the business cycle.” The fact that inflation decelerated is not the relevant point, because consumer prices continued growing consistently when deflation should have accompanied a curative recession following the GFC. Rising consumer prices, in particular when labor productivity was also growing by about 1 percent annually (OECD, 2021) and the recovery was incomplete and dependent on unprecedented government support, indicates that the market rate continued to be set below the natural interest rate and not the opposite.<sup>25</sup> Third, the long-term decline in CPI inflation was most likely due to other factors than an alleged restrictive monetary policy. Williams (2021) claims that CPI inflation in the United States has been underestimated due to changes in the calculation methodology. According to his “Alternate Inflation Chart,” which calculates CPI inflation with the 1990 formula, inflation has actually ranged between 4 and 6 percent annually for the past decade.

<sup>24</sup> US Bureau of Labor Statistics; Consumer Price Index (CPI) Databases; All items in U.S. city average, all urban consumers, not seasonally adjusted; series ID CUUR0000SA0; <https://data.bls.gov/cgi-bin/surveymost>; June 25, 2021.

<sup>25</sup> Salerno ([2017] 2020, 120) explains that Wicksell’s cumulative increase in the price level implies a steady increase in the price level, not necessarily accelerating inflation, and refutes Selgin’s claim that zero interest rates were not the result of the Fed’s expansionary monetary policy.

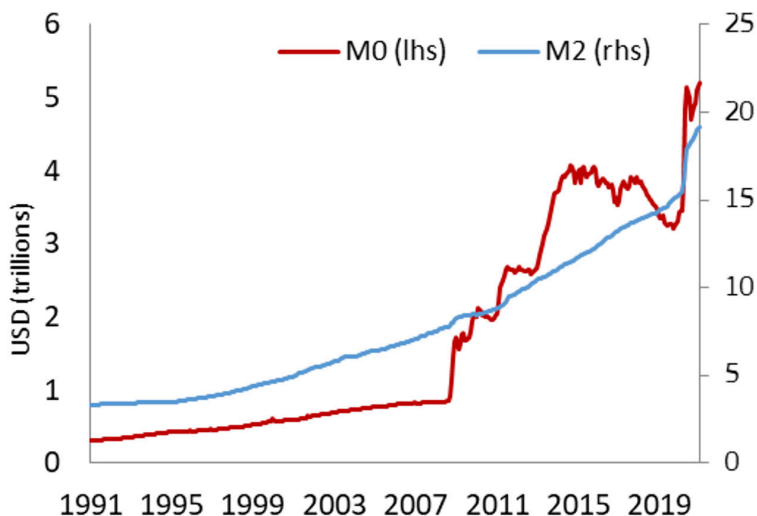
**Graph 11. CPI and import price inflation (% p.a.)**

Source: data from FRED.

In addition, the mainstream definition of inflation as an increase in prices is considered inadequate by Austrian economists. Price inflation lumps together different monetary and nonmonetary causal factors, based on both voluntary changes in preferences on the market and government intervention, which have different consequences for the structure of production, incomes, and individual wealth. Therefore, Austrian economists define inflation as an increase in the supply of money beyond any increase in specie, i.e., commodity money such as gold or silver (Rothbard [1962, 1970] 2009, 1021–22). According to this definition, monetary policy was clearly expansionary after the financial crisis, as the Fed increased the monetary base almost five times from August 2008 until a pre-pandemic peak of about \$4 trillion six years later (graph 12). Broad money supply increased at a slower pace due to the postboom debt overhang, bank balance sheet repair, piling up of excess reserves with the Fed, and greater uncertainty, which bolstered cash balances. Yet, the M2 monetary aggregate almost doubled to around \$15 trillion from 2009 until 2019, triggering substantial asset price inflation. The stock market, as reflected by the S&P 500 Index,

increased by over 260 percent, whereas housing prices, according to the S&P/Case-Shiller U.S. National Home Price Index, increased by almost 60 percent from their post-GFC troughs until the end of 2019.<sup>26</sup> Moreover, substantial net financial outflows and a strong US dollar, facilitated by the latter's "exorbitant privilege,"<sup>27</sup> have limited the impact of the large monetary expansion on domestic consumer prices. This is illustrated by subdued import price inflation, which held back overall CPI inflation in the United States (graph 11).

**Graph 12. US money supply**



Source: data from FRED.

According to the ABCT, the depression is the recovery phase which allows market forces to liquidate the malinvestments and distortions

<sup>26</sup> Macrotrends; S&P 500 Index - 90 Year Historical Chart; <https://www.macrotrends.net/2324/sp-500-historical-chart-data>; June 25, 2021 and S&P Dow Jones Indices LLC, S&P/Case-Shiller U.S. National Home Price Index [CSUSHPISA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/CSUSHPISA>, June 26, 2021.

<sup>27</sup> This refers to the advantage derived by the US dollar as the world's international reserve currency in terms of increased foreign demand for US dollar cash holdings, following the Bretton Woods arrangement.



from the boom while the economy moves toward a higher natural rate of interest. The latter provides incentives to entrepreneurs to start new investments that deliver sound economic growth. During a depression, a higher natural rate of interest is implicit in a larger price differential between the various stages of production, which is usually the result of a contraction in the supply of money and credit (Rothbard [1962, 1970] 2009, 1005–06). But this curative recession has not taken place in the wake of the financial crisis. Policies advocated by Summers, such as the Fed’s drastic cut of the policy rate down to zero and aggressive quantitative easing have maintained the misalignment of the bank lending rates with the natural rate of interest, inflating both the money supply and the price level. This has prolonged the boom’s distortions in the structure of production and relative prices, hampering a sound economic recovery and stoking the next crisis, as evidenced by the growing asset price bubbles, which were subsequently exacerbated by the unprecedented monetary and fiscal stimulus during the COVID-19 pandemic.

## CONCLUSION

Summers’s new “secular stagnation” hypothesis has been instrumental in providing a theoretical justification for the extension of ultraloose monetary and fiscal policies in the aftermath of the global financial crisis even as they failed to revive economic growth. His main argument that an excess of savings over investment has led to a significant decline in the natural rate of interest not only suffers from inner inconsistencies, such as the insufficient distinction between *nominal* and *real* interest rates and between *nominal* and *real* savings and investment, but is also refuted by available statistics on savings, investment, capital stock, and productivity. Moreover, his claim that the natural rate of interest has dropped to zero while monetary policy has been constrained by the zero lower bound is wrong. Both the federal funds rate and the bank prime loan rate have been consistently suppressed well below the natural rate of interest since the early 2000s, triggering and subsequently prolonging the current business cycle, as anticipated by the Austrian business cycle theory.

It follows that Summers’s policy recommendations, which he himself calls “palliatives” and “unlikely to be long-term solutions,” are also bound to do more harm than good. Before the United

States and other major economies worsen their decline in productivity growth and head toward long-term stagnation, punitive indebtedness, and gradual impoverishment, it is time to change course, normalize monetary policy, and reduce the heavy burden of interventionist policies. This would clean up malinvestments, realign the structure of production with the time preference prevalent in society, and rekindle business initiative and sound growth. If policies to stimulate demand have not worked for about three decades in Japan and for one decade in the rest of the world, then it should be obvious to policymakers that this has been the wrong recipe all along.<sup>28</sup>

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<sup>28</sup> Several contemporary Austrian economists have argued that the 2020 financial crisis and economic slump were already in the making before the COVID-19 pandemic hit. See Bishop (2020).

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## OLD AND NEW DEVELOPMENT ECONOMICS: A REASSESSMENT OF OBJECTIVES

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JEL CLASSIFICATION: B41, B53, O11, O12, L26, P14

**ABSTRACT:** The “new development economics” (also called behavioral development economics) consists of microeconomic experimentation based on behavioral economics and randomized controlled trials. This approach would illuminate the close relationships between preferences, culture, and institutions and point to new political opportunities. This paper describes and analyzes the new development economics’s main components and argues that the new development economics is just like the old development economics in terms of its central assumptions, objectives, and recommendations. Despite the growing recognition that social, cultural, and institutional factors profoundly affect decision-making, old and new development economists generally lean toward the extreme reductionism of the neoclassical paradigm. It is observed that research on the essence of economic development has been neglected or treated inadequately in the school’s literature. It is suggested that the findings of the Austrian theory of dynamic efficiency, based on human action’s creative and entrepreneurial feature, may allow the development economics to overcome its analytical challenges.

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The progress of underdeveloped countries depends on the supply of capital available to build the necessary infrastructure for industrialization and the rapid modernization of the economy. The emerging countries themselves cannot generate the required capital because of the poverty trap, which inexorably condemns them to low incomes. The less developed world inhibits entrepreneurial prospects, restricting local markets and strengthening the poverty trap. International trade is inefficient and often detrimental to emerging countries' advancement, as it fosters a widening income gap with rich countries. Foreign aid is crucial to escape from extreme material deprivation and ascend the ladder of economic growth. Government interventions play a crucial role in carrying out the needed changes and achieving the pathway to higher levels of equality and prosperity.

These ideas are the core theoretical framework of old development economics, which has become the dominant political and public discourse (Arndt 1987; Meier 1984, 2005; Boettke and Horwitz 2005; Boianovsky 2018; and Alacevich 2018). However, the scientific validity of old development economics has been widely questioned by some heterodox development economists (see, for instance, Bauer and Yamey 1957; Bauer 1976, 2000; Easterly 2014; and Espinosa 2020):

- If the poverty trap is valid, how does humanity not continue to live in caves?
- Given that all the currently rich countries were once poor, how was capital accumulation able to develop?
- If trade increases income inequality between countries, how can the rapid development of emerging economies such as Ireland, Poland, Estonia, Israel, Hong Kong, and Singapore be explained?
- If international trade is harmful, why are the wealthiest countries the most open to international trade?
- If foreign aid is vital for economic development, how did the currently rich countries develop without such aid?
- If global economic planning plays a crucial role in the path to higher equality and prosperity levels, why are the wealthiest countries in the world precisely those with the most significant economic freedom?

Although there is a consensus that development supposedly means moving from one type of economy to a more advanced one, the inconclusiveness of the leading old development theories has shown the field's "inability to adjust the demands of the main tasks of the day, that is, the elaboration of policies that favor the development in the least developed countries" (Alacevich and Boianovsky 2018, 2). As Romer (2009, 126) discerns, development economics must review its fundamentals on "how to contribute to better policy in developing countries ... at a time when many economists are skeptical."

In the eyes of a new generation of development economists, old development economics's efforts, albeit necessary, showed that its macroeconomic approach does not come to any relevant conclusions about the poor's economic lives (Coyne and Boettke 2006; Banerjee and Duflo 2011; Coyne 2013). Thus, it was concluded that the central focus of research and teaching in development economics should be at the microeconomic level of social, cultural, and institutional factors that help explain real-life human behavior. The new development economics (NDE), also called behavioral development economics (BDE), analyzes underdevelopment problems using psychological models of quasi-rational decision-making and preference formation, rather than the *homo oeconomicus* models (Thaler 2000; Demeritt and Hoff 2018). These economists consider randomized controlled trials (RCTs) in experimentation as the best way to advise governments on policy design in all its details to reduce poverty.

This paper argues that the old and new development economics share the same main assumptions, objectives, and recommendations. Despite the growing recognition that social, cultural, and institutional factors profoundly affect decision-making, old and new development economists generally prefer the neoclassical approach of extreme reductionism. The research on the essence of economic development has been neglected or treated inadequately in the development economic literature. This approach does not recognize economic development as the by-product of achieving social cooperation and coordination driven by human action under the division of labor. Consequently, the old and new development economics analysis is narrowed to testing the superficial problems of economic underdevelopment. The paper proposes that the Austrian theory of dynamic efficiency, based on the creative and



entrepreneurial potential of human action, would be adopted as a way for the new development economics to overcome the analytical challenges of its macroeconomic approach. More specifically, it is recommended that dynamic flesh-and-blood entrepreneurship be placed at the core of development theory, which would redesign its objectives of policy analysis and institutional change in under-developed economies.

The paper proceeds as follows. The first two sections explain the objectives and tenets of the “old” development economics and the “new” development economics’s theoretical core, respectively. Then, the “Austrian” theory of dynamic efficiency is presented as a solution to the analytical challenges of development economics. The final section discusses the future of the discipline.

## THE CRISIS OF DEVELOPMENT ECONOMICS

In the 1940s, 1950s, and 1960s, economic thinking about economic development was confined mainly to the United Nations’s (UN) international organizations. At the same time, some pioneering work began to emerge in this field, including Rosenstein-Rodan (1943, 1944, 1961a, and 1961b), Nurkse (1952, 1953), Prebisch (1950), Myrdal (1956, 1957, and 1968), Singer (1949, 1950), Lewis (1954, 1966), and Hirschman (1958). These books and papers “crystallized what, over the next two decades, became the conventional wisdom about economic development” (Arndt 1987, 49).

The “old” development economics relied on dual models, in which a traditional sector, mainly agricultural, was contrasted with a modern industrial sector. According to development pioneers, poverty was the result of vicious circles caused by the interaction of various economic phenomena on the supply side (low per capita income, low propensity to save, insufficient capital, and low productivity) and on the demand side (low purchasing power, insufficient market size in the modern sector, lack of investment, and low average productivity). They concluded that the free market did not lead to the desired pattern of economic development. For this reason, the state ought to direct the modernization process by diverting resources from traditional and “backward” activities to selected modern activities. To break the vicious circles, they proposed increasing the size of the

market (to take advantage of economies of scale), channel existing resources into the modern sector, and generate more incentives for saving, such as controls on demand for consumer goods.

The old development economics's backbone was the Harrod-Domar model, strongly influenced by John Maynard Keynes (Boianovsky 2018). According to the Harrod-Domar model, GDP depends directly on the investment ratio and inversely on the capital-output ratio. Two groups of theories that emphasized the state's role in initiating and coordinating a massive investment effort in the industry (big push) were developed from the Harrod-Domar model: the theories of balanced growth and unbalanced growth.

On the one hand, balanced growth results from an equitable distribution of investment among the different consumer-goods sectors, which can then take advantage of the interdependencies between them to accelerate growth. On the other hand, unbalanced growth results from the concentration of investment in those industries believed to be more apt to promote growth in other sectors. These sectors are the ones with the greatest forward-chaining (in consumer goods industries) and backward-chaining (in capital goods industries) effects.

Thus, two of the key characteristics of the “old” development economics can be highlighted: 1) the recourse to central planning in the selection of the most productive “modern” activities; 2) the resort to intervention in the economy to coordinate the diversion of resources toward these activities, either by trying to promote most of them in a balanced way or by focusing on those sectors believed to have tremendous growth potential.

Prominently, Rosenstein-Rodan (1943) defined the theoretical and political issues that became the core of the new discipline of development economics in the postwar years.<sup>1</sup> First, he emphasized

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<sup>1</sup> Paul Rosenstein-Rodan (1902–85) attended Ludwig von Mises's private seminar at the Vienna Chamber of Commerce, which was also attended by Fritz Machlup, Oskar Morgenstern, Gottfried von Haberler, Alfred Schutz, Richard von Strigl, Eric Voegelin, and many other intellectuals from all over Europe. However, Jörg Guido Hülsmann (2007, 161) explains that Rosenstein-Rodan was “shaped by the Wieserian mold before setting off on [his] intellectual paths. Largely ignorant of [Carl] Menger's *Principles* (out of print since the 1880s), [he was] trained in the spirit of the neoclassical synthesis.”

the impact of overpopulation on the low productivity levels of developing countries. Second, he discussed the institutional and cultural elements that make it difficult for a developing country to industrialize. Third, he argued that capital accumulation and industrialization are essential to eliminating poverty but that it is difficult for entrepreneurs to establish new factories due to capital shortage in developing countries. Fourth, he highlighted the need for global planning to overcome coordination problems and promote economic development. Without the government's increase in "effective demand," investment opportunities would stall, and poverty would be perpetuated indefinitely. In sum, Rosenstein-Rodan laid the foundations of the poverty trap theory: the idea that poverty is an insurmountable obstacle that can only be overcome with political intervention and a big push.

Rosenstein-Rodan's influence was manifold and important. First, Nurkse (1952) formalized the poverty trap theory due to supply and demand events. On the demand side, if incomes are low, the market's size is too small to stimulate private investment. Shortage of investment means low productivity and continued low income. On the supply side, if incomes are low, consumption cannot be diverted toward capital formation and accumulation—shortage of capital results in low productivity, which perpetuates low incomes. Thus, the vicious circle is complete: a country is poor because it was too poor to boost entrepreneurial investment.

Second, Rosenstein-Rodan's poverty trap thesis suggested a widening inequality gap between developed (rich) and underdeveloped (poor) countries, based on enormous differences in these two distinct groups' per capita incomes (Prebisch 1950). Therefore, emerging countries should somehow increase national investment.

Third, if tax revenues are insignificant, developing countries' governments will not perform economic planning accurately. How to get the necessary capital in developing countries? Lewis (1954), based on the Harrod-Domar model, proposed an unlimited supply model, where policies aimed at increasing aggregate rates of saving and investment help overcome the poverty trap. If domestic saving is very low, it should be complemented by external savings in

foreign aid.<sup>2</sup> Thus, international organizations should quantify the aid for each country, and with this money, the governments of less developed countries will promote industrialization and self-sustaining development (Hirschman 1958). Finally, global planning is a “heroic” attempt to overcome “cultural stagnation or regression” of the poverty trap (Myrdal 1956, 65).

Economists of the early development theory shared a commitment to planning and the conviction that economic problems would yield to the actions of benevolent states endowed with sufficient supplies of capital and armed with good economic analysis (Leys 1996). They designed development plans for newly independent countries and the not yet independent African colonies based on raising rural productivity and transferring underutilized labor out of agriculture into industry. However, the hope of achieving economic growth through policies based on development theory soon began to unravel: “By the end of the 1950s, ... the original optimism that this approach would yield rapid results had begun to evaporate, and the limitations of development economics as a theory of development were beginning to be exposed” (Leys 1996, 8). Dissatisfaction with the development policies’ results led to the rise of new theories based on the Prebisch-Singer thesis, advanced independently by Raúl Prebisch and Hans Singer in the late 1940s.

The Prebisch-Singer thesis is that over time poor countries will have to export more of their primary commodities to maintain their levels of imports from the rich countries. This is because prices in advanced economies rise more quickly than those in more backward ones. Differences in income elasticities of demand strengthen this effect: demand for finished goods rises with income, but demand for primary goods varies less with income. Therefore, underdevelopment results from the prevalent economic structure and the international division of labor.

The Prebisch-Singer thesis is the backbone of two different development theories: structuralism and dependency (see, for instance,

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<sup>2</sup> Foreign aid (official development assistance, ODA) refers to “intergovernmental grants and subsidized loans in cash or kind.... It does not refer to external loans raised by governments abroad on commercial terms, nor to private foreign investment, nor to the activities of voluntary organizations” (Bauer 1976, 95).

Toye and Toye 2003). Structuralists argue that the only way poor countries can develop is through state intervention in economic performance. Because trade is reduced by the erection of all kinds of political barriers and an overvaluation of the domestic exchange rate, the production of domestic substitutes of formerly imported industrial products is encouraged. Poor countries have to push industrialization and have to reduce their dependency on trade with advanced economies. The logic of the strategy rests on the “infant industry argument,” which states that young industries initially do not have the economies of scale and experience to compete with foreign competitors and thus need to be protected until they can compete in the free market.

Dependency theory is a more radical follow-up of structuralism. Dependency theorists also think that underdevelopment is mainly caused by the peripheral position of the affected countries in the world economy. However, they believe that the only way out of dependency is to search for autarky and create a socialist economy.

This belief explains why economists such as Singer warn that poverty is a consequence of colonialism and imperialist capitalism. While international trade is pernicious to developing countries, “the establishment of a socialist planned economy is an essential condition for attaining economic and social progress in underdeveloped countries” (Baran 1957, 416).

Unfortunately, as John Rapley mentions, the implementation of economic measures based on structuralism and dependency also led to disappointing results:

[T]he difficult truth was that in many places, economic growth barely kept pace with population growth and inflation, and progress was much slower than had been hoped. In real per capita terms, a significant portion of humanity ended the twentieth century poorer than when it welcomed political independence. (Rapley 2007, 57)

Despite its poor results and intense debates about its scientific validity, the public policy recommendations of the “old” development economics are at the heart of current United Nations development programs (Edwards 2015; and Toye 2018). Consider, for instance, the case of Jeffrey Sachs, director of the UN Millennium Project and renowned economist at Columbia University, who

conceives breaking the poverty trap as experts' fundamental objective. As Sachs (2015, 105) states,

[T]he underlying condition [of underdevelopment] could be what I call a poverty trap: when the country is too poor to make the basic investments it needs to escape extreme material deprivation and climb the ladder of economic growth.

The poverty trap involves a distinction between countries, groups, or individuals, rich and poor, not only in terms of their "country's average level of income but its distribution of income" (Sachs 2015, 55). Accordingly, the government should plan the distribution of income to propel countries toward higher economic equality and success levels.

Foreign aid plays an essential role in Sachs's proposal "to help a poor country make the crucial early investments needed so that the economy can soon stand on its own and begin climbing the development ladder" (Sachs 2015, 172). Foreign aid would push the capital stock elements (i.e., infrastructure, human capital, public administration) toward self-sustaining economic growth. As Sachs (2015, 175) argues, it should make a substantial difference when applied on a "professional basis grounded in an accurate differential diagnosis of the needs of a low-income country." The practical steps to reach the UN millennium development goals (MDG) in each country can and should be diagnosed, planned, and implemented with the proper focus and actions, combined with proper support from the international community. That is why the United Nations calls for adequately generous increases in foreign aid. It is the raise of a minimum of 0.7 percent of GDP would have to bring the level of UN support to at least 10 percent of therecipient developing countries' GDP. With this aid, experts could design policies in all their details to escape the poverty trap and the widening gap (United Nations 2005).

Nevertheless, the United Nations (2015, 8) shows that although "significant achievements" have been made on many of the MDG targets worldwide, "progress has been uneven" across regions and countries, leaving significant gaps. Millions of people "are being left behind," especially the poorest and those disadvantaged because of their sex, age, disability, ethnicity, or geographic location. Accordingly,

authors like William Easterly (2009) and Christopher Coyne (2013) suggest that “old” development economics is in crisis because global planning even worsened developing countries’ economies, notably in Latin America and sub-Saharan Africa. Easterly (2002, 88) believes that the record of the “old” development economics is one of failure: “The efforts that we as development economists, aid donors, and policymakers have made have not worked.”

## THE NEW DEVELOPMENT ECONOMICS

In the 1990s and 2000s, a new way of conceiving development interventions appeared as a response to the failure of what Easterly (2014) calls “big push reasoning,” the legend that the poorest countries are stuck in a poverty trap from which they cannot emerge without an aid-financed big push. This reaction included academic economists with a distrust for big plans to eradicate poverty, and its focus, instead, was on the use of experiments to determine smaller interventions for the solution of specific problems. As an example of this new practical scientific approach, Easterly mentions the work of Bouguen et al. (2019) about the effects on school absenteeism of programs that administered deworming drugs to school kids.

The main tool employed in Bouguen et al. (2019) was the randomized control trial (RCT), which may be seen as one of the characteristic features of this new development economics, also called behavioral development economics (Rodrik 2009). An RCT is a trial in which subjects are randomly assigned to one of two groups: one receiving the intervention that is being tested (the experimental group), and the other receiving an alternative conventional treatment (the comparison group or control).<sup>3</sup> The two groups are then followed up with to see if there are any differences in their outcomes. The trial results and subsequent analysis are used to assess the effectiveness of the intervention, which is the extent to which treatment, procedure, or service does patients more

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<sup>3</sup> RCTs come from the natural sciences, particularly “evidence-based medicine,” where they are used to evaluate the statistical effects of different types of drugs and treatments (Sackett et al. 1996). During the 1990s, this “gold standard technique” was imported into development economics as an “evidence-based policy approach” to investigate cases of everyday life (Pawson 2006; and Banerjee et al. 2017).



good than harm. RCTs are believed to be the most stringent way of determining whether a cause-effect relation exists between the intervention and the outcome (Kendall 2003).

The employment of RCTs in development economics is advocating mainly by the efforts of the Poverty Action Lab (J-PAL), a global research center founded in 2003 by Abhijit Banerjee, Esther Duflo, and Sendhil Mullainathan to reduce poverty by ensuring that policy is informed by scientific evidence. The J-PAL was established to support randomized evaluations measuring interventions against poverty in areas such as health, agriculture, education, or governance. Advocates of RCTs argue that they serve to identify both the causes of poverty and the incentives needed to escape the poverty trap. They believe that this method will encourage more efficient government interventions to foster economic development.

For economists like Banerjee, the use of RCTs represents a departure from the old way of thinking in development economics, since the analysis of underdeveloped economies concerns “an enormously complex set of different strategies, and not a single button on the machine to be pushed or not” (Banerjee 2007, 142). Mathematical economics neglects the ultimate foundations of what happens in poor countries’ economies and institutions, so that “development experts are still thinking in machine mode: they are looking for the right button to push” (160). Thus, Banerjee and other economists, chiefly from the J-PAL, propose RCTs to verify foreign aid programs’ effectiveness. RCTs improve the impact evaluation of social programs, because they “[force] us to venture inside the machine” (162).

One curious result of the RCTs’ rise is that the new development economics is moving away from pure economic theory and the big questions about the essence of economic phenomena. RCT experts often reject praxeological theory because it would not help with deciding the details of government policies. They conceive the economist as a kind of plumber focused on designing and predicting the results of several market interventions (Banerjee 2005; and Duflo 2017). As Banerjee (2007, 115) writes, “[T]he beauty of randomized evaluation is that the results are what they are: we compare the outcomes in the treatment with the outcome in the control group, see whether they are different, and if so by how much.”



Banerjee (2007) suggests that RCTs are the best and most direct way of knowing which foreign aid program works and which does not. Although a single experiment does not provide a final answer on any intervention's universal validity, a series of hundreds or thousands of experiments could reinforce more government interventions at the margin. As Stephan Dercon (2018) comments,

[E]verything has to be inductive and experimental for the New Development Economics. Lots of little solutions will move us forward. They have no big theory of what causes low growth, no big questions, just "a technocratic agenda of fixing small market failures". Getting institutions right is not crucial.

Experts will recommend the cheapest policy strategies among thousands of prescriptions, like a doctor prescribing aspirin for a headache. Thus, Behavioral development economics's lack of interest in theoretical thinking and its focus on experimentation for the assessment and evaluation of policies has been criticized because theory is needed to understand the causal relations that may lead to economic growth and development. For example, Deaton says that "we are unlikely to banish poverty in the modern world by trials alone unless those trials are guided by and contribute to theoretical understanding" (2010, 452). Rodrik (2009, 42) adds that "pragmatism does not imply the absence of theory. The only meaningful way in which one can sift through the evidence—or indeed know what kind of evidence to look for—is through the prism provided by clearly articulated theoretical frames." And Kumar (2016, 84) thinks that "understanding the causal processes underlying responses to a tested intervention could help extrapolate to a different but related policy, and a structurally distinct context."

The detachment from grand theory and the big economic questions is relevant because it may lead, inadvertently, to the preservation of old theoretical assumptions and the repetition of previous failed recommendations and policies. We could argue that the new development economics does not represent a radical departure from the old development economics but is its continuation.

One element of the new development economics that reflects continuity with the old is the faith put in government intervention. Generally speaking, in the work of the "randomists" (the new

development economists), there is little questioning of the need for government intervention or justification. For example, when Banerjee and Duflo consider the case of government intervention in education, they state one (questionable) ethical argument: “A civilized society cannot allow a child’s right to a normal childhood and a decent education to be held hostage to a parent’s whims or greed.” From this, they directly proceed to justify conditional cash transfers: in states with limited capacity for enforcing compulsory education, the government “must make it financially worthwhile for parents to send their children to school” (Banerjee and Duflo 2011, 77).

Banerjee and Duflo (2011, 216) state that “governments are necessary, to provide basic common goods and enforce the rules and norms that the market requires to function.” It is not clear how such a statement could be demonstrated with hard scientific evidence by conducting RCTs, but they do not try to do this. They just accept this theoretical assumption and justify it with a brief illustration of a free market in driver’s licenses. Consider, for instance, Hoppe (1989), Frey and Eichenberg (1999), Block (2003), Bastos (2005), Risse (2011), Kode (2013), and Risse and Stollenwerk (2018), who suggest that the need for governments to provide public goods is not such an obvious and indisputable principle. Indeed, Kode (2013, 5) states that “while a strong state is often seen as necessary, a close look at the empirical reality on the ground calls into question the state’s role as a necessary precondition for security, peace, development, and more broadly, the provision of public goods.”

The first theoretical principle underlying the faith in government intervention is the idea of poverty traps, which also shows the continuity between the “old” and the “new” development economics. When Banerjee and Duflo (2011, 21–24) discuss the idea of poverty traps, it seems that they think that “the existence of a specific poverty trap” is a possibility that has to be empirically assessed on a case-by-case basis. But later they talk about many poverty traps for whose existence they do not have definitive or impressive empirical evidence but which they accept on the ground of theoretical assumptions. Thus, they believe in the existence of a nutrition-based poverty trap in terms of the quality of food or a shortage of micronutrients (43–44); they believe that health can be a source of several different traps (46–52); they believe in the existence of a savings trap created by behavioral and technological

conditions (177–79); and they believe in a vicious circle where small size firms are stuck at a small size (190–201).

Consider, for instance, the latest poverty trap.. According to Banerjee and Duflo, there is a level of investment that must be reached to make serious money. If an entrepreneur invests little, he makes little money and remains too poor to invest much more. If an entrepreneur invests enough to reach the critical point, he becomes rich, invests more, and becomes even richer. The problem is that in a poor country most people do not have that option. No one will lend these small entrepreneurs enough money. Moreover, getting there might also require management and other skills that they do not have and cannot afford to buy. They are stuck at a small size. The entirety of this argument accords with the old development theory.

The only difference is that economists like Rosenstein-Rodan, Lewis, and Rostow had a macroeconomic approach while the randomists have a microeconomic approach. The rest is the same. Moreover, the solution proposed by Banerjee and Duflo is an old one also: to establish a virtuous circle, stable and higher wages are needed. This would give workers the financial resources, the mental space, and the necessary optimism to invest in their children and save more. With those savings and the increased access to credit that a steady job brings, the most talented among them would eventually be able to start businesses large enough to, in turn, hire other people. Besides the creation of government jobs, Banerjee and Duflo (2011, 208) think that

there may be a case for using some governmental resources to help create enough large businesses by providing loan guarantees to medium size ventures.... The way out of poverty is not one more shed with some cows in it, but a son with a secure job in the army.

The second principle that shows the continuity between the “old” and the “new” development economics is the NDE’s top-down planning approach. Even though the randomists talk about decentralization and increasing people’s involvement and participation in development strategies, Banerjee and Duflo (2011, 222–23) believe in giving power to the people but not all the power:

If the rules make such a difference, then it becomes very important who gets to make them. If the village is left to its own devices, it seems likely

that rulemaking would be captured by the elite. It might therefore be better for the decentralization to be designed by a centralized authority, with the interest of the less advantaged or less powerful in mind.

This kind of enlightened despotism comes from the behavioral economics of the randomists. Poor people make all kinds of bad choices, but they can be led to make better choices with the enlightened help of technocratic experts. For example, according to Banerjee and Duflo, poor people behave as if they thought that any change significant enough to be worth sacrificing for will take too long. Instead of spending enough money on healthy food, “they spend their money on unhealthy but tastier food or cheap luxuries like television sets” (Banerjee and Duflo 2011, 39–42). Poor people do “not save, in part, because they lack self-control” (174–79). Although poor people choose to have large families, , what leads them “to make these choices are factors outside their immediate control like social pressures” and even the lack of availability of contraception does not seem to be a big constraint (112). In establishing the right set of incentives, the expert’s role is to threaten people’s bad choices so that they can make good choices. This involves “giving away goods and services” for free or even rewarding people for doing things that are good for them (239).

This attitude represents an example of what James C. Scott (1998) calls “high modernism,” an ideology instrumental in the modernization period of the old development economics that was grounded in the belief that a scientific, technically trained elite could take responsibility for social planning. According to Scott, the twentieth century’s major development disasters derived from a toxic combination of epistemic arrogance and authoritarian power, including excessive confidence in the ability of “scientific management” to order and organize human activity. The new development economics would represent a softer version of the high modernism with a smaller-scale focus.

The last source of continuity between the “old” and “new” development economics is their shared view of costs and benefits. From an Austrian perspective, costs and benefits are not objective, since they are the result of individual choices. Costs and benefits are subjective, because they are the result of *ex ante* anticipation of foregone opportunities. If an agent thinks that the value of the achieved end is higher than the value of the foregone opportunities (costs), then the agent

has obtained a subjective profit (benefits). Profits and losses show whether there has been a correct use of scarce resources, and guide people to the achievement of everhigher valued ends.

In contrast, the randomists analyze costs and benefits as something objective and measurable. They try to evaluate public policies based on their effects over a specific set of objective and measurable characteristics. Despite all their good intentions, they have not abandoned the analysis of underdeveloped economies as machines with buttons to be pushed. These machines have more than one button and they believe that RCTs are the only way to know which one to push.

In summary, losing sight of the big-picture questions means that, in the end, the practitioners of the new development economics ultimately make the same recommendations as the old development economics. Development economists often assume the existence of a poverty trap but fail to explain its ultimate foundations. It may be a relevant reason why theoretical thought is still important: to avoid repeating old mistakes. For this reason, it is argued that Austrian theory—its perspectives on the entrepreneurial essence of the dynamic market process, the role of the structure of production, and the importance of evolving institutions in economic performance—can overcome the new development economics's theoretical insufficiencies.

The Austrians' uniqueness lies in their "analytical contributions to our understanding of the epistemic-cognitive properties of alternative institutional arrangements" (Boettke 2002, 265). These contributions lead to the recognition of the uncertainty inherent in all economic decisions and of the entrepreneurial nature of the market process as the essence of economic phenomena. The Austrian theoretical framework would help "new" development economists identify the essence of underdevelopment, in addition to bringing their empirical constructions closer to real-life dynamics.

## **ENTREPRENEURSHIP, DYNAMIC EFFICIENCY, AND DEVELOPMENT**

This section explains how Austrian economics improves the old and new development economics approach to understanding the

essence of economic phenomena. Austrian theory explains that market phenomena are governed by defined chains of cause and effect, which constitute and generate a defined process that reflects entrepreneurial decisions. It argues that economic development objectives are best achieved by strengthening entrepreneurship through an institutional environment conducive to private property. This statement requires clarifying how this perspective challenges the wisdom of old and new development economics and leads to better historical analysis and qualitative predictions (pattern prediction). By encouraging a broader perspective, the application of Austrian economics would be a step forward in recognizing the dynamics of underdeveloped economies.

Although poverty has been the “natural” condition of human beings, entrepreneurship’s dynamic efficiency has contributed to overcoming it. Entrepreneurship entails the ability of individuals to perceive hitherto unsuspected opportunities for profit and the willingness to take advantage of them.<sup>4</sup> What economic theory finds in the entrepreneur is valid for all human beings, regardless of people’s role in society. As Ludwig von Mises argues, “in any real and living economy, every actor is always an entrepreneur” (1966, 253). The flesh-and-blood entrepreneur is the driving force behind the entire market process, which is often neglected in the “old” and “new” development economics literature. In other words, the analysis of entrepreneurship as the engine of economic phenomena contributes novel findings on how the dynamic process of development works:

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<sup>4</sup> Human action is linked to entrepreneurial behavior. Entrepreneurship etymologically comes from the Latin verb *inprehendo-endi-en-sum*, which means “discover, perceive, identify, carry out.” This meaning is indicative of systematic steps in perceiving profit opportunities, which sheer ignorance could tend to dissipate. Indeed, the Real Academia Española (Royal Spanish Academy) (2020) defines *enterprise* as an “*action* that involves difficulties and whose execution requires decision and effort.” It is also the “*intent or design to do something*,” that is, to perform an *action*. An entrepreneur is one who “*commits to resolution actions*” as something “*proper to people*.” Italics are mine. In the tradition of Carl Menger, Ludwig von Mises, Friedrich Hayek, Israel Kirzner, and Murray N. Rothbard, entrepreneurship is also connected to private property. Without private property, entrepreneurs cannot take advantage of perceived profitable opportunities. For more on this, see Salerno (2008); Huerta de Soto (2010); and Klein and Bylund (2014). The translation is own.

1. Entrepreneurship is the essence of economic development.
2. The poverty trap is only valid in an institutional environment adverse to entrepreneurship.
3. The replacement of entrepreneurship by top-down economic planning inhibits economic development.
4. Costs and benefits are subjective, therefore, it is impossible to coordinate individual action plans through top-down economic planning.

The role of development policy is to reduce the political barriers to entrepreneurship.

Israel Kirzner identifies the entrepreneur's alertness as the core of economic development. The scope of entrepreneurial alertness "refers not to the ability to see what exists, but to the necessarily speculative ability to see into the future. In particular, such metaphorical alertness may consist in the vision to create something in the future" (Kirzner 1985, 7). Alertness implies human action that reshapes the entire map of individuals' ends and means as they act in their contexts. Alertness allows the entrepreneur to notice new profit opportunities to improve his condition, that is, creativity does not need prior means. Alertness creates an idea in the entrepreneur's mind, but his human action guided by that idea requires assets to achieve ends. He can speculate *ex ante* about his action's effectiveness, but the outcome of his alertness can only be verified *ex post*. Alertness also involves serendipity, the ability to realize opportunities that arise by surprise, without being deliberately sought, and act accordingly.

Entrepreneurial knowledge is subjective, because it cannot be represented formally; the individual acquires it through practice (Huerta de Soto 2009). Knowledge is scattered in the minds of all individuals, who create it as they seek their ends in unique historical conditions. Entrepreneurs learn how to perform specific actions (know-how) and acquire practical behavior patterns. These actions allow entrepreneurs to articulate their knowledge and improve alertness through a dynamic process of "learning by seeing" and "learning by doing." It is the eureka flash in terms of subjective interpretation through daily experiences and expectations. However, the power of individuals' minds is limited, since they are



not omniscient, omnipotent, or omnipresent, and this causes the dynamic process of social cooperation, well known as the market. As Mises (1966, 259) writes, “the market process is the adjustment of the individual actions of the various members of the market society to the requirements of cooperation.”

The price system is the method of communicating entrepreneurial information through the market process, i.e., all the exchange ratios built on the relative scarcity of the goods and services subjectively valued by each actor as a seller or consumer, participating in the market or abstaining from doing so. The rise of market prices requires the presence of private property, which enables subjective assessments of voluntary exchanges. Market prices are indeed historical relationships of exchange that help human minds perform a rational economic calculation: the estimation in monetary units of the possible outcomes of different courses of action. Economic calculations are reflected in profit-and-loss accounting and expectations, which guide entrepreneurs on what to produce, how to produce, and in what quantity (Salerno 1990). Although the control of production is the task of entrepreneurs, consumers are the sovereigns who can enrich the poor and impoverish the rich. Entrepreneurs propose goods and services in the market, but consumers have the freedom to choose the best or the cheapest ones for themselves.

Knowledge of market prices and the ability and willingness to use this knowledge is indispensable in finding the most economical uses of available resources. This dynamic process develops the productivity of resources and tends to increase incomes, enabling the accumulation of additional resources. Thus, the market process fosters social coordination. Entrepreneurs tend to discipline their behavior in line with consumers’ needs. A final state of equilibrium (when all profit opportunities are given) is never reached; these coordination trends generate new discoordination to be perceived and adjusted by entrepreneurs. The insight of entrepreneurs in serving consumers is what steadily tests their reputation in the market. Because entrepreneurs may only prosper if they continually adjust their intellect to satisfy others’ needs, the entrepreneurial coordination process is dynamically efficient (Kirzner 1997, 2017). Given that the economic calculation is subjective, it is impossible to coordinate individual action plans through top-down economic planning (Huerta de Soto 2010).



The material development of a society is greatly assisted when the qualities of entrepreneurs, such as a long-term vision in adopting ideas and taking risks, are present to a high degree. Entrepreneurs seek to reduce as much as possible those time barriers that separate them from achieving their goals (Kirzner 2009). The entrepreneur tends to pursue potential profit opportunities in the long term when he considers that the goals to achieve are higher than those he could reach in the short term. If the entrepreneur perceives a more worthwhile goal in the future, he will transfer part of his present consumption toward a higher expected level of future consumption. In other words, saving is an essential requirement to accumulate capital and produce capital goods, all the goods or services that the actor believes subjectively necessary to produce other goods or services.

The structure of production consists of a series of stages that require time, from entrepreneurial alertness to a profit opportunity, the acquisition of capital goods (i.e., land, labor, capital, and technology), and the combination of them through successive stages until the final consumer goods are obtained. Moreover, capital goods are heterogeneous and have multispecific uses, both because of their physical dimensions and the different plans they can satisfy (Foss et al. 2007). The general outcome of an increasing level of capital is a more capital-intensive method of production. Prior savings allow the creation of more and better goods offered at a lower price for people, increasing consumption per capita.

The dynamic process of intertemporal coordination is influenced by the price of time, better known as the interest rate, mainly composed of society's time preference, the default risk premium, and the expected change in money's purchasing power.<sup>5</sup> The interest rate guides entrepreneurs toward the stages of the production process that are relatively more profitable. When people increase their level of savings, the supply of loanable funds rises and the interest rate falls. This event makes entrepreneurial projects

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<sup>5</sup> Hülsmann (2002) argues that the originary interest rate depends on the subjective assessment between individuals' ends and means, which determines how market participants choose between production alternatives with different time frames and expected profit and productivity. When the originary interest rates are manifested, the production structure and the interest rate are determined.

relatively more profitable in the formative stages, farther from final consumption: investment in capital goods grows (Manish and Powell 2014). Saving fosters economic development, because the incentives of entrepreneurs (investing in projects of greater complexity and maturation time) tend to coordinate with the goals of consumers (consume more in the future).<sup>6</sup>

International trade also improves dynamic efficiency, because it contributes to the technological and cultural exchange between countries, which tend to move from subsistence to exchange in new markets. Free trade and population growth strengthen the division of knowledge and labor. If everyone dedicates their efforts to what they consider subjectively more efficient and exchanges with others in domestic free trade, the same rule applies in the international market (Manish and Powell 2015). The most prosperous regions and sectors are those that have established business contacts with the most advanced countries. In contrast, the most impoverished and backward populations are generally those with little or no foreign trade.

Accordingly, economic development is better understood as the widening range of entrepreneurial alternatives open to individuals, which implies “the accumulation of available solutions to human problems” (Beinhocker and Hanauer 2014, 4). Increasing well-being in underdeveloped economies depends on the freedom to exercise entrepreneurship in a virtuous process of technological change to meet the increasingly complex demands of individuals. There are no frontiers for economic development, because there are no limits to creating new alternatives for people.<sup>7</sup> Hence, development is

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<sup>6</sup> If the interest rate is altered artificially, an intertemporal discoordination is generated between entrepreneurs and consumers, which drives recurring boom-and-bust cycles (Garrison 2001; Huerta de Soto 2006).

<sup>7</sup> Beinhocker and Hanauer (2014, 4) suggest that “these solutions run from the prosaic (crunchier potato chips) to the profound (cures for deadly diseases). Ultimately, the measure of the wealth of a society is the range of human problems it has solved and how available it has made those solutions to its people. Every item in a modern retail store can be thought of as a solution to a different kind of problem—how to eat, dress, entertain, make homes more comfortable, and so on. The more and better the solutions available to us, the more prosperity we have.” For more details on the link between entrepreneurship and technological improvement, see Holcombe (1998, 2009).

not a unique and absolute value for all people. It is a subjective appreciation that depends on individuals' ends and means in the context of their action plans.

The essential difference between prosperous and poor societies lies in the former having a more robust network of entrepreneurial capital invested than the latter. A more capital-intensive production gives rise to better and more accessible technologies to solve the people's needs (e.g., industry, transportation, education, health, social security, or environment). Technological progress boosts the efficiency of workers and thus their level of income. As entrepreneurship drives the extension and deepening of the division of knowledge (or division of labor), the progressive division and subdivision of the production stages proceeds horizontally and vertically. In short, entrepreneurial alertness plus investment in capital goods are the key elements in improving people's well-being.

The poverty trap is only valid in an institutional environment adverse to entrepreneurship. Indeed, the rise of evolutionary social institutions, such as language, morality, private property rights, law, money, and culture, explains the creative and coordinating feature of entrepreneurship to produce more and better solutions to human problems and reduce transaction costs and uncertainty.<sup>8</sup> As Acemoglu et al. (2019) put it, development requires "inclusive institutions" based on the enforcement of private property rights and competitive markets that create broad-based incentives and opportunities in society. By contrast, "extractive institutions" lack these properties and impoverish society.

Notably, "extractive institutions" explain economic and technological underdevelopment through significant political barriers to the free exercise of entrepreneurship. Coerced people perceive that they may have a better chance of achieving their goals if they use their creativity to influence political decision-making: this is

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<sup>8</sup> There is a widespread myth that attributes the rapid economic growth of Asian tigers (i.e., Japan, Taiwan, South Korea, Hong Kong, and Singapore) to government development planning. In those cases, governments used their power, authority, and fiscal incentives to strengthen private property and stimulate increasingly capital-intensive production. The prosperity of these countries is best explained by their economic freedom backed by a probusiness state and not a predatory state. For more details on this, see Yu (2000); and Powell (2005).

the “corruption effect,” that is, unproductive or destructive entrepreneurial behavior.<sup>9</sup> Indeed, political and cultural institutions significantly shape the source of these barriers, which include low maintenance of law and order, instability in political and economic institutions, unstable monetary conditions, and confiscatory policies through high levels of taxes and regulation (Boettke and Coyne 2003; Leeson and Boettke 2009; March, Martin, and Redford 2016; Espinosa, Wang, and Zhu 2020; Espinosa 2021). Thus, the replacement of entrepreneurship by top-down economic planning inhibits economic development. These situations affect people’s ability and willingness to look beyond the immediate present and take a long-term view.

Some regulations, such as labor legislation, price controls, tax levels, banking laws, and licensing requests, among others, restrict potential competition. If the regulation policy becomes more widespread, the government will tend to favor entrepreneurs who are already installed in the market to the detriment of society (Ikeda 2015). Thus, entrepreneurship’s political barriers promote economic power concentration, leading to corruption, distortion of price signals, and waste of resources. To have a monopoly, entry barriers are needed so that most people do not have opportunities or incentives to innovate or create companies. The most effective monopolies are those created by government regulations: entry barriers make it difficult or unfeasible for new competitors to emerge, and corruption is strengthened through rent seeking (Cachanosky 2020). Therefore, the diffusion of decision-making is reduced and the range of alternatives open to people is narrowed. This is the exact opposite of the broad-based incentives and opportunities required to create prosperity.

Competition without barriers to entry fosters creative and coordinating behaviors in both incumbent entrepreneurs and potential

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<sup>9</sup> Entrepreneurship takes place independently of the institutional environment, which can only influence the available types of profit opportunities. In an intervened market, private property institutions and the profit and loss system are damaged or substituted by political power decisions. See Boettke and Subrick (2003); and Boettke, Coyne, and Leeson (2008). Nonproductive entrepreneurship occurs when actors perceive that it is more profitable to seek government privileges than to serve consumers. Concerning nonproductive entrepreneurship, see Acemoglu and Robinson (2019).

players. Hence the role of development policy is to reduce the political barriers to entrepreneurship. Economic development, that is, the widening range of alternatives open to the people, is only possible when the right to private property is respected in an organized society with contractual ties and when assault on private property and breach of contracts are penalized. In sum, the government can support the expansion of access to new alternatives by eliminating privileges and political barriers to entrepreneurial entry.

## CONCLUDING REMARKS

Despite appearances, the old and new development economics share the same main assumptions, objectives, and recommendations. More specifically, the core of old and new development literature includes: 1) the poverty trap theory, 2) the indispensability of top-down planning of the economic life of the poor to overcome the poverty trap, and 3) the objective conception of costs and benefits to support political interventionism in underdeveloped countries.

This paper argues that neoclassical reductionism causes the old and new development economics to fail to recognize the essence of poverty, corruption, and underdevelopment: political barriers to human beings' innate creative and entrepreneurial ability to solve human problems. It reveals how the Austrian theory of entrepreneurship provides the essential theoretical framework to overcome the new development economics's challenges. It is interesting to note that placing the entrepreneur at the heart of economic analysis allows development to be understood as the widening range of alternatives open to people. This objective serves as a pattern in the analysis of policies and institutional change. Thus, economic development objectives are best achieved by strengthening entrepreneurship through an institutional environment conducive to private property. Higher confiscation risks in the market process tend to inhibit the creative and coordinating feature of entrepreneurship. As long as there are political barriers, there will be poverty.

These arguments add more theoretical substance to the recently renewed concern in development economics circles about the impact of weak property rights on economic development. A theory built on dynamic flesh-and-blood entrepreneurship provides quantitative

tools with more powerful meaning for further research on economic history and public policy in underdeveloped economies.

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# ARE FREE MARKET FIDUCIARY MEDIA POSSIBLE? ON THE NATURE OF MONEY, BANKING, AND MONEY PRODUCTION IN THE FREE MARKET ORDER

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**ABSTRACT:** Recent debates in monetary theory have centered on so-called free banking and the role of banks in providing money in the form of fiduciary media in a pure market economy. This paper examines how and to what extent fiduciary media can emerge in a pure market economy. Based on the theory of value, it is argued that those economists are mistaken who claim that money substitutes must in all cases be interpreted as being money titles. Those economists too are mistaken, however, who claim a large role for the circulation of fiduciary media in a pure market economy. It is argued that holding fiduciary media in one's cash balance is an entrepreneurial error, as fiduciary media by their nature do not have the qualities people demand in holding money. Money is the comparatively most certain good and the present good

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par excellence, qualities that fiduciary media do not have. Holding fiduciary media instead of money is therefore an entrepreneurial error, and like all errors in the free market, it will tend to be eliminated in the process of entrepreneurial profit and loss, leading to the virtual disappearance of all fiduciary media from the market economy.

There has in recent decades been a fierce debate among economists and monetary theorists following in the footsteps of Ludwig von Mises between the so-called free banking school, which admits a large role for fractional reserve banking in the monetary system, versus what we here will call the full-reserve school, which denies any social benefit from fractional reserve banking and the issuance of fiduciary media. A lot of the controversy has centered on whether fiduciary media—money substitutes not covered by reserves—are fraudulent or not, and therefore whether they are at all legitimate in a pure free market based on complete respect for property rights and freedom of contract.

In this article the issue of fraud will be sidestepped and the focus will be on the question of the emergence of fiduciary media in a pure market economy, where all men and institutions, and specifically all banks, are subject to “the rule of common law and the commercial codes that oblige everybody to perform contracts in full faithfulness to the pledged word” (Mises 1953, 440). In particular, there would be no legal tender laws, no deposit insurance, and no central bank acting as lender of last resort. In such a free market order, a bank that failed to honor its contractual obligations would be treated no differently from any other company or person that failed to do this.

If fiduciary media would naturally emerge in such an order, this would *prima facie* be evidence that they are compatible with it. Mises, despite his hostility to inflation and credit expansion of all kinds, nevertheless suggested that the use of fiduciary media would be a part of a free banking system absent government interventions (Mises 1998, 440; *my italics*):

Free banking [i.e., banking subject to the commercial codes etc.] is the only method for the prevention of the dangers inherent in credit expansion. It would, it is true, *not hinder a slow credit expansion*, kept within very narrow limits, on the part of cautious banks which provide the public with all information required about their financial status.

The free bankers have gone further than this and argue that the use of fiduciary media is beneficial to the economy; while the full-reserve school, pursuing the economic analysis of Mises critical of inflation and credit expansion, have often assumed the position, following the example of Murray N. Rothbard, that fractional reserve banking is a harmful institution and must be outlawed wherever it appears in the free market, since money substitutes are interpreted as titles to money and fiduciary media are by this definition necessarily fraudulent (Rothbard 2009, 2008; Huerta de Soto 2009; Hoppe 2006a, 2006b; and Bagus, Howden, and Gabriel 2015).

It is this article's contention that the full-reserve theorists are mistaken when they insist that money substitutes must be interpreted as always being money titles, as this is at odds with the theory of value. A callable loan, for instance, could become a fiduciary medium if it is judged to be just as certain and serviceable as money proper by acting individuals. The free bankers too, however, are mistaken when they claim a large role for the circulation of fiduciary media in a pure market economy. It will be shown how it is fundamentally erroneous to consider a mere unbacked claim on a person or an institution as equivalent to money. The error consists in mistaking a future good, or a claim to a future good, for a present good, and in mistaking an unsafe asset for the comparatively safest good, viz., money. As all other errors in the free market, the error of mistaking fiduciary media for fully backed money certificates will tend to be corrected in the process of entrepreneurial profit and loss, leading to the virtual elimination of all fiduciary media from the market economy.

Thus, it will be argued that the full-reserve theorists are correct in asserting that fractional reserve banking has no role to play in the free market, since only by an error of judgment would anyone accept fiduciary media as money. Rather than encouraging the use of fiduciary media, the free market and free banking would correct such errors, leading to the virtual suppression of fiduciary media.

## A NOTE ON DEFINITIONS

In this paper we will take the approach to monetary theory developed by Ludwig von Mises for granted. As already noted,



Mises's influence on both free-banking and full reserve theorists is apparent, but his monetary theory is also the one that best elucidates the economic facts. Specifically, the classification of money in the narrow and the broader sense that Mises (1953, 50–59; cf. Hülsmann 2012, 33–34) pioneered in 1912 helps distinguish between fiduciary media, other money substitutes, and money in the narrow sense.

*Money*, taken simply, is a common medium of exchange, valued for its purchasing power. If two commodities are commonly used as money, they are valued separately according to the laws that govern the value of money; they are not somehow aggregated to form one total money supply.

*Money in the narrower sense*, or money properly speaking, is simply the commodity used as money. Under the gold standard, physical gold was money in the narrow sense. In the modern economy, physical cash is money in the narrow sense.<sup>1</sup>

*Money in the broader sense* is perfectly secure and instantly redeemable claims to money in the narrow sense. They can be used in commerce in exactly the same way as money is. "A claim to money may be transferred over and over again in an indefinite number of indirect exchanges without the person by whom it is payable ever being called upon to settle it." (Mises 1953, 50). The reason for this is that money is not consumed or "used up" in the way that other goods are. Simply by possessing money, the individual gains all the services that money can render, and hence fully secure and present claims to money will be deemed equivalent to money in the narrow sense. Money in the broader sense is more usually referred to as money substitutes and can be further subdivided into *money certificates* and *fiduciary media*.

*Money certificates* are claims to money that are fully backed by money in the narrow sense. E.g., a bank that held physical cash for the full amount of its outstanding demand deposits would only issue money certificates. This would clearly only be a change of the

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<sup>1</sup> Reserves with the central bank might also be considered money in the narrow sense, despite their character as claims on the central bank, because there is no doubt that the central bank, empowered with the ability to create physical cash at will, will always be able to honor these claims. I thank an anonymous reviewer for pointing out the special case of central bank reserves.

form, not the substance, of money, and issuing money certificates would have no influence on the money supply.

*Fiduciary media* are claims to money that are *not* fully backed by money. Commercial demand deposits are nowadays the prime example of this, but historically private banknotes too were fiduciary media. These claims are used as if they could be instantly redeemed, but in reality the issuing bank only ever keeps reserves on hand to be able to redeem a fraction of its issue of money substitutes. Fiduciary media can take the legal form of warehouse receipts, titles to money, and callable loans, that is, instantly redeemable claims on a person or bank such as demand deposits.

Since an issue of titles to money or warehouse receipts in excess of what is kept on reserve is clearly fraudulent, this case will not be considered. This article will deal exclusively with fiduciary media in the form of callable loans. Every time the terms *fiduciary media* and *claims to money* are used, they will refer only to callable loans.

It is important to note that the individual holding a money substitute cannot tell whether it is a money certificate or fiduciary medium. This distinction can only be made on a systemic level, as an outsider looking at the economy. To the individual person holding money, the money substitute must have the status of a money certificate, he must be certain of the issuer's ability to redeem it on demand, since, as Jeffrey Herbener has noted (2002, 83), "people only demand money-substitutes, not fiduciary media, and their demand exists only when they have confidence in full redemption."

The reader will excuse this brief outline of the basic definitions in the Misesian system. Most of it should be familiar to monetary theorists, but since the argument made here hinges on a clear understanding of the relation between money and fiduciary media, it was thought expedient to include this brief synopsis.

## THE FREE BANKING SCHOOL AND THE FULL RESERVE SCHOOL

There are two fundamental positions in the debate on the status of fiduciary media: the free banking school and the full reserve

school.<sup>2</sup> The free bankers believe that fiduciary media are a useful part of the money supply, and that no fraud is necessarily involved in issuing them. What is here termed the full reserve school is of the opposite view: fractional reserve banking is necessarily fraudulent, and not only is it not beneficial, but the use of fiduciary media is positively harmful, as it causes inflation, Cantillon effects, and the business cycle. While these controversies have a long history reaching back into the nineteenth century and the great British monetary debates (cf. Smith 1936), the current debate among modern Austrian and Austrian-inspired economists began in the wake of the contributions of Ludwig von Mises.

Murray N. Rothbard can be considered the founder of the full reserve school. He first clearly advanced the position that all fiduciary media are necessarily fraudulent, as he saw all money substitutes as titles to a sum of money (Rothbard 2008; 2005). He also categorically denied any economic advantage to society as a whole from the use of fiduciary media, and considered their use the basic cause of the business cycle as well as the problems of inflation (Rothbard 1963, 34–36). Other full reserve theorists follow this basic framework. Jesús Huerta de Soto has argued with a foundation in Roman law that money substitutes are a type of irregular deposit and therefore cannot be increased beyond the amount of money on reserve (Huerta de Soto 2009, 1–36, 119–24) and he too considers the elasticity introduced in the money supply by their use as central to understanding the problems of the business cycle. Hans-Hermann Hoppe (2006a, 2006b) clearly enunciates the Rothbardian position, for instance when he writes (2006b, 200):

Freedom of contract does not imply that every mutually advantageous contract should be permitted. Clearly, if A and B contractually agree to rob C, this would not be in accordance with the principle. Freedom of contract means instead that A and B should be allowed to make any contract whatsoever regarding their own properties, yet fractional-reserve banking involves the making of contracts regarding the property of third parties.

While Robert P. Murphy too belongs to the full reserve school, he has avoided engaging the question of legality in his recent

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<sup>2</sup> The full reserve school could also, following Salerno (2012b, 100), be called the neocurrency school.

contribution (Murphy 2019) and has focused exclusively on the issue of distortions introduced by fiduciary media and fractional reserve banking. Philipp Bagus, David Howden, Walter E. Block, and Amadeus Gabriel (Bagus and Howden 2010; Bagus, Howden, and Block 2013; and Bagus, Howden, and Gabriel 2015) have entered the ranks of the full reserve school as well, arguing for the impermissibility of fractional reserve banking for involving a confusion between deposits and loans.

Joseph T. Salerno (2010) and Jörg Guido Hülsmann (1996, 2003a) are also here placed in the full reserve camp, although their positions differ slightly. On the one hand, Salerno is fully in agreement with Rothbard when he says that “the 100 percent reserve requirement is not arbitrarily imposed from outside the market, but is dictated by the very nature of the bank’s function as a money warehouse” (Salerno 2010, 362); on the other, he allows that in a fully denationalized system, the shares of banks or money funds that invest part of their “reserves” could become the predominant means of payment in the economy (Salerno 2010, 364). Hülsmann for his part allows for the possibility of “callable loans plus a redemption promise” (IOU + RP) circulating on par with money proper (Hülsmann 2003a). Both clearly, however, see no social benefit from stimulating the issue of fiduciary media and both think that it is a historical truth that the vast majority of actually circulating fiduciary media were and are fraudulent, which is why they are decidedly in the ranks of the full reserve school.

The free banking school takes its modern beginning from the works of Lawrence White and George Selgin (White 1995, 1999; Selgin 1988; and Selgin and White 1987, 1996) and also includes economists such as Kevin Dowd (1993), Larry Sechrest (1993), and Steven Horwitz (2000). The point at issue here, the possibility of fiduciary media in a free market, is a key component of free banking theory, and has been defended at length by the free bankers. Their basic claim is that the issue of fiduciary media can take the legal form of a loan or a note with an option clause. Historically, White (2003) has claimed that banknotes indeed took the form of a loan, not a title of ownership to underlying money. This is a strong argument against the full-reserve school’s insistence on interpreting all money substitutes as ownership titles.

The free bankers argue that a free banking system is based on freedom of contract, and therefore interfering with and redefining contracts between banks and their customers, changing loans into warehouse receipts, would be incompatible with the system (Salin 1998) and an unwarranted imposition of the economist's own ethical judgments on other people (Rozeff 2010). Banks and their clients would be free to make whatever contracts they want, and fractional reserve banking would arise from their free agreement. Selgin (2012) and Evans and Horwitz (2012) have also answered the critiques raised by Bagus and Howden of the free banking position. Selgin in particular argues that the attempt to identify free banking theory with the real-bills doctrine is misguided and that full reserve theorists are wrong to claim that free bankers "confuse an increase in the demand for money with an increase in the overall extent of saving" (Selgin 2012, 139). Selgin here also makes the point, previously made by Hülsmann (1996, 34), that although aggregate demand for money is not the same as the public's willingness to save and invest, demand for money to hold is a kind of saving. Selgin disagrees with Hülsmann, however, as Selgin (2012, 139) argues that demand for inside money—bank liabilities—is also a supply of savings for investment, whereas Hülsmann sees it as a form of plain saving.

## MONEY AND FIDUCIARY MEDIA

Clearly, the point at issue is whether callable loans can come to circulate as fiduciary media spontaneously in the free market. Issuing titles or warehouse receipts to more money than the issuer has in his reserves would be fraudulent and therefore ruled out by definition in a pure free banking system, where all must honor their contracts and banks benefit from no special privileges (Mises 1998, 437–41), but it is by no means clear that issuing callable loans would be. Although borrowing money at call and investing it in longer-term loans and securities might be seen as an extreme case of maturity mismatching, this practice is not in itself illicit (Bagus and Howden 2009). On the contrary, there seems to be nothing in this practice at odds with respect for property rights and freedom of contract. It might be a very risky kind of financial practice, and the investor in callable loans would probably expect a return

commensurate with his assessment of the risk involved; however, that does not make it illegitimate. But does it mean that such loans can come to form part of the money supply?

In order to solve this question, we will adopt Hülsmann's (2003a) idea of a callable loan plus redemption promise as our starting point.<sup>3</sup> Hülsmann argues that the source of fractional reserve banking is to be found in a confusion between money titles and what he calls IOUs with a redemption promise. If this confusion did not exist, the IOUs could not circulate as part of the money supply, and the only money substitutes would be money titles. However, Hülsmann does not explain in depth why callable loans could not circulate as money substitutes absent this confusion. In order to do this, fiduciary media will have to be linked back to the laws of value governing money as well as all other economic goods.

Carl Menger first described the prerequisites for a thing to become an economic good (Menger 2007, 52ff.), a description that Mises later amended in order to emphasize the subjective nature of all value and, hence, of economic goods (Mises 1998, 120–21). All that is necessary for a thing to become an economic good is that the acting individual believe that control over it will help him attain his goals; it is his subjective judgment of the suitability of a thing for satisfying his wants that confers value on a good. Man's judgment may be erroneous, and he may find from experience that he was wrong in judging a certain thing capable of helping him attain his ends, thus realizing that it was only what Menger termed an imaginary good (Menger 2007, 53–54), but until the actor in question revises his judgment, the thing in question will continue to be a good for him, no matter what the objective facts of the case may be.

Incorrect judgments are usually corrected when the actor is confronted with reality, as can easily be seen in the case of consumer goods and producer goods. For consumer goods, this happens when the individual realizes that he does not attain the end he thought he would by using it; e.g., when a man discovers that sea water is not good drinking water. For producer goods, an erroneous judgment

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<sup>3</sup> White's (2003) criticism of Hülsmann, that banks don't promise to pay but contractually obligate themselves to pay is, for our purposes, immaterial. What matters is how these claims are appraised by the acting individuals who possess them, not their legal nature.

concerning a good will be corrected when the production process in which the good, mistakenly thought to be suitable in this production process, was employed fails or at the very least does not return a product sufficient to warrant the previous valuation of the good. In both cases, what was previously considered a good immediately loses its goods character once its employment in action proves that the actor's judgment was mistaken. Just as acting man profits from correct judgments, so he loses from incorrect ones. Entrepreneurial profit and loss is the basic mechanism that teaches man to conform his thinking and judgment to reality, as incorrect judgments and erroneous reasoning are punished and correct judgments rewarded.

The same holds true for money, although the consequences of incorrect judgments do not appear in exactly the same way. This is due to the special position of money among economic goods and the particular laws governing its value (Mises 1990). Whereas consumer goods are valued for the ends we expect to be able to achieve through their employment, and producer goods are valued for their contribution to the production of consumer goods, the medium of exchange is valued for its purchasing power. The value of money depends on the array of other goods that people expect to be able to trade each monetary unit for. It is the individual's subjective judgment of the utility of having this purchasing power available to him.

Let us assume a society employing only gold as money, with no other media of exchange in use. In this society the acting individual will only accept pieces of gold in exchange and only consider gold pieces as part of his cash balance. Mistakes in this matter are usually quickly corrected, since it is comparatively easy to recognize and verify whether a given substance is indeed gold, and since all other people too will also only accept gold as money. A man may, for instance, think that lead is just as serviceable as gold, since it is similar to it in some respects. However, he will quickly be disabused of this notion once he tries to pay with it, since nobody else shares his peculiar evaluation of lead.

Because money is only ever exchanged, appraisals of a commodity in its role as money are never confronted with reality in the same way as evaluations of producer and consumer goods are. Whether a given commodity (or claim) is considered part of the money



supply depends on how it is judged by people in the community. To continue with the example of a man who thinks lead and gold are interchangeable, if his trading partners disagree with this judgment, he will quickly realize that he was in error and that lead is not in fact gold. However, if other people accept lead as gold, lead becomes part of the money supply for as long as this mistaken judgment is not corrected. For as long as no one notices the difference between lead and gold, the money supply is increased by the addition of a quantity of lead. Widespread entrepreneurial error has led to a mistaken expansion of the money supply. Since money, titles, and claims to money are only ever exchanged and never consumed, the holders of money are never confronted with the same kind of test as owners of producer and consumer goods are. Erroneous judgments may therefore persist for longer here than in other areas of economic life. There are, however, powerful incentives at play to verify and certify the money commodity one accepts in exchange and holds in one's cash balance. Nobody has an interest in receiving false coins or bad checks in exchange for their goods, since that would mean a heavy loss of purchasing power once the mistake is discovered. The precious metals gold and silver were selected as money to a large extent because it is comparatively easy to distinguish them from other materials (Menger 2009; and Selgin and White 1987, 440–42).

Claims to money obey the same laws of value: if they are perfectly secure and safe, they will be valued as money. In the normal course of affairs, we would expect a loan to be valued according to its maturity and its safety. Both of these factors would impose a discount, as individuals would tend to judge a loan, even if instantly redeemable, as less valuable than actual possession of the amount of money in question. This is so, since, objectively, such loans can never be as secure as money proper or fully secured money certificates—there is always some uncertainty attached to them.<sup>4</sup> However, as just argued, the primary factor in establishing a thing as a good is the subjective judgment of individuals, and there is nothing to stop people from subjectively deeming callable loans on a par with money certificates. Therefore, they may gain the status of fiduciary media and constitute part of the money supply

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<sup>4</sup> The only exception would be the case where the debtor kept on hand full reserves at all times.



without any fraud or other violation of property rights having been committed. So long as claims to money are considered perfectly secure and instantly redeemable, they can perform all the functions of money in the narrow sense. Says Mises (1953, 267):

The fact that is peculiar to money alone is not that mature and secure claims to money are as highly valued in commerce as the sums of money to which they refer, but rather that such claims are complete substitutes for money, and, as such, are able to fulfil all the functions of money in those markets in which their essential characteristics of maturity and security are recognized.

There is thus no logical barrier to the acceptance of callable loans as money substitutes, since this depends on the judgment of the people receiving and holding money—on their recognizing “their essential characteristics of maturity and security,” whether those characteristics truly exist or not.

That said, this does not mean that such loans will constitute money substitutes for any length of time. First of all, the community as a whole has to accept the claim in question as a money substitute. One individual may have no doubts on the matter, as he trusts the issuing bank implicitly; but he cannot force other people to accept the claims at par value, and until they are widely considered money substitutes, they will continue to trade at a discount to money in the narrow sense. Although the clients of the same bank may treat their claims on it as equivalent to cash in their mutual exchanges, those outside the bank’s orbit may have no interest in holding claims on it as part of their cash balance.

Secondly, a claim’s character as a money substitute depends on there never being any doubt as to its safety and to the ability of the issuing institution to redeem it in full without delay. What the issuer requires to maintain his credit is a special kind of goodwill, without which the fiduciary media he has issued will immediately lose their character as money. Mises explained this very lucidly (1998, 442):

What makes a banknote a money-substitute is the special kind of good will of the issuing bank. The slightest doubt concerning the bank’s ability or willingness to redeem every banknote without any delay at any time and with no expense to the bearer impairs this special good will and removes the banknotes’ character as a money-substitute. We may assume

that everybody not only is prepared to get such questionable banknotes as a loan but also prefers to receive them as payment instead of waiting longer. But if any doubts exist concerning their prime character, people will hurry to get rid of them as soon as possible. They will keep in their cash holdings money and such money-substitutes as they consider perfectly safe and will dispose of the suspect banknotes. These banknotes will be traded at a discount, and this fact will carry them back to the issuing bank which alone is bound to redeem them at their full face value.

Only if the public thinks the bank's money substitutes are fully secure will they accept them at par with money, and only thus can they gain any circulation at all. Yet since fiduciary media in the form of loans are inherently less certain than money or true money titles, accepting them on par with money constitutes an entrepreneurial error no less than in the other cases of mistaken identity detailed above. The status of any claim as a fiduciary medium is therefore inherently perilous on the free market. As soon as the slightest doubt arises as to the issuer's ability to redeem them in full and without delay—as soon as he loses the goodwill of the public—all his circulating notes will lose the character of money substitutes, trade at a discount to money, and return to the issuer. This process will continue until the issue of fiduciary media has been eliminated and the claims to money issued are again deemed to be fully backed.

## UNCERTAINTY AND MONEY

In order to understand more fully the error involved in holding fiduciary media, it must be asked exactly why people choose to hold some of their wealth in the form of money. Here the role of uncertainty is crucial. Uncertainty is here used in the sense of Mises (1998, 105–18) and Knight (1921) and distinguished from calculable risk. It is concerned with what Mises (1998, 110, 111) called case probability:

Case probability means: We know, with regard to a particular event, some of the factors which determine its outcome; but there are other determining factors about which we know nothing ... Case probability is a particular feature of our dealing with problems of human action. Here any reference to frequency is inappropriate, as our statements always deal with unique events which as such—i.e., with regard to the problem in question—are not members of any class.

When dealing with uncertainty, acting man does not have recourse to the methods of actuarial science and numerical evaluation of risks. Rather, like the historian, he must use his specific understanding of what is unique and relevant in each event or class of event he is considering (Mises 1998, 58; cf. 2007):

Understanding is not a privilege of the historians. It is everybody's business. In observing the conditions of his environment everybody is a historian. Everybody uses understanding in dealing with the uncertainty of future events to which he must adjust his own actions. The distinctive reasoning of the speculator is an understanding of the relevance of the various factors determining future events.... Acting man looks, as it were, with the eyes of a historian into the future.

Since there is always some uncertainty about the future, acting man cannot plan his actions completely and allocate all his income to purchases of consumer and producer goods. By keeping some cash on hand, acting man is better able to provide for unforeseen contingencies in the future. His degree of felt uncertainty is therefore at the root of his demand for money.

Free bankers seem to downplay the importance of uncertainty in explaining the demand for money. White (1999, 15–16, 54ff.) does not mention it in his discussion of par acceptance of bank money, and Selgin (1993, 354, 362) impatiently dismisses the idea that uncertainty could have any role in evaluating money and money substitutes, claiming that the historical record contradicts that idea. When Selgin discusses the role of trust in driving demand for money, he is exclusively talking about demand for banknotes relative to demand deposits, not demand for money proper versus money substitutes (Selgin 1988, 109). This is in clear contradiction to Mises's basic insight that we would only hold money under conditions of uncertainty (Mises 1998, 414, 415):

Where there is no uncertainty concerning the future, there is no need for any cash holding. As money must necessarily be kept by people in their cash holdings, there cannot be any money.... On the market there is always change and movement. Only because there are fluctuations is there money. Money is an element of change not because it "circulates," but because it is kept in cash holdings. Only because people expect changes about the kind and extent of which they have no certain knowledge whatsoever, do they keep money.

The fundamental reason for demanding and holding any money at all is that money is the most certain good. By holding money we avoid all the uncertainties affecting particular consumption goods and investment opportunities. Consumer goods are either immediately consumed or, in the case of durable consumer goods, can only be used for a few specific purposes. Durable goods are not as readily exchangeable as money and are furthermore subject to specific price risks concerning their specific market. Investment in producer goods has the same disadvantages, while investment in financial assets—shares, bonds, etc.—might be more liquid. Yet both of these are still subject to greater uncertainty and greater risk of loss than simply holding money. When people add to their cash balances instead of buying consumer or producer goods, they are thus essentially investing in reducing felt uncertainty, since money is the comparatively most certain good—its future purchasing power is less uncertain than the prices of consumer and producer goods.

This can be further elucidated by considering the quality of money (Bagus 2009, 2015): Money of high quality is such as can be expected to maintain a stable or increasing purchasing power in the future, while money of lower quality is that which is expected to lose purchasing power. On a gold standard, for instance, money production will be constrained by the same factors that constrain the production of other goods, namely the law of costs (H. F. Sennholz 1975, 47–48). Additional money will only be produced if there is a sufficient return, that is, a sufficient spread between the quantity produced (gold ounces) and expenditures (in gold ounces) (Hülsmann 2003b).

It is therefore possible to forecast with some accuracy the future evolution of gold's purchasing power, and it is reasonable to expect it to be stable or even increase slightly, since gold production generally only increases in response to increases in the purchasing power of the monetary unit. Fiat paper money, on the other hand, is completely subject to the policies of the issuing institution, which may have to serve political interests at odds with sound monetary policy, and which may be guided according to erroneous economic principles. Even a relatively sound central bank is always at risk of being taken over by more inflationary leaders, which introduces an element of uncertainty that simply does not exist in the case of commodity money. Similarly, in the case of claims on banks there

is an added element of uncertainty, since the holder of claims on the banks has to trust that the banks will always want to and be able to redeem the claims. Although this may be true under normal circumstances, it is precisely under unusual, unforeseen circumstances, when the holders of money might need their claims, that the banks are likely to default on their promises.

This is not to say that money is a certain good in some absolute sense. This would be patently false, since the purchasing power of money is always changing as conditions in the various goods markets change. Rather holding money is the comparatively most certain way of holding one's wealth. Holding any money at all, then, is fundamentally a hedge against uncertainty (Rothbard 2009, 264–65), and adding to one's cash balance is therefore best understood as an investment in reducing one's felt uncertainty (Hoppe 2012; cf. Hicks 1935, 7–9), as money provides the service of immediately available purchasing power for whatever unforeseen purchases one will make in the immediate future (Hutt 1956).

Money, as the comparatively most certain good, can be seen as at one end of the spectrum of investment possibilities when considering their risk or uncertainty. Consequently, a man who, wanting to add to his cash balance, increases his holding of fiduciary media, is fundamentally in error: he wants to reduce the uncertainty of his investments by increasing his cash balance, but fiduciary media are precisely *not* the most certain investment option; they are claims on other people, whether individuals or institutions such as banks. As such, they are always liable to the risk of default and nonpayment. Wanting to increase his certainty by increasing his holding of fiduciary media, the individual in fact renders himself liable to lose all if the issuing institution suspends redemption.

## THE CONFUSION OF DEMAND FOR MONEY WITH SUPPLY OF CREDIT

Money, in addition to being the comparatively most certain good, is also a present good. In fact, according to Rothbard it is the present good *par excellence* (2009, 375). People demand money in order to be able to spend it immediately on other goods. However, one of the main claims of the free bankers is that issues of fiduciary

media are an efficient way to regulate the money supply in order to compensate for changes in the demand for money and thereby avoid monetary disequilibrium (Yeager 1997, 93–94). Not only are they more flexible than production of commodity money, but an increase of fiduciary media is an increase in the supply of loanable funds, and this means that there is more money available for investment when banks extend their issues of fiduciary media to meet an increased demand for money.

In the free banking system, an increased demand to hold money is met by an increased issue of fiduciary media in order to maintain monetary equilibrium. The substitution of fiduciary media for commodity money means that

every increase in real money demand becomes a source of loanable funds to be invested by banks, whereas under a pure commodity-money regime an increase in money demand either leads to further investments in the production of commodity money, or, if the supply of commodity money is inelastic, to a permanent, general reduction in prices.... Thus, fiduciary issues made in response to demands for increased money balances allow Ruritania to enjoy greater capitalistic production than it could under a pure commodity-money regime. (Selgin 1988, 22)

This position is also common among economists outside the free banking school (e.g., Sanches 2016; and Mishkin 2019, chap. 9) and can seemingly be traced back to John Stuart Mill, who argued that banks of deposit make the “idle” capital of depositors to be employed through lending out the majority of their deposits (Mill 1909, bk. 3, chap. 11, § 2).

There are two problems with this view: first, the assumption that the supply of commodity money could not change fast enough to accommodate changes in the demand for money, or that, failing that, price changes could not adjust the stock of money to the new demand; and second, the idea that demand for money in the form of money substitutes is the same as supplying credit to banks is a fundamental error. The demand for money, no matter what form that demand may take, is very different from demanding financial assets. The demand for financial assets is always the supply of a present good in exchange for future goods, whereas the demand for money is always demand for a present good. Money and financial assets are two different things, and they serve different functions in the economy.

To briefly address the first problem, there is no reason to consider the supply of money fixed, but more fundamentally, there is no reason to assume that an increased demand for money has to be compensated in any way by an increase in supply. An increase in the demand for money necessarily implies a decreased demand schedule for nonmonetary goods and an increased supply schedule for nonmonetary goods and services (the inverse of an increased exchange demand for money).<sup>5</sup> An increase in the demand for money would therefore naturally lead to lower prices as the change in the market data works itself out in a step-by-step process (cf. Hayek [1937] 1989, 19–25). In the short run there may be instability and a prolonged adjustment period caused by “sticky” prices, as entrepreneurs may at first be unwilling to adjust their prices downward. However, the process of entrepreneurial profit and loss will quickly overcome this as those entrepreneurs who make the necessary price adjustments profit at the expense of those who are reluctant to do so: the longer an entrepreneur refuses to sell his inventory at the market price, the greater his loss will be. Sticky prices are at most a problem of short-term adjustment.

In any event, should the demand for money increase, the purchasing power of money will increase through the process just described, and under a gold or other commodity standard this will stimulate the production of money (White 1999, chap. 1; and Herbener 2002). This may be a slower response to changes in demand for money than issuing fiduciary media, but that does not mean that the money supply could not adjust in the absence of fractional reserve banking. An increase in the demand for money might be caused by economic expansion, as savings, investment, and population growth increase productivity. As more goods are offered on the market (an increase in the exchange demand for money), money prices of goods fall and the purchasing power of the monetary unit increases. As the purchasing power of the monetary unit increases, entrepreneurs can afford to invest more in the production of commodity money, e.g., by mining gold where it was previously too expensive to do so or by prospecting for new gold mines. It might even be said that a pure commodity standard

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<sup>5</sup> On exchange demand and reservation demand for money, see Rothbard (2009, 137–42, 756–62) and Salerno (2015).

would mirror a “productivity norm” (Selgin 1997) in regulating the supply of money over the long term: economic expansion would stimulate money production, while economic contraction would shift the monetary commodity into nonmonetary employment. The way it has been presented here, however, this process is nothing but an implication of the traditional currency principle as articulated by Mises and his epigones. Monetary equilibrium thus does not depend on the issue of fiduciary media.

The second and more serious problem with free banking theory is the confusion of demand for money with a supply of savings that can be lent out. In the free banking system, the issuance of new money in response to an increase in demand for money takes the form of loans. As Selgin (1988, 22) puts it, “every increase in real money demand becomes a source of loanable funds to be invested by banks.” Increased demand for money is taken for an increase in the supply of credit. It is here immaterial that the new loans are of very short, i.e., instant, maturity (Hülsmann 1996, 20; and Machlup 1940); the new loans serve as a source of credit no matter their duration. The argument in favor of free banking is that holding money is a form of saving, and that it is therefore legitimate to transfer these savings from savers to investors by means of fiduciary media. It may be granted that increasing one’s cash balance can in certain circumstances be considered increasing savings, but it does not follow from this that more credit should be extended.

Holding any kind of asset instead of using it amounts to savings investment (Hülsmann 1996, 34), as it necessarily means that resources are allocated to an expected future need instead of being consumed in the present. This is also true of money: if people reduce their consumption in order to increase their cash holdings, this is a form of saving. This does not, however, mean that additions to people’s cash balance are available to be invested; rather, they constitute a peculiar form of investment. Following Bagus and Howden (2010, 41), we may say that there is a continuum of investment projects of different duration. Investment in cash balances is peculiar in that money is the present good par excellence (Rothbard 2009, 375), and increasing one’s cash balance therefore does not liberate resources for more roundabout projects—quite to the contrary, as it is possible that increased demand for money reflects decreased demand for investments of longer duration. We



may call it monetary or cash balance saving to distinguish it from both plain saving and capitalist saving.<sup>6</sup>

It does not matter for our point whether the increased demand for money takes the form of increased demand for money substitutes. Money substitutes are just as much a present good as money proper. According to Mises (1953, 266),

The peculiar attitude of individuals towards transactions involving circulation credit is explained by the circumstance that the claims in which it is expressed can be used in every connexion instead of money. He who requires money, in order to lend it, or to buy something, or to liquidate debts, or to pay taxes, is not first obliged to convert the claims to money (notes or bank balances) into money; he can also use the claims themselves directly as a means of payment. For everybody they therefore are really money-substitutes; they perform the monetary function in the same way as money; they are "ready money" to him, i.e., present, not future, money.

Although it is true that legally and formally fiduciary media take the form of credit claims, the "lender," the holder of the claim, has not surrendered control of any present good. He has engaged in what Mises calls a claim transaction, not a credit transaction; he has exchanged a present good (money) for a claim to a present good (a claim to money). Only because he considers the claim completely certain and instantly redeemable is it equivalent to him to money in the narrow sense. If the issuing bank does not keep full reserves, therefore, the holder of the bank's notes makes an entrepreneurial error: he thinks he owns a certain, present good, when in fact he only has an uncertain claim to a partly present, partly future good. If such error becomes widespread and many people are willing to hold fiduciary claims in their cash balance, banks can engage in credit expansion leading to inflation and initiating a business cycle.<sup>7</sup> Since the business cycle must result in a bust, the banks' shaky position will inevitably become apparent. The more they expand their fiduciary issues, the less credible their promise to pay in full on demand becomes. The result is bank runs when the banks' special goodwill evaporates and all the holders of fiduciary media try to exchange

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<sup>6</sup> Cf. Mises (1998, 527–28) for the distinction between plain and capitalist saving.

<sup>7</sup> Cf. Hüslmann (1998) on error as the root of economic cycles.

them for money in the narrow sense. The error that initiated the business cycle—mistaking a fiduciary claim to a future good for a present claim to money—is then realized, claims on the banks lose their status as money substitutes and the resulting deflation helps purge the economy of the malinvestments of the boom (Rothbard 2009, 1008–10; cf. Mises 1998, 565; and Salerno 2012a).

It follows from this insight that the doctrine that increased demand for money liberates resources for investment is fundamentally wrong. Contra Selgin and Mill, the demand for fiduciary media in no way constitutes a supply of loanable funds. What the acting individual wants in holding fiduciary media is control over present goods (Rothbard 2009, 800ff.), not future goods, and he therefore does not invest in a longer production structure when he increases his cash balance.<sup>8</sup> Demand for money is not the same as supply of loans, but by mistaking fiduciary media for money certificates, the individual unwittingly extends credit; he means to increase his holding of money, a present good, but he commits an error and in reality acquires a claim to a future good. As with all errors of judgment, it is liable to be corrected by the mechanism of profit and loss. Specifically, the individual may find one day that he cannot redeem his claims at par, or someone else has realized this already, and as the issuing institution has lost the good will of the market, the claims now circulate at a discount and are no longer part of the money supply. This is the mechanism of “brand extinction” identified by Salerno (2012b, 112–15; cf. Mises 1998, 431ff.) as the primary limitation on the issue of fiduciary media: long before a bank’s reserves are depleted through the principle of adverse clearing, holders of its notes and deposits will have lost confidence in it and no longer value its liabilities as part of their cash holding. These liabilities would therefore trade at a discount, and return to the issuing bank in the hope of an arbitrage profit. This would make a bank run inevitable, but only after the claims in question have already lost their status as money substitutes (Salerno 2012b, 113).

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<sup>8</sup> This is not meant to imply that increasing one’s cash balance necessarily shortens the production structure. If the cash balance is increased by reducing consumption, it may be that the production structure is actually lengthened. See on this point Mises (1998, 518–20).

It is also possible for entrepreneurial error to take another form, as the acting individual may recognize that fiduciary media are not in reality secure claims to cash but may judge holding them a safe investment anyway, as other people are willing to accept them as money. Since he recognizes their defects, he may very well think himself able to profit from using fiduciary media, e.g., from interest payments on demand deposits or through access to easy credit, while still being able to realize his assets before they lose their money character thinking that he will always be able to get rid of them at par—or at least do so before the rest of the populace panics and a bank run develops. Fiduciary media and fractional reserve banking are fundamentally unstable institutions however, and always liable to collapse. Although individual entrepreneurs may benefit from fiduciary issues, just as individual investment projects may be completed in the boom phase of the business cycle, on a systemic level there is no escape from the result of error: depression and a purge of fiduciary media.

In the free market, where no special privileges protect banks and no legal tender laws can compel the public to accept claims on banks as money, the dangers inherent in issuing fiduciary media would be apparent to bankers as well as to the general public. Again, according to Mises (2006, 125): “[A]s soon as bankers recognized the dangers of expanding circulation credit, they would have done their utmost, in their own interests, to avoid the crisis. They would then have taken the only course leading to this goal: extreme restraint in the issue of fiduciary media.”

The nature of fiduciary media is simply incompatible with the aim people have in holding money: having access to a presently available, safe medium of exchange.<sup>9</sup>

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<sup>9</sup> That is not to say that people could not demand fiduciary media for other reasons, but then it would by definition not be demand for money. E.g., if a person holds a callable loan to earn interest, and if he does not consider it part of his cash balance, then this demand would not be demand for money but demand for a claim to a future good. In this case, the holder really is supplying savings for investment. The lines between demand for money and demand for investments are often blurred in modern financial practice, but conceptually the two kinds of demand are quite distinct.

## A CRITIQUE OF THE THEORY OF “MONEYNESS”

Part of the disagreement over the nature of money may stem from a basic error in the free bankers’ conception of what money is. Their conception of money can be termed the theory of “moneyness.” The origin of this theory seems to be F. A. Hayek’s remark that he would rather conceive of money as an adjective rather than a noun (Hayek 1990, 56; *italics in original*):

I have always found it useful to explain to students that it has been rather a misfortune that we describe money by a noun, and that it would be more helpful for the explanation of monetary phenomena if “money” were an adjective describing a property which different things could possess to varying *degrees*.

Hayek attributes the term to Fritz Machlup, although it is not clear that he meant by it exactly what Hayek and the free bankers do (Machlup 1970, 220, 225). Be that as it may, we cannot subscribe to the idea that “moneyness” is really a characteristic possessed by all goods to different degrees (Horwitz 1990, 462–63; cf. White 1989, 203–17). By this theory, “moneyness” is simply a characteristic of a good or a claim that may explain its value along with other characteristics. Thus, money in the sense of cash is high in “moneyness”—it may very easily be exchanged for other goods—but does not have an interest yield, while a bond may not be as high in “moneyness” but to compensate for this offers an interest yield. In this way, all financial assets may be placed on a “moneyness” continuum from cash to bonds.

There are several problems with this theory. It is not clear how “moneyness” can be conceived of if it is not already known what money is. In order to appraise a claim as worth one hundred dollars, for instance, it must already be known what a dollar is. When a good or claim’s moneyness is evaluated, what is really occurring is what Mises calls appraisal (1998, 328–30): evaluating what the good will sell for on the market. This estimate can either be in terms of money or in terms of other goods, but it is manifest that when discussing moneyness, the theorists in question discuss the value of claims *in terms of money*. They therefore assume the existence of money and simply assume that other claims share a degree of moneyness.

The core problem is a confusion of Mises's distinction between money and money substitutes, on the one hand, and the concept of secondary media of exchange on the other (Mises 1998, 459–63). What is described as “moneyness” is really best understood in terms of Menger and Mises's concept of marketability: the ease and speed with which a good can be sold without discounting its expected market price. Money proper is the marketable good par excellence, while some other goods and claims high in marketability may be more easily marketable than other goods, but their degree of marketability is still much less than that of money. As a consequence, such goods and claims' price is expressed in and fluctuates in terms of money. This is why Mises says that these goods and claims have a high degree of *secondary* marketability—because their marketability is secondary to that of money, the existence of which is the condition sine qua non of the advanced exchange economy, where highly liquid claims can emerge.

The distinction between secondary media of exchange and money substitutes is crucial (Mises 1998, 459–63). The latter are complete substitutes for money in the narrow sense, as they can perform all the functions of money and each unit is evaluated on a par with the monetary unit—banknotes and transferable demand deposits are the best examples of this. The precise legal nature of such claims is not essential, however: the crucial consideration is that they are deemed to be always redeemable in money at par. Secondary media of exchange, on the other hand, are not money substitutes, as it is not certain that they can be transformed into money at par or at a set ratio. They are, however, always highly sought after and can therefore easily be sold at their expected market value. In other words, they are very liquid—they have a high degree of secondary marketability, in Mises's terms—and may therefore supplement market actors' cash holdings, as they help economize on the holding of money in the narrow sense. In the “moneyness” view, on the contrary, the distinction between secondary media of exchange and money substitutes is obliterated. All the goods and claims used in exchange are simply placed on a continuum, with cash at one end and very liquid claims such as government bonds at the other end, with no regard paid to the essential difference in the nature of these economic goods.

By holding secondary media of exchange, economic actors economize on the need to hold cash. Assuming that the secondary

media are financial assets of some kind, the cost saving can be expressed as the interest payment received on the financial assets that substitute for money. Callable loans, bills of exchange, and other financial instruments and claims have been employed in this role, and this extra demand for these claims will tend to raise their price, lower their yield, and stimulate their issue by expanding the market for them. This, however, does not change their goods character into that of money substitutes, and it is unlikely that they will jump this divide. After all, the issuers of secondary media are in precisely the same difficulty as we detailed above in the case of callable loans: they will have to invest the borrowed funds in order to make a return and pay interest on the outstanding claims, leaving them unable to at all times “redeem” the claims at par.<sup>10</sup> The fact that these secondary media are heterogeneous, different products, and thus require a separate evaluation in each case, is also significant, as it imposes a cost on their use as secondary media of exchange. There is no such cost attached to holding money and money substitutes.<sup>11</sup>

## CONCLUSION

This article has examined the question of fiduciary media and their possible existence on the purely free market. Although this paper disagrees with Rothbard and the full reserve school when they claim that all money substitutes have to be interpreted as money titles, the conclusion reached agrees with their perspective. Fiduciary media will have virtually no role to play in a free market. Elaborating the suggestion first made by Hülsmann (2003a), it has been argued that fiduciary media can only come into existence due to entrepreneurial error: specifically, due to individuals erroneously judging an uncertain claim to future money as a certain claim to present money.

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<sup>10</sup> “Redemption” is here just a metaphor, as there is no legal obligation to redeem in the case of secondary media.

<sup>11</sup> Perhaps the main secondary medium used today is US Treasuries. The fact that these do not trade at par and are not considered part of the money supply indicates that even in the absence of the problem of heterogeneity, secondary media cannot jump the gap and become money substitutes.

Like all errors on the market, this erroneous judgment and its consequences will tend to be temporary, ephemeral, and self-correcting as the reality of the situation asserts itself. Since there are no institutions on the free market that will systematically spread the errors leading to the rise of fiduciary media, these will tend to only circulate locally and for a short time, as people unfamiliar with the claims in question will not accept them in lieu of money. In the same way, the societal consequences of fractional reserve banking—malinvestment, inflation, and so on—will also be very limited in scope.

The confusion of loans for money is the root cause of dysfunction in the contemporary monetary system. This has been known for a long time – as the great English banker Thomson Hankey (1873, 29) wrote:

Ready money is a most valuable thing, and it cannot from its very essence bear interest; every one is therefore constantly endeavouring to make it profitable and at the same time to retain its use as ready money, which is simply impossible. Turn it into whatever shape you please, it can never be made into more real capital than is due to its own intrinsic value, and it is the constant attempt to perform this miracle which leads to all sorts of confusion with respect to credit.

Mises (1953, 409) wrote that “the development of the fiduciary medium must necessarily lead to its breakdown.” We hope here to have shown that on a free market, with no privileged banking system, this breakdown will come quickly, before the fiduciary medium has gained widespread currency.

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# AN ANATOMY OF FAILURE: CHINA'S WIND POWER DEVELOPMENT

JONAS GRAFSTRÖM\*

JEL CLASSIFICATION: P21, O32, Q55, Q58, B53

**ABSTRACT:** China is currently the world's largest installer of wind power. However, with twice the installed wind capacity compared to the United States in 2015, the Chinese produce less power. The question is: Why is this the case? This article shows that Chinese grid connectivity is low, Chinese firms have few international patents, and that export is low even though production capacity far exceeds domestic production needs. Using the tools of Austrian economics, China's wind power development from 1980 to 2016 is documented and analyzed from three angles: (a) planning and knowledge problems, (b) unproductive entrepreneurship, and (c) bureaucracy and government policy. From a theoretical standpoint, both a planning problem and an entrepreneurial problem are evident where governmental policies create misallocation of resources and a hampering of technological development.

## INTRODUCTION

The headline of a 1953 article by Peter Wiles in *Foreign Affairs* had stated that "The Soviet Economy Outpaces the West." Based on the official Soviet statistics, the GDP growth numbers suggested

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that the Soviet Union could plausibly outgrow the West, but as later revealed, the numbers did not match reality (Levy and Peart 2011). What Peter Wiles and numerous scholars at the time did not see were the cracks in the Soviet economic system (Boettke 2001, 2002a; Huerta de Soto [1992] 2010). The Soviet Union is gone; the slightly younger, seventy-year-old People's Republic of China is still (to a large extent<sup>1</sup>) a planned economy that by some accounts appears to be on the verge of outpacing the West. However, cracks can be seen in the Chinese economy, as illustrated by its wind power industry, which is analyzed in this paper.<sup>2</sup>

There are many problems in the Chinese wind power expansion effort (see e.g., Zeng et al. 2015; Karltorp, Guo, and Sandén 2017). The installed wind capacity in China has long been twice that of the United States (IRENA 2018). However, despite having twice the installed capacity, China produces less power than the US. Grid connectivity is low, Chinese firms have few international patents, and exports are low even though production capacity far exceeds domestic needs (Cass 2009; Zhe 2011; Xingang et al. 2012; Sun et al. 2015; Zeng et al. 2015; Karltorp, Guo, and Sandén 2017; Lam, Branstetter, and Azevedo 2017; Zhang et al. 2017).

Despite robust government support, wind power in China is obstructed by various barriers like quality deficiencies, low operational efficiency, and two-year permit delays from the central government for grid construction (Junfeng et al., 2002; Han et al. 2009; Xingang et al. 2012; Luo et al. 2016; Zhao, Chang, and Chen 2016; Liao 2016; Sahu 2017). These issues have hampered China's wind power energy output and exports (Zhang et al. 2015; Sun et al. 2015).

Boettke (2002a) found that the failure to predict the fall of the Soviet Union was due to three reasons: (1) a disregard among economists

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<sup>1</sup> As seen in Boettke's (2001) *Calculation and Coordination*, the degree of planning in the planned economy of the Soviet Union varied over the decades, and this is also the case for China, which tolerates different degrees of capitalism in different parts of its economic system. It has also been argued that the Soviet economy was never a planned economy but rather a form of military-state capitalist system (Polanyi 1957). A similar argument can be made about the Chinese economy. In the Chinese case presented in this paper, it is not a case of pure socialism but rather there are plans, government orders, and an environment in which traditional entrepreneurs find it difficult to thrive.

<sup>2</sup> E.g., the problematic housing market and a fast-increasing debt (see Liu 2018; Curran 2018).

for evidence other than measurable statistics, (2) the elegance of the formal structure of central planning and the balancing of inputs and outputs, and (3) the preoccupation with aggregate measures of economic growth as opposed to detailed microeconomic analysis of the industrial structure. All, but especially the third reason, are an appropriate approach when investigating Chinese economic shortcomings.

Taking inspiration from Boettke's insight above, the purpose of this article is to synthesize the literature that has documented problems in Chinese wind power development and theoretically explain these problems. Identifying problems should be useful for policymakers in other countries that are considering a transition to large-scale renewable energy utilization. In a broader sense, the paper adds to the discussion of the sustainability of Chinese economic expansion in the long term.

A reader who is familiar with the Chinese wind energy sector and has read influential works, such as Joanna Lewis's 2012 book *Green Innovation in China: China's Wind Power Industry and the Global Transition to a Low-Carbon Economy*, would probably perceive that on an aggregate level everything is all right. In Lewis's book, as well as in most academic literature, the economic problems of Chinese energy are alluded to but never assembled and analyzed. In this article a less optimistic view of the state of China's wind power development is presented.

It should be noted that the United States and other countries also have different government interventions in the wind power market and that negative effects have been documented. For example, US policies in the 1980s caused problems similar to the ones observed in China (Keller and Negoita 2013). Later the United States policies focused on promoting research and development (R&D) (Wiser and Millstein 2020). The German *Energiewende* (energy transition) and the Spanish solar bubble would be good cases for another paper, but this paper will focus on China since it is the largest producer at the moment and will probably be for some time to come.

The findings will be presented and followed by an analysis based on theoretical works by scholars of the Austrian school of economics which is utilized in two ways: firstly, in terms of its theoretical contributions regarding the role of entrepreneurship and its

utilization of price signals,<sup>3</sup> and, secondly, in terms of the planning debate, the use of knowledge in society, and the role of the market. Using Austrian economic theory as a starting point, it is found that both a planning problem and an entrepreneurial problem exist where governmental policies create misallocation of resources and a hampering of technological development.

The article is organized as follows: First, the Austrian theoretical background for the analysis of the wind power sector will be provided. Then, the historical context for China's wind power development will be described. Finally, the theoretical framework will be utilized to analyze problems in Chinese wind power development.

## THE LIMITATIONS OF PLANNING AND THE ENTREPRENEURIAL PROCESS

A cartoon in the Soviet satirical journal *Krokodil* that was published in 1952 showcases the failure of the Soviet economic system with a worker and a bureaucrat depicted under an enormous two thousand-kilo nail. The worker asked who needed such a big nail and the bureaucrat answered: “the month's plan fulfilled” (Nove 1986, 94). The Soviet Union and its planned economy ended at the age of seventy-four years in 1991, which was a surprise for some, but not to a student of Hayek's (1937, 1945), Mises's (1920, 1949, n.d.) and Weber's (1922) contributions to the great planning debate in the 1920s through to the 1940s (see also Lavoie 1985a and 1985b).

Let us contrast the outcome of a market with that of a centrally planned arrangement. In a market, profit is a powerful signal. Profit informs producers that consumers value that use of those scarce resources as compared to other alternatives (in the case of profits) or that they do not value that use (in the case of losses). Before a

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<sup>3</sup> A reviewer brought up merit order (describes the lowering of power prices at the electricity exchange due to an increased supply of renewable energies) effects and cannibalizing effects (loss in sales caused by a company's introduction of a new product) that might affect firms' behavior when it comes to adding new capacity. In a stable demand market this is an issue; however, the Chinese electricity consumption increased several hundred percent during the studied period and the renewable energy portion was rather small compared to the absolute growth in other energy sources.



corrective process moves toward even an approximate equilibrium, changes in the market (individual preferences, the endowments of resources, and available technology) will distort any plan and make it irrelevant (Mises [1929] 2011; Kirzner 1982, 1999).

Hayek ([1968] 2002) remarked that an equilibrium was too much to hope for, since an equilibrium would presume that all facts are known and that the process of competition has thus ended, rather than that there could be temporary order. Several studies highlight how state planning, with the best of intentions, often fails (see Hayek [1935] 1956; and for a modern application to development and aid, see Boettke 1994; Leeson 2008; Coyne and Ryan 2009; Williamson 2010; Coyne 2013). The case against regulation and interventions in the market (even by well-meaning planners), is based on the insight that the market will never be close to an equilibrium state since there is an ongoing corrective process.

Even though the functioning of the bureaucracy has been more fleshed out by public choice scholars, the Austrians have made contributions to our understanding of how a state bureaucracy works. For example, Niskanen (1994) pointed to the fact that Mises (1944) is often credited as one of the first scholars to approach the problems of bureaucracy from an economic point of view.

Niskanen's and Mises's views of bureaucracy differ in significant ways. In Niskanen's view the bureaucracy is the result of the inability of the market to supply certain goods or services. A state bureaucracy compensates for the deficiencies of the market. According to Mises, bureaucracy appears because of government hindrances of the market process, but bureaucracy also makes economic calculation impossible (Carnis 2009). The Misesian view is more productive for the understanding of the Chinese case where the bureaucratic nature of the Chinese economy is a consequence of human action and design.

In *Bureaucracy* Mises contrasts different forms of economic organization and shows what happens when there is no profit motive. Mises argues that "[b]ureaucratic management is the method applied in the conduct of administrative affairs the result of which has no cash value on the market.... Bureaucratic management is management of affairs which cannot be checked by economic calculation" (1944, 47–48). If you do not have profits and losses

as guide you must follow rigid rule systems. These rule systems will not allow for flexibility and will rather force the bureaucrat to compliance, whether the result make sense or not.

Constant feedback generates socially desirable outcomes without a central coordinator. Knowledge of the optimal use of scarce resources is not given *ex ante* but instead must be discovered through the process of individual choice (Mises 1920, 1949, n.d.; Hayek 1945). Hayek ([1968] 2002) and Buchanan (1982) also emphasized that market “data” emerge after people interact with each other. Before the participants enter the process, they do not know what their choices will be. Hence, some economics knowledge cannot be gathered by regulators and planers before the interactions take place.

A prerequisite for successful entrepreneurial action is guidance by relative price signals and the attraction of pure profit (which requires calculation through profit and loss accounting). The price system economizes information which economic decision-makers must process. A market system produces social intelligence that no one planner or group of planners could approximate (Boettke 2002b). In the setting of a functioning market economy, the entrepreneur will try to make a monetary profit, which, as described by Smith (1776), enriches the other participants in the economy. Without these important indicators, the economic actor is lost (Mises 1949). These indicators are the product of specific institutional configurations. Absent the institutional context of a private property market society, economic actors will still strive to achieve their goals as best they can (North 1990).

There are several views on what entrepreneurship constitutes. Kirzner’s (1973) focuses on entrepreneurial alertness and the discovery of opportunities, where the entrepreneur is an actor responsible for creating and expanding businesses. The entrepreneurial process reveals previous errors, adjusts these errors, and thus improves the economy (Kirzner 1997).

Lavoie (1985a) extended Kirzner’s work regarding the entrepreneurial market process and revisited the socialist calculation debate and the problems of centralized economic planning (1985a). In Lavoie (1985b) the knowledge problem critique of socialist central planning is extended to include even modest attempts at national

economic planning, such as industrial policy, where attempts at planning did not function well.

The Schumpeterian view of the entrepreneur emphasizes the entrepreneur as a creator of new combinations of knowledge (Klein 2008). In Schumpeter's work ideas about an economy's creative response to changes in external conditions are highlighted (Schumpeter 1934, 1942, 1947).<sup>4</sup> Entrepreneurs are present in all societies. Under the existing institutions of any society the entrepreneurs will act to better their position, e.g., money, promotions, or future advancement (Boettke and Coyne 2009; Redford 2020). Schumpeter's entrepreneur is essentially disruptive, destroying the preexisting state of equilibrium, while Kirzner's entrepreneur spots opportunities in a disequilibrium and moves the economy toward an equilibrium. In Kirzner (1999) it is argued that the two types of entrepreneurs are not that different, rather they complement each other.

The entrepreneurial process can be contrasted with the social discoordination and lack of economic calculation which necessarily follow any institutional coercion against entrepreneurial freedom. The contrast is an administrative—or centrally planned economy. In a centrally planned economy resources are allocated to fulfil production goals (Mises [1929] 2011; Hayek 1945). The production decisions are set by an administrator with limited information and its own preferences rather than consumer demand. Plans distort the discovery process that an entrepreneur typically provides. Without price as a market signal the planner must rely on alternative measures or disregard signals all together (Huerta de Soto [1992] 2010). Entrepreneurship produces the information necessary for economic calculation. It is impossible to use a theoretical foundation in order to coordinate society by systematically imposing coercive measures.

Institutions create rules which incentivize certain behaviors by changing the payoffs associated with different behaviors. Institutions hence influence the entrepreneur's actions and are instrumental to economic prosperity (e.g., Boettke and Coyne 2003, 2009). The factors that have been emphasized, by scholars adherent to the Austrian school, are: 1) well-defined and enforceable private

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<sup>4</sup> There are of course more views on entrepreneurship (see, e.g., Leeson and Boettke 2009).

property rights, 2) the rule of law, and 3) a moral code of behavior that legitimizes and recognizes these traditions. For example, Hayek (1937, 1945, 1948) and Mises's (1920, 1949, n.d.) property rights argument revolved around the information problem. Without private property, exchange is distorted. Without market competition, the discovery process is hampered (Hayek [1968] 2002).

Baumol (1990) made the important distinction between productive and unproductive entrepreneurship. Entrepreneurs are under some institutional settings incentivized to destroy societal economic value or perform unproductive entrepreneurship (Baumol 1996). Baumol emphasized that whether entrepreneurship is value adding to society or oriented toward rent seeking or organized crime depends on the relative payoffs.

## THE CONTEXT—CHINA'S HISTORICAL WIND POWER DEVELOPMENT

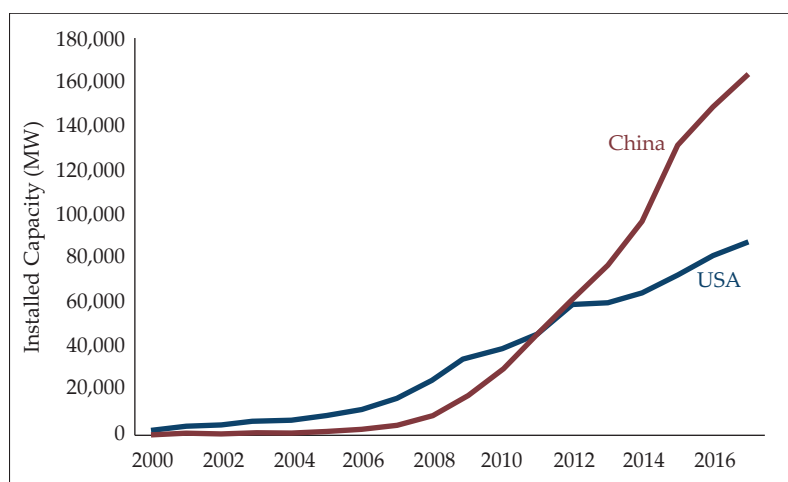
There is an increasing interest in the transformation of the Chinese energy system, whose cumulative wind power capacity increase is the largest in the world (Zeng et al. 2015; Lam, Branstetter, and Azevedo 2017; Karltorp, Guo, and Sandén 2017; Sahu 2017). Global installed capacity in 2018 was 597 gigawatts (WWEA 2019). Globally, 52.5 gigawatts were added in 2018, constituting an annual growth rate of 9.1 percent, of which China added 21 gigawatts. The Chinese accumulated wind power capacity was 217 gigawatts in 2018 (WWEA 2019).

China's early period of wind power expansion was slow. In the 1970s, wind power projects were limited to small off-grid projects in remote areas (Liu, Gan, and Zhang 2002; Xu et al. 2010). Grid-connected wind power in China was achieved in 1985, when four 55-kilowatt Vestas turbines were imported from Denmark (Zhengming et al. [2006]). International agencies such as the World Bank, the United Nations Environment Programme (UNEP), and Asian Development Bank facilitated China's early buildup of renewable energy (Liu, Gan, and Zhang 2002).

By the end of 2004, accumulated installed wind capacity was 769 megawatts, ranking tenth in the world (Zhang, Andrews-Speed, and Zhao 2013). During China's "Eleventh Five-Year Plan" period

(2006–10), installed capacity doubled for five consecutive years (Sun et al. 2015). Around 2012 China bypassed the USA as the country with most installed capacity (see figure 1). The installed capacity of a power system represents the maximum capacity that the system can produce under ideal conditions. A power plant with a one-megawatt installed capacity can, hence, produce at maximum one megawatt at any instance of time. Electricity generation, on the other hand, describes the amount of electricity that actually is produced during a specific period and is normally measured in kilowatt hours or megawatt hours.

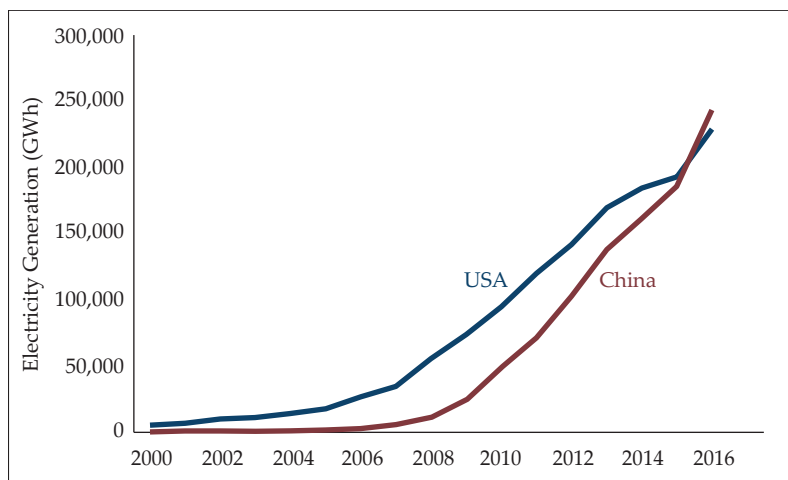
**Figure 1. Installed wind power capacity in the US and China, 2000–16**



Source: Data from IRENA (2018).

However, when it comes to electricity generation the United States was for a long time significantly higher, even though the Chinese installed capacity was almost double—the electricity output was almost equal (See figure 2).

**Figure 2. Electricity generation from wind power in the US and China, 2000–17**



Source: Data from IRENA (2018).

## PROBLEMS AND CONSEQUENCES

Several problems in Chinese wind power development have been identified and these downsides will be highlighted and discussed from a theoretical perspective. This synthesis of those problems is organized as follows: planning problems and knowledge problems; unproductive entrepreneurship; and bureaucracy and government policy.

### Planning Failures and Knowledge Problems

The Chinese wind power industry has faced institutional, managerial, technological, and cultural obstacles. When analyzing undesirable policy results, an economist usually resolves to examine the incentive structure. So, what explains China's results? The short answer is that the results are in line with the incentives found in an economy where planning and bureaucracy dominate (see e.g., Mises 1944; Nove 1982; and Boettke 2001, 2002a). The existing incentives limit traditional entrepreneurship and have replaced it

with institutional entrepreneurship, in which entrepreneurs must navigate the bureaucracy and engage in rent seeking (Mises 1944; Li, Feng, and Jiang, 2006; Huerta de Soto [1992] 2010).

Many of the problems in China's wind power development reside in political decision-making (Zhang, Andrews-Speed, and Zhao 2013; Huenteler et al. 2018). Governmental policies promoting installed capacity rather than actual utilization of wind resources have been a prevalent problem (Pengfei 2008; Li et al. 2018). For example, Chinese firms were mandated to construct a certain amount of wind power generation capacity. Given the requirement at hand, bureaucrats at state-owned enterprises constructed a specific generation capacity—without ensuring that electricity was actually generated.

The need to construct a certain amount of wind power leads to the sacrifice of quality as a selling point and to an intense price competition that hampers technological improvement and quality (Hayashi et al. 2018). Theoretically, competition should improve the quality of products. However, because quantity—not quality—is the factor for businesses to maximize and actors are spending someone else's money on someone else, an equilibrium of lower prices and increase sales through quality reductions can be expected. In the case of Chinese wind power, the result of this quality reduction is that the equipment cannot be integrated in a large-scale grid (Xingang et al. 2012; Luo et al. 2016).

Furthermore, foreign firms exited the market driven by quantity competition and a prerequisite in the Power Purchase agreements which stipulated that there should be 50 percent local content (later 70 percent) in the wind turbines. During the eleventh five-year plan (2006–10), plans were made to advance the domestic wind power system and its related components (Feng et al. 2015). While approximately 95 percent of the turbines installed in China until year 2000 were imported, the following decades saw a significant drop. In 2005, more than 70 percent of China's wind power equipment was imported; in 2008, only 28 percent; and by the end of 2013, domestic manufacturing levels had reached 94 percent (Junfeng, Pengfei, and Hu 2010; Liu et al. 2015; Zhang et al. 2015). In 2012 there were only two international firms (Gamesa and Vestas) among the top ten parts manufacturers

in China, accounting for 3.8 percent and 3.2 percent of production, respectively (Feng et al. 2015).

The domestic production goal set in the eleventh five-year plan was fulfilled but created problems. Domestic production overcapacity caused further downward price pressure: in 2011, the manufacturing capacity was 30 gigawatts, but the annual demand was only 18 gigawatts (Li et al. 2012; Zhang et al. 2015). In 2013 the domestic new installed capacity was 16 gigawatts while only 0.7 gigawatts were exported, i.e., around 4 percent of domestic capacity (Liu et al. 2015).

The markets for advanced components such as bearings, converters and control systems were still dominated by international companies. The absence of domestic production capability generated a sizable supply–demand gap for core parts needed in turbines with a capacity exceeding one megawatt, and placed manufacturers at a technology import-absorption stage without key technologies of their own (Xingang et al. 2012). Before 2013 domestic Chinese turbine manufacturers were falling behind noticeably compared to international competitors, in cases where the Chinese companies had not mastered the construction of larger power plants (Liu et al. 2015).

Adam Smith, Ludwig von Mises, and F. A. Hayek all highlighted property rights as the roots of economic development. Property rights are lacking when the state mandates firms to construct unprofitable power plants. Smith's (1776) argument regarding property rights revolved around the incentives they created. Where property is privately owned, agents are residual claimants on the uses of their property and would not build power plants never meant to be operated. A state employee in a state-run firm who tries to follow state production requirements does not have the same profit motive.

The government policies that intervened in property rights, created a quality–price downward spiral which drew foreign firms out of the market since they could not compete at the low price levels (Klagge et al. 2012). Hence, an important source of know-how and technology transference was cut off. Paraphrasing Kirzner's (1985) observation; if one (China) only observes how many new plants are constructed and the generating capacity, one might miss "lightbulb moments" that could have made every wind plant more efficient.



In China the single-minded focus on expansion of a good within a planned economy created a path toward a low quality equilibrium.

## **Unproductive Entrepreneurship**

As Baumol (1990) pointed out, the entrepreneur can engage in productive and unproductive activities. Subsidies, price interventions and capacity goals have made the productive role of the classical entrepreneur absent under these Chinese institutional settings. In a market economy, it is illogical to construct a wind power plant absent grid connection. However, when the goal is to build as many power plants as possible, with the state and not the entrepreneur owning the company, the cheapest way to achieve the government's planned goal is to buy inferior products for inferior locations. Hence, as stated by Boettke and Coyne (2009), the institutions controlling the entrepreneur's behavior are instrumental to economic prosperity. Policies can affect the outcome, but even good policy can create unintended consequences under bad institutions (Rothbard [1970] 1977; Coyne and Moberg 2015; Evans 2016).

Wind power curtailment mainly refers to when a wind turbine must be shut down because of issues of safety, technology, and grid access management, and for other reasons. China has experienced extensive wind power curtailment, leading to a low power plant utilization rate (Sun et al. 2015; Fan et al. 2015; Zeng et al. 2015; Luo et al. 2016). The curtailment between the years 2010 and 2013 was estimated to be 3.9, 10, 20.8, and 16.2 terawatt hours, respectively (Luo et al. 2016). The rapid installation of new wind turbine capacity without adequate maintenance and management technologies compromised operation safety (Feng et al. 2015). From a technological perspective, Lin et al. (2016) identified four reasons for the operating failures: lack of core technologies; inferior quality due to price competition; design standards and wind farm climate differences; and exterior factors, such as wind farm construction, power grids, and maintenance.

In 2007 the average full-load hours of Chinese wind turbines was 1,787, which was considerably lower than in Western countries such as the United Kingdom (2,628 hours), Australia (2,500 hours), and the United States (2,300 hours). In China, some

turbines designed for two thousand full-load hours are currently in operation for only three hundred hours a year (Sahu 2017). The utilization fall due to curtailment was up to 15 percent between 2011 and 2015, rendering sizeable financial costs, equivalent to about half of the wind farms' revenues (Luo et al. 2016; Karltorp, Guo, and Sandén 2017). Bad wind turbine performance, such as when turbines without low-voltage capability ride through disconnect from the power system, creates potential safety risks in the power system.<sup>5</sup> Disconnections lead to secondary shocks, which in turn can spill over into other parts of the system (Sahu 2017; Zeng et al. 2015).

The coerced focus on constructing power plants also led to some questionable location decisions. China's wind resource-rich regions are largely situated in the northern nonpopulated areas at the end of the power grid, where the grid structure is unsuitable for large-scale wind power (Han et al. 2009). Energy demand is concentrated in the south and around the coast, where manufacturing and a large portion of the population are situated. Placing a wind power plant over three thousand kilometers away from the main demand would in any system lead to significant power losses. Grid connection capacity has in some years lagged installed capacity by more than 30 percent. The result has been that power generation has exceeded the grid's capacity, leading to abandonment and grid instability (Zhe 2011; Sun et al. 2015; Fan et al. 2015; Zeng et al. 2015; Zhang et al. 2017).<sup>6</sup>

Another field negatively affected by wind power policy is technological development. Chinese inventors have been granted few international but numerous domestic patents. Beginning around the year 2000, granted domestic patents flourished. According to Lei et al. (2013) and Li (2012), governmental programs aimed at increasing the number of patents explain the surge. Chinese

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<sup>5</sup> The capability of electric generators to stay connected if lower electric network voltage occurs for a short period. Without this capability a chain reaction might start where more generators are disconnected.

<sup>6</sup> Grid expansion is costly for power companies, and upgrading the power grid can be even more costly. Even though the concession project policies state that companies shall construct transmission lines to the wind farms, there are potential loopholes regarding when the construction has to be finished or the quality of the transmission line (Han et al. 2009).

companies were incentivized to seek local patents. Gosens and Lu (2013, 2014) also noticed that the number of granted patents were an evaluation criterion for many researchers and administrators. Promotions depended on goal fulfilment, and a certain number of patents was a government goal (Li 2012; Lam et al. 2017).<sup>7</sup>

In terms of wind power innovation, however, China had limited international success (Lam, Branstetter, and Azevedo 2017). Chinese wind turbine manufacturers secured few international patents, and several major manufacturers were unable to patent their technologies. For example, granted patent applications to the European Patent Office (EPO) originating in China were low (between 1980 and 2014). Even if a firm do not intend to produce on a certain market it is beneficial to patent breakthroughs to license the usage to other firms. Home country bias in patenting should be expected but it is remarkable that so many big industrial manufacturing firms that are engaged in a fast-developing technology do not patent.

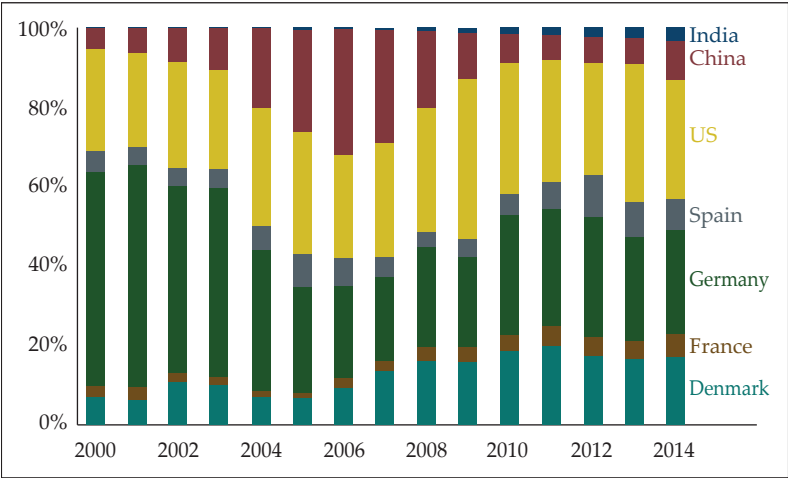
The two major Chinese firms that tried to patent—Envision and XEMC—lodged thirty-eight and nineteen EPO applications, respectively. The two firms were granted two and six patents. The firm Sinovel submitted twenty-one patent applications to the EPO; of these all but one was either subsequently withdrawn by Sinovel or rejected by the EPO. At the EPO the average application has a fifty percent success rate (see Grafström, 2017). Among the top ten Chinese wind power manufacturing firms, seven obtained no EPO patents, and five of them have no recorded EPO applications. The success and application rates were similar at the USPTO.

Only observing a single patent office (such as a country's home office) is not an optimal method for comparing the countries with the most patents in the wind sector, since the local offices can have criteria with differing degrees of strictness. In figure 3 the distribution of wind power patents among these countries when only considering patents approved at one patent office is displayed (see the appendix for each country's total patents):

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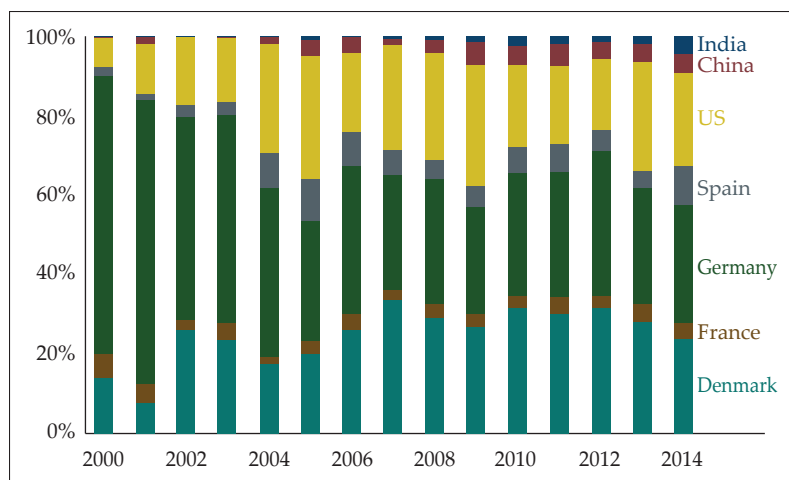
<sup>7</sup> The Chinese legal system also had problems with distinguishing real innovations from false innovations. Hence, there was a large number of "junk" patents (Lam, Branstetter, and Azevedo 2017).

Figure 3. Proportion of patents awarded by one office or more



Source: Data from OECD.Stat (Patents - Technology Development; accessed [10 05, 2018]), [<https://stats.oecd.org/>].

The aggregate Chinese patent approval was high around 2006, but only if data from one patent office is considered. If the criteria are changed to require that the patent be approved by more than one office (an indicator of a higher-quality patent), as in figure 4, then the Chinese patents are absent.

**Figure 4. Proportion of patents awarded by four or more patent offices**

Source: Data from OECD.Stat (Patents Technology Development; accessed [10 05, 2018]), [<https://stats.oecd.org/>].

It is likely that it was easier to obtain a patent in China in the early 2000s and that Chinese patents were thus of lower quality, making a side-by-side comparison unproductive. Before 2009 Chinese patent examiners limited their search reports to domestic prior art, thus not considering global novelty (Cass 2009).

From a theoretical standpoint, both a planning problem and an entrepreneurial problem are evident. Policies (as, for example, requiring patents to be secured) trying to direct production and investments is often counterproductive. Drawing on insights from Kirzner (1982), it is unsurprising that attempts at technological development by direct regulation and interventions are based on erroneous information that obstructs or distorts the market's own complicated discovery process (Rothbard [1970] 1977; Huerta de Soto [1992] 2010). The entrepreneurial process incentivizes entrepreneurs to reveal previous errors and to adjust behavior to correct those errors (Kirzner 1997). When patenting becomes a numbers game (paired with a demand for as low a price as possible, with a disregard for quality), growth can be expected in what is counted—in this case patents.

The Schumpeterian creative destruction process also becomes a dangerous activity in a planned economy. There is a risk that the process will disrupt the plan, and no resources can be allocated to a previously unknown venture. The destruction can also threaten the power of those who might prefer the status quo. Hence, whereas the entrepreneur would struggle against competition in a market economy, he will face a political power struggle in a planned economy.

Following Hayek's "The Use of Knowledge in Society" (1945) it is evident that any central plan will face obstacles. A centrally planned wind power program in many instances will not match the efficiency of the market. The incentives, knowledge, and imagination of a single planner are only a small fraction of the total sum of knowledge in society.

## **Bureaucracy and Government Policy**

As Mises (1983, 53) observed, the allocation of resources by bureaucracy is made through obedience to rules. When making decisions based on rules, without price signals, consumer satisfaction or production toward a low cost cannot be achieved. The system of profit and loss plays little role in the bureaucratic machinery, and to the extent that it does play a role, the highest value is placed on the bureaucratic administration's rule-following ability. Hence, we can expect a neglect of entrepreneurship and prices and costs where rules and regulations determine the product to be supplied, its characteristics, its price, and the method of production (Carnis 2009).

The Chinese wind power sector was under the studied period (1980–2016) profoundly regulated by administrative practices and planning. Some policies were counterproductive due to several competing/uncoordinated governmental entities (Lema and Ruby 2007). For example, Liao (2016) examined seventy-two wind energy policies issued between 1995–2014 and found more than twenty actors who independently or jointly issued policies. The issuers of policy were predominantly agencies that controlled key economic and administrative resources—not the one that oversaw wind power. The governmental agencies could not tap into the localized knowledge or predict the direction of a fast-developing

technology. Hence, the agencies produced policies that hindered technological development.

In 1994, one of China's earliest wind power-specific policies was introduced. The Ministry of Electric Power (MOEP) decided that installed wind power capacity should increase a hundredfold, from about ten megawatts in 1993 to one thousand megawatts in 2000. The government's target was not reached, stopping at 350 megawatts. To support the government production target, power companies were obliged to buy (or produce) electricity from wind power, and they introduced a price guarantee of 15 percent above construction cost to developers (Lema and Ruby 2007). The policy measures failed, since they did not achieve legal status, meaning that noncompliance was not penalized. Noncompliance was extensive, which was not surprising considering that wind energy was significantly more expensive than coal power (Lema and Ruby 2007; Karltorp, Guo, and Sandén 2017).

Another policy-related example is revealed in the wind farm approval process. Government contract projects appeared in the early 1980s, while the first concession project was carried out in 2003 after a new concession model was established (Han et al. 2009). Approval of contract projects worked as follows: wind power companies presented large (over fifty megawatts) project proposals to the National Development and Reform Commission (NDRC) and smaller (under fifty megawatts) proposals to local administrations such as the Inner Mongolia Development and Reform Commission (IMDRC), whose decisions did not require approval from the NDRC.

The division of the approval process by project size in 2003 was intended to reduce bureaucratic delays. Previously every new project required approval by the NDRC, making the application process for wind power projects complex and time consuming. Since provincial governments could now approve projects below fifty megawatts, a substantial number of wind farms became 49.5 megawatts in size. These smaller local installations were not coordinated in terms of the development of grids, rendering grid problems (Lema and Ruby 2007; Zhang, Andrews-Speed, and Zhao 2013; Karltorp, Guo, and Sandén 2017).

The 2003 concession model opened, and to some extent formed, a market—but the new planned organization had weaknesses

(Lema and Ruby 2007). The utilities/firms that offered the best price per kilowatt hour won the concessions and consequently the right to construct wind power plants and produce electricity on the concession sites. The winner was guaranteed a fixed price for the first thirty thousand full-load hours (these were power purchase agreements, PPA). After the initial thirty-thousand full-load hours and until the end of the concession period, electricity would be sold at a uniform on-grid price. The concession model had some unintended and in hindsight obvious disadvantages. Some bidders had incentives to intentionally underestimate operating costs to promise a lower price compared to other bidders.

The power companies in China were obligated to have a certain amount of generation capacity from renewable energy sources; the renewable energy portfolio standards were due to the Renewable Energy Law of 2006 (Gosens and Lu 2013). The combination of the renewable portfolio standard and the concession program initiated a steep fall in the prices of the winning bids (between 30 and 50 percent), since the firms were obligated to have the renewable output. The companies made unprofitable bids using the cash flow from other business areas to sustain unprofitable projects, but the governmental goals were fulfilled. Another price distortion came from the Chinese government's attempt to support construction of power plants by introducing a price guarantee of 15 percent above construction cost, which incentivized developers to construct otherwise unprofitable plants (Lema and Ruby 2007).

Another problem can be observed in the bureaucratic nature of a Chinese renewable energy price subsidy scheme which caused financial constraint problems in several sectors (Liu et al. 2015; Karltorp, Guo, and Sandén 2017). The electricity end users were obliged to pay a surcharge for renewable electricity. The payment went into a fund under the Ministry of Finance, which redistributed the money to the provincial finance bureaus. The provincial finance bureaus distributed the money to local utility companies based on their renewable energy production. The companies had to wait two to three years for the payments, which was problematic considering that the subsidies were up to half the selling price of electricity (Sahu 2017). The firms in turn had problems paying the turbine manufacturers, who in turn could not pay the component providers.



It is problematic that pricing for both wholesale and retail power remains under the control of the central government, since the central government has failed to deliver incentives for flexibility for generators and end users. The influence of provincial governments over the power system impedes interprovincial electricity trading (Pollitt et al. 2017). For example, local governments have repeatedly intervened in direct electricity trades, reducing energy prices to stimulate their local economies, even though that is not beneficial for the power system (Zhang, Andrews-Speed, and Li 2018).

The application of administrative rather than market mechanisms has been a major hurdle to a well-functioning Chinese energy system (Depuy 2015). Hence, without proper exchange no proper market prices will materialize. As noted by, for example, Mises (1949), price signals direct the entrepreneurs. Without these important indicators, the economic actor is lost. Hayek (1937, 1945) building on Mises, described the information-carrying capacity of market prices, which reveal value and the relative scarcity of resources for consumers and producers.

The problems that have been revealed here should come as no surprise since the Chinese political actors do not operate on a market, but rather in a planned economy with traces of a market. In a market economy, political actions (that are market compatible) can moderately distort market outcomes without modifying the *modus operandi* of the market (Mises 1944). In contrast, political actions that are noncompatible with market processes, especially in a nonmarket setting, produce an entangled political economy (Smith, Wagner, and Yandle 2010).

## IMPLICATIONS

China's policies and regulations between 1980 and 2016 caused problems for a renewable energy transition situation. There were problems with management, strategies, programs, and policies, which were sorted and separated under numerous departments of the Chinese central and local governments. From an economic theoretical perspective, a strong market structure would provide practical solutions to some of these challenges.

The findings in this paper have several implications. First, as in the 1920s, the 2020s could possibly see a great planning debate because

of the perceived success of China's state-run five-year plans. In this paper, the wind power industry has been identified as revealing limitations to planning. To pass a comprehensive judgment on the Chinese economy more sectors must be investigated, following Boettke's insight that aggregates might be misleading and that answers hide at the micro level.

Second, there are applications for the coming global energy system transition. Policymakers should use market incentives or else their countries risk experiencing problems like China's. The observed Chinese power sector was profoundly regulated by administrative practices. Planning was likely the underlying institutional reason for the challenges that have been described.

Third, policymakers should acknowledge incentive problems. When any government set a command-and-control target for new installed capacity, the state power companies delivered to target. For example, the goal of increasing power plant capacity (with mandatory portfolios) led to construction (i.e., generation capacity) but not necessarily more generation of energy. The incentives in China promoted construction—regardless of whether the construction could be connected to a grid or was economically profitable. When a manager is evaluated based on how well he achieves the planned goal, he will optimize his effort to reach the goal, disregarding downsides such as the fact that the new power plants that will not be connected to a grid.

The findings have a last implication for other countries as a guide for what not to do. A policymaker should assume that they do not have enough information to create a detail-oriented approach to reducing carbon emissions for the whole economy.

A last reflection, going back to Boettke (2002a, 10):

Unfortunately, most individuals in these economies wake up every day and go to work at the wrong job, in a factory that is in the wrong place, to produce the wrong goods. Many of the firms actually contribute “negative value added”, that is, the value of the inputs in the production process is greater than the market value of the output that is produced. This is the legacy of decades of attempted central administration of the economy.

The Chinese economy will probably become older than the Soviet economy managed to, but there should be caution against saying

that "[t]he Chinese economy outpaces the West" as in the infamous *Foreign Affairs* article from 1953.

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## APPENDIX

**Table 1. Absolute number of patents registered at one or more patent offices**

Year	China	Germany	USA	Denmark	Spain	France	India
2000	12	121	59	15	11	6	0
2009	174	361	652	247	70	59	26
2014	96	270	313	171	74	61	35

Rounded to the nearest whole number. Source: Data from OECD.Stat (Patents - Technology Development); accessed [10 05, 2018]), [<https://stats.oecd.org/>].

**Table 2. Absolute number of patents registered at four or more patent offices**

Year	China	Germany	USA	Denmark	Spain	France	India
2000	0	36	4	7	1	3	0
2009	12	123	108	122	22	13	6
2014	8	60	48	48	19	9	9

Rounded to the nearest whole number. Source: Data from OECD.Stat (Patents - Technology Development); accessed [10 05, 2018]), [<https://stats.oecd.org/>].

# NET PRESENT VALUE, DURATION, AND CAPM IN LIGHT OF INVESTMENT THEORY: A COMMENT ON KRUK

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JEL CLASSIFICATION: B31, B41, B53, G32

**ABSTRACT:** In her paper “Corporate Risk Evaluation in the Context of Austrian Business Cycle Theory” recently published in this journal, Joanna Kruk aims to investigate how artificially low interest rates resulting from central bank intervention distort individual investment appraisals and ultimately result in both entrepreneurial misjudgment and resource-wasting malinvestment, fueling the business cycle. She identifies entrepreneurs’ net present value calculations, supposedly unadjusted for risk, as a major issue and suggests adjusting those calculations for risk via both the duration method and the Capital Asset Pricing Model to mitigate the distorting effects. Her argumentation is, however, trapped in neoclassical reasoning and is adversely affected by several misconceptions of the net present value criterion. This comment seeks to reveal those fallacies and explain how to address uncertainty when using net present value calculations to make those calculations part of the solution rather than part of the problem of entrepreneurial misjudgment. The findings are derived from German investment theory rooted in the Austrian school of thought, meaning that they differ compared to those of neoclassical finance theory.

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## INTRODUCTION

In her paper “Corporate Risk Evaluation in the Context of Austrian Business Cycle Theory” recently published in this journal, Kruk (2020) seeks to explain why and how artificially low interest rates brought about by central bank intervention distort individual investment appraisals and eventually lead to clustered entrepreneurial misjudgment, malinvestment, and capital consumption, that is, the business cycle. Her perception of previous research is that “little attention was paid to the analysis of corporate finance and the causes of companies’ erroneous decisions about initiating and carrying out unprofitable undertakings,” which indicates she believes that investigating “the motivation of financial decisions on a micro-level can shed new light on the foundations of the emergence of the business cycle” (Kruk 2020, 131–32). Certainly economic calculation in general, and entrepreneurial investment decisions in particular, are yet to be thoroughly explored from the perspective of the acting individual and those areas should be stringently investigated owing to their significance for both Austrian theorizing (e.g., Austrian business cycle theory [ABCT]) and practice. However, there has already been far more discussion on the topic than Kruk (2020) suggests, both in general terms and with explicit links to ABCT.<sup>1</sup>

In essence, Kruk (2020) asserts that the economy shifts toward a riskier position in response to artificially low interest rates and that decision-makers fail to incorporate that risk appropriately in their investment calculi. By neglecting investment risk, entrepreneurs invest in projects that are only seemingly profitable. To aid in mitigating this issue, Kruk suggests adjusting net present value (NPV) calculations, which serve as the basis of investment decisions, for risk. Kruk’s underlying idea is to decrease resulting NPVs by applying mathematical adjustments to make investment projects look less feasible in order to deter entrepreneurs from making poor investments. Specifically, Kruk suggests NPVs risk-adjusted based on both duration and the Capital Asset Pricing Model (CAPM).

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<sup>1</sup> See, in particular, Rapp (2015); Olbrich, Quill, and Rapp (2015); Herbener and Rapp (2016); Olbrich, Rapp, and Venitz (2016); Rapp, Olbrich, and Venitz (2017); Follert et al. (2018); Rapp, Olbrich, and Venitz (2018); Olbrich, Rapp, and Follert (2020).

However, entrepreneurs calculating an NPV must consider their individual circumstances if they are to receive a figure that is realistically supportive of the decision-making process, and naturally, this includes the consideration of what Kruk labels risk. Mises (1952, 126, *italics added*) explains:

One of the items of a bill of costs is the establishment of the difference between the price paid for the acquisition of what is commonly called durable production equipment and its present value. This present value is the money equivalent of the contribution this equipment will make to future earnings. *There is no certainty about the future state of the market and about the height of these earnings. They can only be determined by a speculative anticipation on the part of the entrepreneur.*

Contrary to Kruk's reasoning, neither duration nor CAPM serves to support entrepreneurs' speculative decision-making well. This comment aims to uncover the misconceptions inherent in Kruk's argument and to present alternative ways of addressing uncertainty when using the NPV as a tool to support entrepreneurial decision-making. To do so, we build on Prussian-German business economics, especially investment theory, which has been developed in the German-speaking world based on Austrian economics (Schmalenbach 1919, 334; Mises 1933, 9; [1960] 2003, 226; Schmidt 1933, 106; Herbener and Rapp 2016, 13; Olbrich, Rapp, and Follert 2020) and which fully adopts the perspective of the acting individual rather than building on the well-known escapist assumptions of neoclassicism.

## RISK, UNCERTAINTY, AND INVESTMENT DECISIONS

Kruk's (2020, 138) diagnosis is that "wealth maximizing investors are evaluating projects only using risk-free NPV [and that, hence,] they may underestimate the risk associated with their investment decisions." That is why "we cannot exclude risk from its role in the profitability of the investment projects, and this factor should be included in further analysis" (Kruk 2020, 137).

However, rather than failing to take account of the "risks" associated with a particular investment, investors largely do attempt to consider them in their investment calculi. Kruk (2020, 145–46) herself emphasizes that not only academics but also investment

practitioners by and large rely on the CAPM, which is believed to provide a reasonable *risk-adjusted* discount rate for NPV considerations. In other words: the problem Kruk seemingly identified is a mere straw man and the solution she proposes in response to it exactly corresponds to how most decision-makers already decide on their investments. Nevertheless, the issues of entrepreneurial misjudgment and malinvestment have not been mitigated, let alone resolved. Hence, adjusting NPV calculations for “risk” via the CAPM will evidently not offer a means to reduce clustered entrepreneurial malinvestment. Rapp (2015) indicates that neoclassical models such as the CAPM are part of the problem rather than the solution. In particular, they fuel the business cycle due to their strong interdependence with market data.

Kruk, moreover, is mistaken when associating regular entrepreneurial investment decisions with risk. Rather than probabilistic, calculable risk, it is Knightian uncertainty (Knight 1921) that gives rise to entrepreneurship (Mises 1949) and, hence, entrepreneurial decision problems in the first place. Kruk conveys the impression that entrepreneurial decision problems could—with some assumptions (146, 147) here and there—be solved mathematically. However, in the presence of Knightian uncertainty, decision problems are not well-structured and optimal solutions out of reach (Wilson and Alexis 1962; Adam and Witte 1979; Adam 1983; 1996; Rapp and Olbrich 2020) of even the most elaborate math. Rather, entrepreneurs (must) imagine how the future might look and apply judgment to ultimately make their (investment) decisions (Klein 2008; Foss and Klein 2012; Packard, Clark, and Klein 2017). Such judgment can certainly be informed by genuine economic calculation; given they are unrelated to the real world, however, models springing from neoclassicism, in particular the CAPM, are beyond the scope of any toolbox reasonably applicable for that purpose (Olbrich, Quill, and Rapp 2015; Follert et al. 2018).

## ON COMBINING NPV, DURATION, AND CAPM

Duration describes the sensitivity of the price of a *security* to changes in the interest rate in the case of a flat interest rate structure. In a perfect capital market under certainty, the price corresponds

to the NPV of the future earnings<sup>2</sup> and the duration equals the absolute amount of the interest (factor) elasticity of the price. Duration can be interpreted as an “average capital commitment period,” too, which reflects the average time at which one unit of the NPV flows to the investor (Matschke, Hering, and Klingelhöfer 2002, 173–75; Kruk 2020, 138–39).

A stream of future earnings with a low ratio is interpreted as less “risky” than one with a higher ratio, since the investor is interested in the earliest possible return on his initial investment. In this respect, the duration does indeed contain some information related to the uncertainty of future earnings.

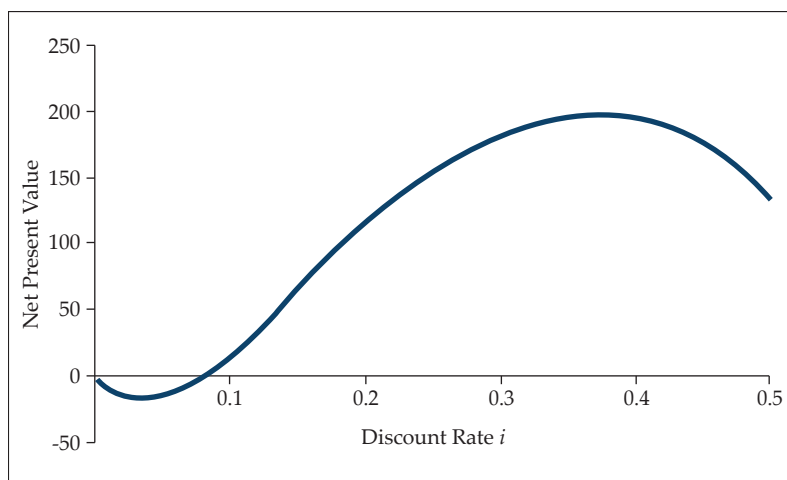
However, the informational value of this key figure is clearly limited. In contrast to investments in traded securities, entrepreneurial ventures usually require investments in tangible assets. In such cases, however, a negative correlation between the interest rate and NPV is anything but a given. Referring to Rothbard (1962 [2009], 62–63), Kruk (2020, 135–38) too assumes a decreasing NPV when interest rates rise. A simple example reveals, however, that this assumption need not be met: Suppose a business in the field of large-scale plant construction accepts a considerable early customer down payment, which leads to the following expected future income stream (–\$19,000, \$69,000, –\$80,000, \$28,000, \$2,000). The resulting NPV curve of this project is shown in Figure 1 (Hering 2017, 294–95):

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<sup>2</sup> We deliberately choose not to apply the term “cash flow” used by proponents of finance theory to describe the numerator in NPV analysis. Proponents of investment theory, as well as Mises (1952, 126), speak of “future earnings,” “future benefits,” or “future income” instead and emphasize the numerator’s subjective nature. “Future benefits must be forecasted from the perspective of the person who is valuing and choosing. Predictions of future benefits depend upon personal factors, such as the dividend policy, individual tax rates including potential tax loss carry-forwards, and individual synergies” (Herbener and Rapp 2016, 16). The importance of synergies in particular for entrepreneurial success has been intensively discussed within the Austrian school; see, e.g., Lachmann (1956, 13), Cwik (2008, 66), Klein (2010, 110), Boettke and Piano (2019, 22).



**Figure 1. Interest rate impact on NPV in our example (Hering 2017, 295)**



If the current interest rate is 10 percent, for example, an expected rise in the interest rate does not result in a decreased NPV and, hence, less willingness to invest on the part of the entrepreneur; instead, an increased NPV makes the project appear more attractive than previously. This simple yet realistic example alone shows how an artificial and arbitrary manipulation of the relevant discount rate (which should actually be determined by the entrepreneur's time preference) intended to reduce NPVs and, thus, decision-makers' willingness to invest, ultimately fails to do so. Despite this, Kruk (2020, 145–47) recommends discounting with an interest rate adjusted for a risk premium via the CAPM.

Kruk (2020, 139) is correct to point out that the duration estimates NPV reactions to the change in interest rates proportionally. It thus commits an estimation error owing to the relationship being nonlinear. Therefore, the larger the interest rate change, the less is its explanatory power. Additionally and above all, the duration suffers from the unrealistic assumption of a steady interest rate (both before and after the interest rate change) in all periods (Matschke, Hering, and Klingelhöfer 2002, 175). In reality, that is, in imperfect capital markets, such flat interest rate structures are merely rare exceptions rather than standard occurrences.

While the informational value of duration is in itself fairly limited and essentially confined to theoretical borderline cases, linking it to the finance theory-based CAPM as suggested by Kruk (2020, 145–48) worsens matters. In contrast to both NPV and duration, which are decision models, the CAPM is a neoclassical equilibrium model initially established to *explain* particular market outcomes *ex post*. For that reason alone, it is entirely pointless for *decision-making* purposes from an *ex ante* perspective (Hering 2017, 303–10; 2021, 236–40); the CAPM was simply not designed to support entrepreneurial decision-making (yet has been largely unsuccessful in fulfilling its intended purpose too; hence, it has failed miserably on all counts). Kruk (2020, 145–46) points to CAPM's popularity among both practitioners and academic proponents of finance theory to justify recourse to it; however, no matter how popular the CAPM has been, that popularity cannot overcome the fundamental issues associated with the model's application in investment appraisal.

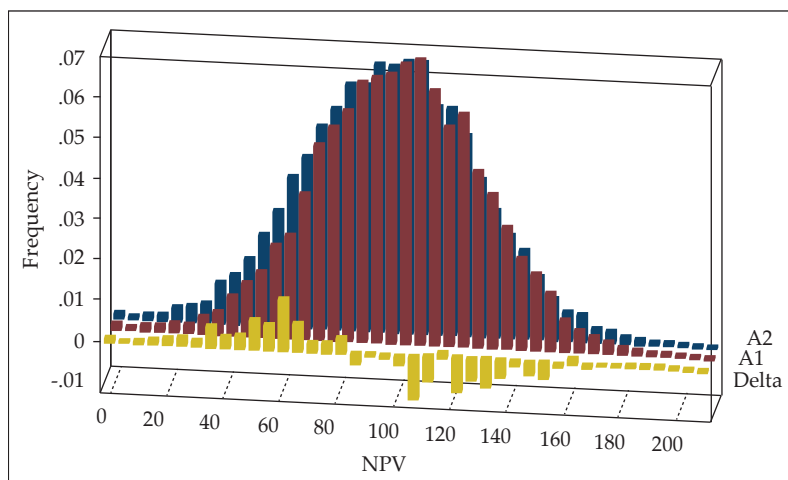
The linking of NPV, duration, and CAPM suffers from another logical flaw: while both NPV and duration are multi-period models, that is, they (in most cases) cover more than one time period and can often span decades, the standard CAPM as described and recommended by Kruk (2020, 146) is limited to the consideration of just a single period. In other words: Kruk suggests using a risk-adjusted discount rate derived from a static one-period equilibrium model for the appraisal of uncertain multi-period investment projects in the real world, that is, in dynamic disequilibrium.

## HOW TO ACCOUNT FOR UNCERTAINTY IN INVESTMENT APPRAISAL

Preparing for investment decisions by acting as if a future state of affairs were fully knowable seems decidedly inappropriate. We thus wholeheartedly agree with Kruk (2020, 146, 148) that (reasonably) considering the uncertainty associated with investment projects in NPV (or duration) calculi can contribute to the entrepreneur's *Verstehen* and, thereby, inform his ultimate judgment. Knightian uncertainty neither allows for exact calculations of NPVs in terms of point values nor seemingly definite decision suggestions. The best investment appraisal can do to support entrepreneurs in their decision-making under conditions of uncertainty is to reveal the financial

consequences of the range of uncertain future states of affairs imagined by the entrepreneur. Therefore, methods transparently uncovering the uncertainty associated with investment projects, as suggested by proponents of investment theory, rather than hiding uncertainty's implications in condensed point values, as suggested by neoclassical finance theory, best serve decision-making (Hering 2017, 273–75; Olbrich, Quill, and Rapp 2015, 25–27; Herbener and Rapp 2016, 19–20). Sensitivity analyses and simulations are particularly suitable methods to support the entrepreneur. Figure 2 shows an example (Hering 2017, 334–53) resulting from one such analysis based on a Monte Carlo simulation (Hertz 1964; Coenenberg 1970), which compares NPV distributions of two investment alternatives (A1, A2) given individual entrepreneurial estimations of both future earnings and period-specific discount rates.

**Figure 2. Comparison of two simulated NPV distributions**  
(Hering, Schneider, and Toll 2011, 424)



In contrast to the risk premium concept, which manipulates NPV calculi on the level of the input data and immediately presents a seemingly certain point value (Kruk 2020, 147–48), a simulative approach to considering uncertainty in investment appraisal calculates and visualizes the financial consequences of thousands and thousands of combinations of future earnings and discount

rates based on the entrepreneur's estimate, illustrating the possible outcomes of each alternative path of action and thus providing a transparent basis for decision-making. Whether, as figure 2 suggests at least at first glance, alternative A1 should actually be preferred over A2 on the basis of its profile being located somewhat further to the right cannot be decided upon in general terms; instead it ultimately remains an entrepreneurial decision under uncertainty demanding judgment. Needless to say, the entrepreneur may complement the quantitative results provided by investment appraisal with qualitative, non-calculable considerations when formulating his final decision (Herbener and Rapp 2016, 20; Hering 2017, 398–400; Hering 2021, 40–45).

## CONCLUSION

Neoclassical finance theory follows a (seemingly) objective, market value-based concept and hence, in some sense, resembles “the naive conception of the layman that things have value in themselves, i.e., intrinsic value” (Ritenour 2016, 192). Considering uncertainty in investment appraisal on the basis of escapist models derived from that theory, and particularly the CAPM, therefore cannot support acting humans making investment decisions in the real world. It would be more productive to apply scenario analyses (Hering 2017, 359, 375) and simulations to reveal the possible effects of uncertainty on future states of affairs in imperfect capital markets based on individual entrepreneurial imagination. Doing so would offer entrepreneurs the most transparent source to inform their judgment. The final decision to invest, however, certainly remains a purely entrepreneurial one that eludes mathematical formulation (Hering 2021, 12–13, 44–45, Herbener and Rapp, 2016, 20).

Applying models derived from neoclassical finance theory to support investment appraisal fuels the business cycle. Entrepreneurial evaluations based on actual individual circumstances and estimations of the future (taking into account subjective assessments of the stage of the business cycle) seem superior both on an individual level and in terms of the ability to mitigate the issue of clustered malinvestment as a whole. Although that approach cannot resolve the underlying problem of distorted interest rates and market prices initiated by central bank intervention, it can at least limit its effects (Rapp 2015).

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## BOOK REVIEW

# RESTORING THE PROMISE: HIGHER EDUCATION IN AMERICA

RICHARD K. VEDDER

OAKLAND, CALIF.: INDEPENDENT INSTITUTE, 2019, 400 + XIV PP.

TIMOTHY D. TERRELL\*

Higher education in the United States is facing a reckoning, and none too soon. Americans pay more per college student than any other country in the world, and the payoff is increasingly in doubt. The core mission of colleges and universities—teaching students—has suffered, as these institutions erect resort-like facilities, pursue politicized agendas, chase after athletic glory, and lavish resources on research of limited value. But a growing national skepticism about higher education, promising new technologies, and the rise of alternative institutions provide hope for students of the future.

Richard Vedder's *Restoring the Promise*, a sequel to his 2004 book *Going Broke by Degree*, documents the decline of American higher education—a decline that is likely to generate not only larger

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numbers of poorly-served students and more wasted taxpayer dollars, but the shuttering of some hallowed institutions. Drawing on a career's worth of research in this field, Vedder shows how the key problems facing higher education—including high cost, deteriorating learning, and mission drift—are traceable to increased government intrusion into education.

While the earnings differential between college graduates and those with less education was once rising, that gap has stopped increasing. How much of that gap is due to knowledge gained in college (as opposed to costly signaling) is in doubt, as Bryan Caplan has pointed out in his recent book *The Case Against Education*. But it is quite clear that many students are getting less education per dollar than did previous generations. Some of the most tragic cases are students who are enticed into pursuing a college degree but either cannot finish or perform poorly. As Vedder points out, "a large portion of new students never graduate, and those who graduate near the bottom of their class typically get jobs that pay little more than what high school graduates earn." (p. 4)

Colleges and universities have enjoyed great success at securing government subsidies, and even private institutions are heavily dependent on government funds channeled through federal financial aid and state subsidies provided to their students. Subsidies are typically justified on three grounds: 1) that higher education creates positive externalities, 2) that lowering the education costs for poorer students can serve an egalitarian purpose, and 3) that higher education and associated research provides a higher rate of return than what the government pays on its borrowed funds. These are problematic arguments. For instance, some of the positive spillovers are probably illusory, as the lower crime rates, better health habits, and other traits of college graduates might have been observed in those same individuals had they not chosen to attend college. Vedder points out that students who pay for their own tuition tend to perform better—more expensive private schools have higher graduation rates, for example. (p. 23) Subsidies remove some of the incentive to finish well, and finish quickly. Credential inflation, too, is a problem, as employers use the requirement of a college degree as a screening device, even though the degree itself contributes no knowledge useful to the job. Without subsidies, some of these graduates might have ended up with the same job, though without spending four years of their lives

and some of their own money obtaining the credential. (pp. 84, 85) Vedder points to the 2011–17 enrollment decline as evidence that people are catching on to the lower payoff from higher education, though demographic shifts or an improving economy might have something to do with the change in enrollment.

Vedder's exposure of the giant financial boondoggle that is higher education is one of the best features of *Restoring the Promise*. A university campus tends to underutilize physical resources, with classrooms, faculty offices, dormitories, and other facilities sitting idle a third or more of the year. While the fraction of higher education spending devoted to instruction and research has fallen to less than half of the total spending of colleges and universities (p. 175), spending on "overhead" such as non-teaching staff has exploded. Many of these are various staffers charged with seeing to the social, medical, mental health, and other needs of resident students, and administrative "deanlets" providing sometimes dubious contributions to the core mission of the institution. At the University of California, "there are more than 2,000 employees in the Office of the President, and that does not count the senior administrative officials and their staffs at each of the ten campuses of the institution." (p. 192). The bloat of non-instructional staff has important financial implications—as Vedder points out, if the ratio of university bureaucrats to faculty had remained the same from 1976 to 2011, there would be over half a million fewer university bureaucrats, and tuition could have been reduced 20 percent. (p. 190)

Why are colleges and universities trying to be one-stop shops for all student needs, providing food, housing, and social, medical, and therapeutic services? American universities provide food and housing, while many European universities do not. In America, college room and board costs rose 70 to 80 percent in inflation-adjusted dollars at four-year institutions from 1976 to 2013, while in the economy at large, housing and food away from home rose only a tiny fraction of that amount. (p. 199) While the quality of room and board is clearly better than it once was on campuses, Vedder suspects that one cause is the use of room and board fee increases as a somewhat less transparent way to raise the overall price for students.

Not only are taxpayer funds being wasted, but trusting private donors hand over sums large and small to fund endowments that

are misdirected. As Vedder shows, endowments generally don't lower the cost of tuition, and the fungibility of endowment dollars allows the administration to direct funds largely as it sees fit. Only occasionally do we see a university receive its comeuppance for its malfeasance, as when the University of Missouri was forced in 2019 to turn over funds intended to support Austrian scholars to the donor's designated watchdog, Hillsdale College.

Traditional methods of evaluating quality in higher education are dysfunctional. Accreditation might be supposed to push colleges and universities toward higher standards, but it is largely toothless and uninformative—Vedder describes it as “an expensive joke.” (p. 329) Disaccreditation is so rare that it's not much of a threat. Outside evaluators like *Forbes* and *U.S. News* give far more information of interest to prospective students, in contrast to the binary status options for higher education institutions—they either are accredited or not. Transparency is sorely lacking in accreditation, and conflicts of interest are rampant. For instance, as Vedder points out, 12 of the 13 members of the Southern Association of Colleges and Schools (SACS) Executive Council earn income from a SACS accredited school. And rather than look at outcomes, accrediting organizations tend to look at inputs, e.g., what proportion of faculty have terminal degrees, how many books are in the library, what is the typical faculty teaching load? The connection between these and the performance of graduates is tenuous, but for accreditors who are essentially a club of administrators and faculty, protecting the value of their colleagues might come before enhancing outcomes for students. Educational innovators, such as the for-profit sector, find themselves facing multimillion-dollar barriers to entry when trying to obtain accreditation from scratch. Furthermore, with federal education dollars tied to accreditation status, the fact that accreditation agencies are themselves “accredited” by the Department of Education means that the federal government can use accreditation to force innumerable mandates and restrictions on colleges and universities. Accreditation agencies need either a fundamental shift in governance and method, or outright elimination.

Colleges and universities are under overwhelming pressure to address diversity and equity problems in higher education. And yet a widely accepted mechanism for resolving these problems—race-influenced admissions policies—may not be helping promote

equal educational opportunity. “Indeed,” Vedder says, “one can plausibly argue that some colleges have deceived and misled and financially maimed minority students while sanctimoniously arguing they are sensitive and supportive of the needs of this population.” (p. 277) While some minority students are victims of “undermatching,” whereby well-qualified students attend schools that are lower quality than those they could have been admitted to, this is “relatively commonplace amongst all races and ethnicities.” (p. 277) Referencing work by Richard Sander and Stuart Taylor (2012) that examined affirmative action law school admissions, Vedder points out that *mismatching*, whereby students bypass good-quality schools to enter schools for which they are not prepared, has had serious financial consequences as failure to complete a degree leaves a student with significant student loans but no income-boosting degree with which to repay the debt. “It is better to be a graduate of a mid-quality law school with a job as a lawyer than to be a dropout of a prestigious law school with no legal career but a good deal of debt.” (p. 278)

Intellectual diversity, meanwhile, is not a priority with most colleges and universities. Vedder references a Higher Education Research Institute survey which shows that there were about five times as many professors on the political left as on the political right at baccalaureate institutions. In some disciplines, the political orientations are almost comically lopsided—one study showed, for example, that 72 percent of sociologists were Democrats while only 3 percent were Republicans. “Probably the most balanced of the core social science and humanities disciplines is economics, where studies show roughly equal proportions of Republicans, Democrats, and Independents—pretty representative of the American people.” (p. 281). Outside speaker invitations show further evidence of ideological imbalance: a study by Vedder and Joshua Distel (2018) looking at almost 7,000 speakers on about 200 campuses found that “for every two visitors with an identifiable distinctly right-of-center political orientation, there were seven with a left-of-center one, with the leftish orientation far more pronounced at the highest reputation schools....” (p. 281)

While, according to Vedder, “the traditional residential college is not going to die anytime soon,” (p. 302) changes are coming. But the changes are likely to come from outside traditional colleges, not

from inside. While administrator power has risen, the influence of the faculty has diminished. Despite the protection of tenure, faculty who fall afoul of the administration—perhaps because of outspoken opposition to the direction of the college or because of ideological differences—can be punished and even effectively fired. “[S]enior university administrators who dislike tenured faculty members can try to use... the Star Chamber approach to hound out faculty they find annoying.” (p. 330) College trustees, Vedder says, “remain theoretically powerful but realistically usually fairly clueless and under the thrall of the administration....” (p. 297) Trustees are given the Potemkin Village treatment, presented with a carefully filtered view of the college’s situation and the concerns of senior faculty. As Vedder points out, “often the errors of omission in information reporting give the trustees a distorted view and lead thus to inappropriate decisions... [and to] rubber-stamp policies that may be inappropriate.” (p. 297)

Disruptive innovation will be the key to change. While it is difficult to predict what that will look like, there are several possibilities. Innovation is likely to entail more competition in one form or another, challenging the educational cartel that characterizes accredited higher education today. Competition could appear on multiple margins. Perhaps some colleges will retain a substantial component of non-academic consumption and socialization, as they do today, while others will drop student entertainment, athletics, residence halls, and medical services and market their laser-like focus on formal education. Private organizations may develop nationally administered exit examinations (p. 338) that allow bright and/or hardworking students a better chance to finish early while focusing on outcomes rather than inputs to education. Competing exit examinations with different emphases or difficulty could provide students with a range of possible signals to communicate to potential employers.

Maybe accrediting organizations could find a useful purpose in promoting innovation instead of stifling it—for instance, accreditors could accredit courses, not just schools as a whole. Easing transfer credit restrictions would be possible with course-level standards across institutions. And in the extreme, why couldn’t a student cobble together a degree from a variety of accredited course providers, certified perhaps by one of the universities or by a group like the

National Student Clearinghouse or the ACT testing organization? (p. 336) This might not go over well with less effective faculty who take advantage of institutional limits on transfer credits, enjoying a captive market for their low-quality courses among students who were attracted to the institution by higher-quality courses taught by others. But the day may come when professors are less able to free-ride on the reputation of the institution as a whole. They could, as Vedder suggests, “be independent contractors, selling their instructional and research services to the university, which would be the course aggregator and degree certifier.” (p. 337) Shifts in this direction are already occurring, with the increase in the proportion of adjunct faculty relative to tenured or tenure-track faculty. There are some problems with this, such as the fact that adjunct faculty tend to be far less engaged in institutional governance, curriculum development, and campus socialization. An engaged, tenured faculty can push back against administrative overreach in ways that adjuncts cannot. But to the extent that tenured faculty use their influence to secure perks for themselves and push teaching loads ever lower, a model that increases competition at the instructor level and even ends tenure could produce some salutary results.

Vedder wraps up *Restoring the Promise* with some suggestions for changes in higher education that might reduce costs while increasing effectiveness. Among these: ending or revising federal student financial aid; increasing faculty teaching loads; instituting year-round instruction, possibly coupled with internships; ending governmental discrimination against for-profit schools; reevaluating tenure; imposing maximum average GPAs for state universities; eliminating colleges of education; ending speech codes; and requiring a core curriculum that covers the basics of civics and culture. (pp. 344–53) These are excellent ideas, though I am not enthusiastic about his proposal to encourage better use of university space by removing tax exemptions on “facilities that are not directly related to academics: Housing and food facilities, stadiums, recreation centers, and student union buildings...” (p. 345) or to end tax deductibility for “donations by wealthy alums for stadium sky boxes used perhaps eight times a year to attend contests involving throwing balls....” (pp. 345–46) To my mind, reducing tax burdens is more important than ending distortions created by preferential tax treatment.

*Restoring the Promise* is essential reading for those trying to wrap their heads around the many serious problems in America's ivory towers. Colleges and universities can be saved from their politicized sclerosis, and Vedder's engaging and thoughtful analysis shows us how.

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## BOOK REVIEW

# MEDIA WARS: THE BATTLE TO SHAPE OUR MINDS

WALTER DONWAY AND VINAY KOLHATKAR

INDEPENDENTLY PUBLISHED, 2020, 330 PP.

WILLIAM L. ANDERSON\*

Even the sunniest optimist would admit that the year 2020 was extremely challenging with the COVID-19 pandemic that hit our shores in January, anti-police riots in the spring and summer, and an extremely contentious presidential election in the fall. For people holding to libertarian and Austrian Economic viewpoints, 2020 was an unmitigated disaster, and almost all the trauma was the result of human action.

While the events of 2020 seemed to come upon us all of a sudden, in truth, they were the result of the political and cultural left marching through our social, media, governmental, religious, and educational institutions for many years, and especially in the past decade. In their book, *Media Wars: The Battle to Shape Our Minds*, journalists Walter Donway and Vinay Kolhatkar set out to document

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the rise of cultural Marxism and its accompanying Critical Theory and how they have gained control of the commanding heights of so many of our institutions.

Although the title of the book might lead one to believe it is about the news media, it really covers more ground, looking at a number of aspects of our society from higher education to economics, science, the arts and beyond. And, of course, it does deal with the media or, more specifically, with the various narratives that seem to drive current media coverage of events.

There are some important points I need to make at the beginning of this review, and the first is that this is a collection of essays, some written several years ago and others more recent. Second, it is not a scholarly volume of essays, but rather journalistic commentary with a conservative/libertarian bent. (They are worth reading but are not researched in the way that we would see a book of academic essays.) Third, this is not a book that is likely to convince someone on “the other side” to re-evaluate their own ideological positions, as it tends to affirm what many readers already might believe.

Despite its popular appeal, is *Media Wars* a good resource for academic researchers? Furthermore, how seriously should we take its commentary? The answer to both questions is yes.

Donway and Kolhatkar begin with an overall analysis of what they call “the establishment’s cultural narratives” that represent the Culture War, Black Lives Matter, racism, animus toward historic Western Culture, college campus issues, and what they call the “fountainhead of irrationality in the West.” Interestingly, they begin with the fall of the Soviet Union and the communist governments of that country and its Eastern European satellites. For those of us old enough to have lived through most of the Cold War, including participating in the “duck-and-cover” nuclear bomb drills held in the schools and experiencing the Cuban Missile Crisis, it was a heady and happy time. Even a socialist like Robert Heilbroner would write in the *New Yorker* (1990) that socialism had failed and that Ludwig von Mises (1951) had been correct when he claimed in *Socialism* that socialist economies would break down because of the problem with economic calculation. Capitalism seemed to have been vindicated and socialism was openly declared a failure.

Three decades after Heilbroner's article, the pendulum has swung mightily. All of the political media darlings today, such as Rep. Alexandria Ocasio-Cortez of New York, are outspoken socialists, and the *New York Times* has launched two major broadsides against capitalism. The first was its November 2017 series on the 100-year anniversary of the Russian Revolution when the NYT portrayed the former European communist world as a paradise lost where women had great sex and the welfare state covered everyone's needs from housing to medical care.

The second NYT attack on capitalism came with its controversial *1619 Project* in which the paper claimed that American capitalism was deeply and irredeemably rooted in slavery and that every business tool from double-entry bookkeeping to personnel management had been developed to keep slaves in check, modern-day slaves being employees of private firms. Not only was modern business the direct descendant of American chattel slavery, but that even the American Revolution itself was fought because the colonists feared Great Britain would abolish slavery. America's founding, the NYT declared, was in 1619, when the first slaves arrived on American shores, not 1776 when colonists declared their independence from Great Britain.

When numerous historians and economists thoroughly debunked much of the *1619 Project*, the *Times* responded not in good faith but rather accused its critics of racism and worse, ensuring that there could be no debate over the veracity of the series, at least according to what supposedly is the standard of American journalism, the vaunted "Newspaper of Record." Instead, the NYT has turned into a vehicle that not only disseminated historical disinformation, but also has become a major foe of the very capitalist system that make a newspaper like the *New York Times* even possible.

Capitalism in America today is not fighting rear-guard action but rather a full-frontal assault from nearly every institution from politics to higher education. While some critics, such as economist Paul Krugman, claim that capitalism has the self-tendency to implode, since markets are imperfect and will fall into the Keynesian "liquidity trap" unless rescued by government policies, others condemn capitalism for promoting what they allege to be inequality. The authors, not surprisingly, present a different view on capitalism, applying the Austrian paradigm.

In a section in Chapter 12 entitled “Rational Economic Science,” Kolhatkar writes that free markets permit “price discovery” in which prices allow market participants to bring supply and demand into balance. He goes on to note that interest rates permit a term structure that is best “discovered by a free market.” Economic growth, he writes, “is primarily driven by accumulation of capital to invest in applying scientific progress and innovation to production,” and in a free market, the process builds upon itself. Over time, this capital investment builds upon itself to bring about increases in living standards.

In contrast to Austrian economics, Kolhatkar attacks Keynesianism as being “quackery,” laying out some fundamental precepts that John Maynard Keynes and his followers have created in the years since Keynes published *The General Theory of Employment, Interest, and Money* in 1936. Some of these principles include what Austrians have been saying about Keynesian economic thinking for years, including the beliefs that:

- interest rates always are “too high” and must be manipulated by monetary authorities;
- the stock market really is like a gambling casino;
- gold as money is (to quote Keynes) a “barbarous relic”;
- the price system does not help markets “self-correct.”

Kolhatkar writes:

Eventually, euphemisms like *fiscal policy*, *monetary policy*, and *quantitative easing* became folklore in peer-reviewed journals, then part of an everyday lexicon of generations of bureaucrats, economists, journalists, and finance professionals. As the lie morphed into “mainstream economics,” it became the Big Lie. What does the Big Lie euphemize?

Money supply *manipulation*, interest rate *bastardization*, *crony* project funding, incessant stealing from savers to let borrowers borrow cheaply, an absurd *reverence for inflation* as though it is needed for economic growth, setting up *false convictions* (the Fall Guys), extolling the issuance of paper money *unlinked to value*, *subsidizing* and interfering with banking—these are only some of the absurdities that hide behind the euphemisms. (p. 101, emphasis theirs)

This is not something one can write in an academic journal and it certainly is not something one would see in a textbook, yet for many of us, it is something we *wish* we could see in such publication, or something close to it. Those of us tied to the Austrian School believe that Keynesian “economics” and the related schools of thought (i.e., Modern Monetary Theory) are fraudulent even though they have been blessed with academic and political credentials.

But while *Media Wars* examines subjects like economics and sciences, its actual focus is our current culture war and how modern progressivism really is based upon cultural worldviews. We are not dealing with an intellectual arena in which people of goodwill dispassionately examine various ideas to see what is best; if that really were the case, Modern Monetary Theory would already have been dismissed as nothing more than an attempt to academically sanitize massive money printing. Instead, we are dealing with what only can be called a rigged system in which a progressive pipeline from academe moves to the academic journals and publishers and ultimately to the mainstream news media, led by the *New York Times* and *Washington Post*, along with the broadcast networks like NBC, CBS, ABC, PBS, and CNN.

The authors briefly examine social media at the end of the book, but do not deal with the current controversies surrounding the hard-left censorship that the social media firms like Facebook and Twitter have imposed upon their platforms. Given the major role that social media and tech firms like Google played in the U.S. presidential election, one would have liked to have read the opinions and insights the authors might have had—although it probably is not hard to predict what they would have written.

*Media Wars* is worth reading but, as I noted earlier, it isn’t a book that will have academic standing and it isn’t a volume one gives to a progressive friend to present a convincing viewpoint from the other side. That doesn’t mean the authors have failed to make their points, but in this partisan age, even well-researched and well-reasoned conclusions are dismissed as hackery and shilling for that “failed” system known as capitalism.

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## BOOK REVIEW

# CLASSICAL ECONOMIC THEORY AND THE MODERN ECONOMY

STEVEN KATES

EDWARD ELGAR, 2020. 264 PP.

PER L. BYLUND\*

Steven Kates, historian of economic thought, is a persistent and vocal critic of Keynesian demand side economics. His recent book, *Classical Economic Theory and the Modern Economy* (Edward Elgar, 2020), connects the dots in his critique by explaining, elaborating on, and advocating for classical economic theory. Specifically, the aim is to explain economics as it was understood by John Stuart Mill in his *Principles of Political Economy* (1848), which to Kates is when “[e]conomic theory reached its highest level of analytical power and depth” (back matter). He does this by contrasting classical economics with Keynesian such.

It may seem strange that Kates chooses to use Keynesian dogma as backdrop for his defense for pre-marginalist economics. But the

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author notes that modern mainstream economics, especially macroeconomics, has drifted so far from the classical understanding of the economy that economists of today are incapable of comprehending the earlier analysis. Thus, the reader cannot simply be provided the classical analysis as is, but must be made aware of their fundamentally different perspective. Kates does this by both introducing the contrast, including references to the errors of the “false mythology,” and elaborating on how and why economics came to adopt it. The book is therefore three books in one: an introduction to and explanation of classical economic thought; a debunking of Keynesian demand-side economics; and a discussion on the history of this fundamental shift in economic thought.

The book’s eleven chapters plus afterword takes the reader through a blend of these three perspectives. It is an approach that works well for getting the point across and making sure the reader does not jump to conclusions. Some readers may find it repetitive at times, but this too is likely intentional as the author revisits arguments, concepts, and important points in order to ensure that the classical theory he presents is not distorted by being interpreted using a modern economics lens. In fact, as the author claims early in the book, the reader’s modern conception of economics stands in the way of understanding classical economics.

Before the actual discussion starts (in chapter 3, “The background”), the first two chapters are the author’s introduction and a statement about the unique nature of the problem addressed. Chapter 2 is titled “The purpose of this book and why only I could write it.” It is both a brief personal history of how Kates discovered the meaning and importance of Say’s Law and an overview of his substantial previous work on this topic along with a personal account of the power of applying sound economic theory in real-world policy and practice. It also underscores the difficulty of understanding classical economics the way J.S. Mill and his contemporaries understood it.

Chapter 3 “The background” gets the reader up to speed with the classical perspective. It starts with the author stating the problem that the book is intended to amend: “Modern economics is founded on classical fallacies of such an intricate nature and confounding depth that it is almost impossible to understand how it was ever

different or to see the logic of the economics of the past” (p. 45). It then briefly explains what classical economics is and who the classical economists were. The chapter sets the boundaries for the discussion by noting the basic fallacies of modern economics and, therefore, what it misses.

Chapter 4 “The Keynesian revolution and classical theory” explains the Keynesian revolution in economics. Drawing from the author’s previous work, the chapter quickly moves into discussing the folly of aggregate demand analysis and explains the true (classical) meaning of Say’s Law, which refutes demand-side economics and policy. Kates does more than summarize his previous work, however. He takes an important next step by distinguishing between two laws attributed to Jean-Baptiste Say: the well-known *loi des débouchés*, found in Say’s *A Treatise on Political Economy* (1803), and the modern-day conception of Say’s Law that states the impossibility of general overproduction (demand deficiency). This discussion is then used to reconnect to Keynes’s work and straw man assault on classical economics.

Chapter 5 “Understanding classical presuppositions, terminology and concepts” is something of a classical economics dictionary that explains core terms and concepts. The explanations are contrasted with how the concepts are misconstrued in Keynesian theory.

Chapter 6 “The classical theory of value and the marginal revolution” attempts to dispel the commonly held view that classical economics was based on the labor theory of value. Not so, argues Kates. J.S. Mill presented a theory of value in 17 points, reproduced in this chapter, that at least in part undermines the revolution of marginalist economics: the very first of Mill’s elements states that “Value is a relative term.” The chapter further discusses the classical economics perspective on the role of money, credit, and the business cycle.

Chapter 7 “Keynesian theory overruns the classics” explains how Keynes’s *The Theory General Theory of Employment, Interest and Money* (1936) in merely a decade and a half could change economics to the core. The chapter provides a historical overview of the core players and their roles in producing the revolution. It thereby explains the mechanics by which the Keynesian revolution was brought about.

Chapter 8 “The basis for Keynes’s success: why was Keynes able to succeed” continues where chapter 7 left off by taking the discussion



of “who” to “how.” Kates here discusses Keynes’s position and influence in the economics discipline, the temper of the times, the connection with Kuznets’s development of the GDP measure and how it was implemented as “basically a reflection of Keynesian theory” (p. 179), and the role of statistics and mathematics.

Chapter 9 “Classical theory and the role of government” deals with another common misconception of classical economics: that the classical economists were highly skeptical of government and public spending. Kates here argues that classical economics was not *laissez faire* economics but, in contrast, that the classical economists saw a major role for government and public spending.

Chapter 10 “Austrian economic theory and the classical economic tradition” addresses the special role of Austrian economics, which, by placing entrepreneurship at the center of a market process of production, is arguably the most classical of contemporary schools of thought in economics. Nevertheless, although Kates notes that “Austrian economists to a large extent assume the whole of the classical supply-side understanding of the operation of a market economy” (p. 11) and that “[t]he Austrian theory of the cycle sits entirely within the classical framework” (p. 213), he also maintains that “[t]he Austrian tradition, especially given how it has evolved since the nineteenth century, is entirely different from the classical tradition in the English-speaking world” and, Kates says, “[t]his cannot be emphasized enough” (p. 208). This difference primarily rests on the Austrians’ focus on marginal utility, which Kates argues necessarily shifts economic theorizing away from the supply side.

Chapter 11 “An overview of classical economic theory” is a proper conclusion to the book’s argument. The three main perspectives in the book come together in an enlightening discussion on how classical economics understands the operations of an economy, the process of economic growth, and, importantly, the classical theory of the business cycle. This is also where the classical understanding gets to stand on its own, independently and without supports. Contrasted with the marginal and Keynesian revolutions, the classical framework is presented as a valid and relevant alternative despite its 150 years of obscurity.

This book is the natural conclusion and apex of Kates’s decades-long provocative research program intent on resurrecting

Say's Law and reviving the classical understanding of the economy. The work ties together and extends several of the arguments from the author's previous books and articles and does so in a readable and interesting format. Many of the arguments are well received and both interesting and thought-provoking. Kates goes well beyond his previous writings and takes several of the arguments to their logical conclusion.

Although the book is excellent, it is not entirely without flaws. Several of the points could have benefited from elaboration whereas others could have been stated more effectively. Some readers might find the indirect and elaborate "European" style of writing frustrating, especially if they are used to the "American" style.

In this reviewer's humble opinion, the only major weakness of the book is the chapter on Austrian economics. Kates uses too much space to discuss the politics of Austrian economists, which, because the chapter directly follows chapter 9's discussion on the role of government for classical economists, gives the impression that the critique is primarily political. But this is not the case. Kates's critique is based in the school's founding contribution to the marginal revolution. Because marginal analysis is based on marginal utility, the economic analysis necessarily moves from supply-side in the direction of demand-side reasoning. Therefore, Kates reasons, the Austrian school is complicit in the shift away from proper classical economics. The argument is interesting but would require more elaboration to be persuasive. It is not helped by the author's seeming urgency to side with Hayek against Mises while the actual discussion, at least in this reviewer's reading, appears to align more closely with Mises. But this is mostly a somewhat puzzling detail, which does not take away from the main argument.

*Classical Economic Theory and the Modern Economy* should be a welcome addition to the reading lists of both amateurs and professional economists, whether one's interest is in macroeconomics or the history of economic thought. Although the book is a worthwhile read on its own without familiarity with Kates's work, this reviewer believes it really shines when read as a sequel and conclusion to the author's previous contributions.

## BOOK REVIEW

# TRUST IN A POLARIZED AGE

KEVIN VALLIER

OXFORD: OXFORD UNIVERSITY PRESS, 2021, 310 + X PP.

DAVID GORDON\*

Kevin Vallier, who teaches philosophy at Bowling Green State University, is a leading advocate of “public reason liberalism,” and his latest book is a distinguished contribution to that school of thought. He has in his past work been substantially more favorable to the free market than most of his fellow public reason liberals, and that tendency continues in the book we have before us to examine. In what follows, I shall proceed in a somewhat unusual way, and Professor Vallier has good cause to complain against me, if so minded, for doing so. I shall first briefly explain his main project, which I have to say I do not accept; but after that, I shall concentrate on some points in the book of great merit, regardless of what one thinks of his variant of public reason.

Our author begins from a fact difficult to dispute. People in the United States do not trust their government, and partly in consequence do not trust one another, so much as they did in times long past. Vallier deplores this and aims in his proposals to remedy

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this situation, though he acknowledges that he cannot guarantee that what he suggests will accomplish this. He sets forward his main objective in this way:

*Social trust for the right reasons*: a society enjoys social trust for the right reasons when its social trust is grounded in adequate evidence available to every member that others are socially trustworthy because each is normally prepared to comply with moral rules from her own intelligible reasons. This is the central normative notion in the book. I want to establish that liberal rights help to generate trust for the right reasons. (p. 50, emphasis in original)

To establish this, Vallier makes empirical claims about what promotes trust, and normative claims about what should elicit trust; and in his arguments for his claims, he displays mastery of the specialized literature of philosophy and empirical political science. His path to his goal is intricate and involves many twists and turns, but these I shall leave to the reader, for one principal reason. Following Rothbard, and his predecessors Oppenheimer and Nock, I believe that the state is a predatory body that we ought not to trust, but rather to view with the severest suspicion. Vallier is well aware of this objection, and he proposes to mollify those of us who hold it by allowing us to “opt out” of state-provided services, in ways similar to accommodation offered the Amish and other religious groups.

Enough of my beliefs; let us now proceed to a few of the many excellent points to be found in the book. Vallier handles in exemplary fashion an objection to viewing property rights as constraints on the state. The objection is that “private property rights have a strong conventional component; they are necessarily the creation of political institutions. Consequently, property rights cannot provide a prepolitical restraint on the state, since they are not prepolitical.” (p. 113) Vallier answers with a devastating question: “how can we have a right to free speech against the government if the government (as the objection implies) is required to define and protect that right? Or how can we have a right to bodily protection if the government is required to define and protect *that* right?” (p. 114, emphasis in original)

Not content with one decisive objection, Vallier strikes another fatal blow:

The second problem with the conventionalist challenge is that it depends on ignoring the critical distinctions between moral rules, legal rules, and constitutional rules. It is certainly true that we can only keep property rights in existence by means of socially constructed rules. But *taxpayer-funded, legislative* rules are not required—property rules are often stable moral and legal rules that are in equilibrium due to factors other than the actions of nation-states. (p. 115, emphasis in original)

Some conventionalists shift the argument to history: even if some property rights now exist independently of legislative rules, didn't the state have first to create markets? Vallier's answer departs from the sober seriousness characteristic of the book and is not without a tinge of sarcasm: "the historical claim is, as far as I can tell, false. And so it cannot play a central role in determining the scope of property rights." (p. 128)

Thomas Piketty has argued, with spurious statistics, that capitalism tends inevitably to inequality, and his many blunders have been ably exposed by George Reisman, Phil Magness, Robert Murphy, and others. Not to be outdone, Vallier raises an objection to Piketty of his own:

One of the controversies raised by Thomas Piketty's well-known work on income inequality is that much of the inequality he documents can be explained by the differing values of the real estate held by the very rich and that owned by everyone else. If so, then reforming zoning laws to prevent them from creating artificial shortages of real estate should be an excellent way to reduce inequalities of wealth. Limiting zoning laws can also boost economic growth: a recent study finds that in 220 metro areas, zoning constraints on land use "lowered aggregate US growth by more than 50 percent from 1964 to 2009." That's staggering. (p. 176)

Growth is for Vallier a key concept, and for him it severely limits permissible restrictions on property rights. He writes,

Few today would dispute that a competitive marketplace, where firms are free to experiment with new methods of production that are then subjected to the withering scrutiny of millions of consumers, is a kind of golden goose. And it is a golden goose we can kill; command economies nearly killed it. When we back off pure capitalism, then, we must be mindful not to strangle the productive process. Even small costs to the growth rate have dramatic effects over time because of compounding growth rates. Without growth, we will lose enormous social goods not merely for the rich but also for the middle classes and the least advantaged. (p. 131)

Vallier draws the consequences of this vital point for restrictions on property rights.

The desirability of growth will not only strengthen the public justification of private property rights, it provides sufficient reason to reject restrictions on property rights. If property rights restrictions hurt economic growth that is broad-based—growth that benefits everyone—then many members of the public will have sufficient reason to reject these restrictions.... Even Marx acknowledged that capitalism is a fantastically productive economic system, despite the injustice and misery it can cause. So even socialists should recognize that capitalism has enormous productive potential.” (p. 132)

Our author introduces a vital concept that sharply limits the coercive regulations of the free market that he in theory allows. This is what he calls “policy epistemology”: because of the presumption in favor of the market, proposals for regulation must pass a high bar before they can even be considered. If experts disagree about the wisdom of a proposed regulation, we lack the required basis to upset market arrangements.

And one eminent expert very strongly disagreed. The Nobel laureate Ronald Coase

believes that some regulations might be beneficial, but in his attempt to summarize decades of research, he cannot recall a single instance where a regulation passed even the simplest cost-benefit test. Perhaps Coase is biased, but it would take a remarkable level of bias to lead him to claim falsely that he cannot recall *single case* of a regulation passing such tests.” (p.159, emphasis in original)

Vallier adds another point. “And remember the importance of securing economic growth. If some regulatory and public-goods programs undermine economic growth, that can serve as a defeater for those programs.” (p.162)

Kevin Vallier has written a book fully worthy of his eminent mentor Gerald Gaus, and readers willing to persist through this demanding book will learn a great deal. If I continue to prefer Rothbard to “public reason,” I trust that my old student will not hold this against me.

## BOOK REVIEW

# MONETARY POLICY AFTER THE GREAT RECESSION: THE ROLE OF INTEREST RATES

ARKADIUSZ SIERON

NEW YORK: ROUTLEDGE, 2020, XVIII + 230 PP.

NIKOLAY GERTCHEV\*

In his second book, Arkadiusz Sieron, Assistant Professor at the University of Wrocław, embarks on an ambitious task: to investigate the failure of expansionary monetary policy to address the challenges of the 2008–09 Great Recession. An introduction, seven chapters and a final synopsis make up the main body of a text that spreads over 168 pages. Two short six-page appendices comment upon the likely future course of monetary policy and on the fitness of interest-rate cuts to respond to the COVID-19 crisis. An impressive forty-page bibliography, or about six hundred references, and a ten-page index close the book.

The first chapter examines the conventional “interest rate” channel of monetary policy. Sieron shows that it was ineffective to spur economic growth after the Great Recession and attributes its

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unsuccessfulness to the failure of lower policy rates to revive bank credit. In his assessment, factors such as borrowers' debt overhang and lenders' impaired balance sheets explain why central banks, despite lowering their policy rate aggressively, could not fuel the credit expansion that would have revived the economy: "In other words, there is no mechanical link between monetary policy and the supply of loans *and thus* economic growth." (p. 22; our emphasis)

The second chapter focuses on the newer "portfolio" channel of quantitative easing. It offers a high-level theoretical discussion, rather than a detailed context-based presentation of the specific asset purchases by the major central banks. That discussion is focused on the wealth effect and concludes that, thanks to these non-conventional interventions, monetary policy remains potent despite the zero lower bound, even though its potency is limited to effects of redistribution: "Keynesians are wrong, while monetarists are right: monetary policy does not become totally powerless when interest rates reach the zero lower bound. It affects the economy through the relative prices of assets, goods, and services." (p. 39)

The next two chapters explore, in further detail, some of the consequences of expansionary monetary policy. The third chapter discusses how a low policy rate encourages risk-taking, because of the relatively higher monetary attractiveness of risky assets (search for yield) and a stronger tolerance for higher risk: "In normal times, risk is seen as something negative, and individuals try to avoid it if possible. However, in an environment of very low interest rates, risk becomes more desirable and worth seeking" (p. 60). The fourth chapter deals with the monetary policy-driven resource misallocation through the prism of the theory and empirics of "zombification."

In the remainder of the book, Sieron offers his ideas on the broader aspects of monetary policy. The fifth chapter argues that, when setting their policy rates, central banks should not target the economy's neutral interest rate. Their own actions lower that neutral rate, which makes the target endogenously dependent and hence never achievable. Within a Wicksell-inspired analytical framework, Sieron rejects the secular stagnation hypothesis and privileges the financial-drag assumption in explaining the post-crisis economic slowdown. He draws some normative implications:



So there is no such thing as a neutral-interest rate policy. The central banks should *thus* stop setting interest rates if they are unable to get them aligned with the *natural* interest rates and allow markets to freely set interest rates. Or, given that the *neutral* interest rate is endogenous to the monetary policy it is supposed to guide, it should not serve at least as a policy benchmark. (p. 110; our emphases)

The sixth chapter reviews the impact of the negative interest rates policies conducted by some central banks in recent years, particularly as regards reduced profitability of commercial banks and negative yields on government bonds. It concludes,

...there is a lack of satisfactory theory explaining how charging for the excess reserves of commercial banks held at central banks—some economists even call it “a tax on reserves”—is supposed to revive bank lending *and then* the overall economy. The banking system itself cannot decrease the amount of reserves through granting loans.” (p. 133; our emphasis).

The last, seventh, chapter documents and discusses the rise in overall indebtedness of corporations, households and governments. Particular emphasis is put on the self-reinforcing loop between indebtedness and expansionary monetary policy, leading to higher asset prices, which—because the assets are used as required collateral for loans—inflates creditworthiness and supports further indebtedness. The analysis points out that, beyond a certain level, debt accumulation becomes a drag on economic growth:

Used wisely and in moderation, it [debt] can improve welfare, but when used imprudently and in excess, the result can be disastrous. I showed that although an increase in household debt can reflect financial deepening, in an environment of ultralow interest rates it *may* rather indicate a build-up of financial imbalances. (p. 159; our emphasis)

This very sketchy overview can only hint at Sieron’s extremely ambitious project to expand economists’ understanding of interest rates and monetary policy. The result is a widely researched text that overwhelms the reader with a multitude of conceptual and bibliographical references. This makes it a useful collection of references for economists interested in contemporary monetary topics. Sieron is not shy about his achievement: “I am not aware of another book that would so thoroughly and completely analyse the issues related to the

interest rates in the conduct of monetary policy" (p. 3).<sup>1</sup> Regardless of any merits of that claim, it would have been preferable to let the readers and posterity indulge in the praising of this work.<sup>2</sup> Yet, such a statement only begs a few immediate questions. What type of approach does the analysis follow? Does it lead to rock-solid and original conclusions that build upon existing knowledge as part of a consistent analytical framework? In what sense is it thorough and complete?<sup>3</sup> The remainder of this review will quickly show some of the pitfalls of the approach Sieron has chosen to follow.

The best way to describe that approach is to call it *eclectic ecumenism*. The book clearly aims at reaching the largest possible audience. To achieve that, the author has made the choice to address all economists, whatever their foundational premises. In practice, this boils down to applying some Austrian insights to a large corpus of other intellectual universes. As a result, the reader will not find a fully established single theoretical framework of any intellectual affiliation. The following passage, which introduces a discussion on the implications of debt, is very revealing of the *eclectic ecumenism* approach:

Credit creation has been the basis of the Austrian business cycle theory since Mises's ([1912] 1953) *Theory of Money and Credit*. Fisher (1933) formulates a debt-deflation theory of the Great Depression. Minsky (1992) develops a financial-instability hypothesis according to which endogenously rising leverage in good times paves the way for crisis. Koo (2013) argues that a balance sheet recession and debt overhang [...]" (p. 144)

This compilation of different theoretical views, not always in mutual agreement, is characteristic of Sieron's entire book and

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<sup>1</sup> This is not an accidental statement: "The above points do not, of course, constitute the entirety of my contributions for the theory of economics. However, they clearly show that my analysis enriches the debate on the monetary transmission mechanism." (p. 164) Another example, among others: "However, I have greatly enriched the achievements of the Austrian school by applying its insights to the topics of zombie firms, negative interest rates, and neutral interest rates and by pointing out the importance of the risk structure of interest rates." (p. 165)

<sup>2</sup> One needs not study theology to know that humility is the path to truth.

<sup>3</sup> A deeper question would ask whether an analysis that is thorough in its method could ever be complete in its conclusions. Would not a complete analysis imply the end of the scientific endeavor, making pointless all further research?

results in a lack of consistency. This unfortunate outcome is not helpful to the author who wants to “argue that we should blame wrong economic theories and monetary policies based on them” for the slow recovery from the Great Recession. (p. 1) Would one not need a carefully crafted theory to refute other theories step-by-step? Moreover, because of the lack of consistent framework, his analysis leads to unsubstantiated and ultimately unsound conclusions, instead of providing convincing answers.

Take for instance Sieron’s analysis of the ineffective interest rate channel. The argument boils down to claiming that monetary policy fails to contribute to economic growth in downturns only, because—in the bust—some factors, such as borrowers’ deleveraging and lenders’ restructuring, make it ineffective to ensure a bank credit expansion: “The key is that many factors besides interest rates determine demand for loans. [...]. This suggests that monetary policy in general and low interest rates in particular work differently during normal times than during crises” (p. 16). This is not an accidental statement, as evidenced by the author’s conclusion that “The mortal sin of that [traditional] view is that it assumes that monetary policy works the same way all the time” (p. 21).<sup>4</sup> The obvious, though unspoken, implication is that monetary policy *works* in periods of economic expansion. What does this conditional effectiveness mean in reality? Does it imply that monetary policy can spur genuine economic growth, or does it only lead to unsustainable malinvestments that necessarily result into a future crisis? The reader will find no clear-cut answer to that crucial question, though Sieron’s text might lead him to believe that monetary policy contributes indeed to economic growth, arguably in a potentially distorted manner: “The legacy of the Great Recession is *excess capacity* in the world” (p. 80; our emphasis). The question is decisive because, if booms imply unavoidable crises, as argued by the Austrian business cycle theory, then it is no longer permissible to distinguish between two conceptually separate contexts (growth vs. recession) for analyzing the effects of monetary policy. Furthermore, if monetary expansion is the cause of the ultimate

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<sup>4</sup> Consider also: “I showed that monetary policy is weakened or does not work as intended during recession. This means that the effectiveness of monetary policy depends on the functioning of the economic system” (p. 25).

crisis and the following bust, how could it ever provide a solution to the latter too?

The complicated, yet important, discussion of the link between monetary policy and the *neutral* interest rate in the fifth chapter is another paramount example of the dangers of *eclectic ecumenism*. Sieron starts the discussion on promising grounds, rooted in a deep-dive clarification of what Wicksell meant by the *natural* interest rate (more on the distinction between the natural and neutral rates below) and how he saw the impact of its divergence from the current interest rate. Then, the urge to include all subsequent and contemporary views, outside of a solid analytical framework, without stopping to apply a solid theoretical lens, overtakes him. The discussion continues with a mention of the leading Neo-Keynesian monetary economist Michael Woodford, before pursuing with Austrian economists, including a lengthy quote from Hayek and references to Salerno (2016) and Garrison (2006). To pay full tribute to Sieron's effort at synthesis, it is worthwhile quoting a lengthy excerpt from his text (pp. 88–90):

Similarly, for Woodford (1999, 35), who revived the ideas of Wicksell and incorporated them into modern macroeconomic modelling, the key variable in the analysis of inflationary or deflationary pressures is “the gap between the current level of the ‘natural rate’ of interest and the interest rate controlled by the central bank.”<sup>5</sup> Indeed, in the standard new-Keynesian approach, monetary policy gradually moves the riskless short-term policy rate toward its natural-rate counterpart (Cukierman 2016).<sup>6</sup>

Austrian economists reject this approach. To be sure, they agree with Wicksell's observation that in a monetary economy, the market interest

<sup>5</sup> Compare this sentence with: “Woodford's analysis revives the ideas of Wicksell (1898, 1906) within a dynamic stochastic general equilibrium model. [...] In Woodford's framework, the key variable for the analysis of ‘inflationary’ or ‘deflationary’ pressures is ‘the gap between the current level of the “natural rate” of interest and the interest rate controlled by the central bank’ (Woodford, 1999a, p. 35)” (Neiss et al. 2001, p. 4). The authors of this 2001 discussion paper, published in *Macroeconomic Dynamics* in 2003, refer to a chapter of a 1999 manuscript by Woodford, which would become his magnum opus in 2003 only. Sieron's bibliography, despite its extensiveness and the 2003 reference to Woodford, omits both the 1999 item, referenced in the main text, and this 2001 discussion paper.

<sup>6</sup> Compare this sentence with: “In the standard NK model efficient monetary policy can be viewed as using the riskless short term policy rate to gradually move this rate toward its natural rate counterpart” (Cukierman 2016, p. 4).

rate may differ from the natural rate because the demand for and supply of capital meet in the form of money, the quantity of which is altered by the banking system. [...]

[...].

It is true that the Austrian business cycle theory draws from Wicksell, as the key element of the boom-bust cycle is the divergence of the monetary rate from the natural rate. However, Austrian economists interpret the neutral/natural rate differently. They write about the “natural rate,” rather than the “neutral rate.” This is because they have in mind the interest rate that would occur on the unhampered market without credit expansion, rather than the hypothetical rate that would equalize the demand for and supply of capital in kind and at the same time ensure price stability.

[...].

Meanwhile, the mainstream economists write rather about the neutral interest rate, and they consider it not as the real yield of capital in production but as the interest rate that is consistent with full employment of resources at a nonaccelerating inflation rate. This is why, according to Salerno (2016), the mainstream economists’ perspectives are actually drawn from Keynes’s work, not from Wicksell’s.

Indeed, in the *General Theory of Employment, Interest and Money* (1936, 242–23), Keynes rejected the usefulness of the Wicksellian natural rate. He argued that there might be a natural interest rate for each hypothetical level of employment so that the economy could be in equilibrium with less than full employment. Therefore, Keynes argues that the natural rate should be replaced by the “neutral” rate of interest, that is, the interest rate, which is consistent with full employment, or more technically the interest rate “which prevails in equilibrium where output and employment are such that the elasticity of employment as a whole is zero.”<sup>7</sup>

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<sup>7</sup> Compare the last two paragraphs with:

But if we look closely at the definition of the natural rate by Bernanke, Krugman et al., we find that it is really drawn from Keynes’s work and not from Wicksell’s. For it is simply the interest rate that is consistent with full employment of resources at a zero, or non-accelerating, inflation rate. Indeed, in *The General Theory of Employment, Interest, and Money* (pp. 242–43), Keynes explicitly rejected the Wicksellian natural rate as not being analytically “very useful or significant.” He went on to suggest that the natural rate be replaced by the concept of what he called the “neutral” or “optimum” rate of interest, which is the interest rate “which prevails in equilibrium where output and employment are such that the elasticity of employment as a whole is zero”—which is a clumsy and pretentious way of describing the state of full employment or what is in today’s jargon called “potential GDP.” So for Keynes and

This compilation of views, expressed in a language that bears a disturbing resemblance to the original referenced contributions, does not help the reader improve his understanding of the topic. Despite the abovementioned reference to Salerno (2016) and his lengthy eight-page similarly compiled critical analysis of the “problems with the neutral interest rates” (p. 90–97), Sieron gives the impression of having missed something. Salerno’s crucial argument is that, at any moment, a specific rate of return on capital emerges in the economy so that the entire structure of production can be maintained with the available savings as determined by society’s inter-temporal preferences. The Austrian economists take that rate of return for a (the) *natural interest rate*. Two real-world phenomena—intertemporal preferences and production—drive and determine it. Hence, the natural interest rate is a real market phenomenon brought about by actual human action. In a monetary market economy, the prevailing nominal interest rate is its best reflection and is as imperfect as all monetary prices and ratios are. Non-market-driven changes in the money supply imply specific distortions of that reflection, which are the study object of the (Austrian) business cycle theory. In an alternative, increasingly mainstream view, the neutral/natural *rate of interest* has no existence in reality. It is a model-determined benchmark rate of interest implied by the mathematical equilibrium conditions of solving the economy-approximating model, subject to further optimality or welfare requirements. Then, the task of monetary policy would be to align the real-world interest rate, through available and new policy instruments, with that benchmark interest rate to maximize social welfare.

These two conceptions are so far apart that any attempt to analyze one with the analytical tools of the other, without questioning its very foundations, is utterly inadequate. Such an approach could bring confusion only. Take for instance Sieron’s fifth issue with the neutral rate:

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his contemporary disciples the natural or neutral rate of interest is determined wholly in financial markets and is one of the main determinants of the level of investment spending and the real rate of return on investment. (Salerno 2016, 7<sup>th</sup> paragraph)

Notice that the text following “Indeed” is an integral part of Salerno’s original contribution. In Sieron’s text, that part is presented as Sieron’s own contribution.

Fifth, the *neutral* rate may be negative. This is actually the core of the zero-lower-bound problem. If the neutral rate is below zero, but the nominal policy rate cannot turn negative, policy makers assume policy is uncomfortably tight. Hence, the need for quantitative easing and other unconventional monetary policy tools. However, in the Austrian view, the *natural* interest rate cannot never [*sic*] be negative, as it would contradict the laws of economics" (p. 95; original emphasis).

The author, first, admits the possibility of a negative neutral rate of interest, to the point of using it as a rationale for unconventional monetary policy. Yet, he seems to struggle with that idea, as he hastily reminds the reader that a negative natural interest rate would be contradicting human action. Of what avail is it to refer to the Austrian natural interest rate when discussing the "mainstream" neutral (natural) rate of interest, which is essentially distinct? Sieron should have admitted that, under some specific assumptions, New-Keynesian models of the economy indeed deliver negative neutral (natural) rates of interest. The only scientifically valid observation would then be that this conclusion is as realistic as the underlying models and assumptions.<sup>8</sup>

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<sup>8</sup> The following statement introduces the critical section on "neutral interest rates": "The consensus in the modern macroeconomics is that the neutral rate of interest is an useful benchmark for the central banks in conducting their monetary policy and that tracking this rate would stabilise the output and inflation (Barsky et al. 2014)." This is, at best, an over-statement. If consensus there is among contemporary macroeconomists from very different intellectual traditions, it is to be found in the inflation-targeting framework. This framework shows that it is optimal—in the sense of minimizing a loss function based on price volatility, output gap, or other objectives—to set the policy interest rate at such a level that actual inflation, defined as a change in a consumer prices index, equals the central bank's own informed inflation forecast. The referenced strictly New-Keynesian contribution suggests that, *by not tracking* the natural rate of interest, central banks missed an opportunity: "

Thus, these findings suggest that a considerable degree of wage and price inflation stabilization *could also have been achieved if the Federal Reserve had effectively tracked the natural rate.* [...]. Abstracting for the time being from important considerations about the implementability of such a policy (Section IV), our findings suggest that tracking the natural rate *would have* stabilized the output and inefficient gaps as well as inflation in prices and wages. (Barsky et al. 2014, pp. 40–41; our emphases)

The call for central banks to track the neutral (natural) rate is the exact opposite of what Sieron's referenced reformulation implies. Notice also that the authors

To some extent, uneasiness permeates the next chapter that deals explicitly with negative interest rates. The case is indeed disturbing: why would one lend today more than what he would recover tomorrow? After pointing out several reasons for negative bond yields,<sup>9</sup> Sieron remains in doubt and makes this astonishing statement: “What is important is that *reported* negative yields *do not necessarily* mean that issuers of such bonds [with negative yields] *may* pay back less than they borrowed” (p. 131; our emphases). The argument seems to be that yields are not negative at origination, but might turn negative later due to increased demand from investors. This only begs the question why these late investors would buy bonds at prices that are above what they are promised to get in the future. Not to mention that today there are plenty of government bonds with negative yields *already at origination*, which implies that their issuers, indeed, are paying back less than what they borrow.<sup>10</sup> Rather than minimizing the relevance of negative bond yields, Sieron could have stated his position more assertively, for instance on the grounds of a more elaborate theory of government intervention.

The highlighted methodological shortcomings in Sieron’s otherwise rich book stem largely from his *eclectic ecumenism*. The wish to speak to, and please, all economists results in an inconsistent analytical framework that eventually blurs the essential distinction between natural market phenomena and government intervention. One of Sieron’s conclusions is the recommendation that “[...], they [central banks] should limit themselves to providing liquidity in times of crises. But they definitely should not suppress market interest rates, thereby impairing their allocation and signalling functions” (p. 165). How credible is it to believe that liquidity injected in a crisis, i.e. with the purpose to avoid asset

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themselves acknowledge several factors that, despite its model-proven theoretical superiority, make that policy rule impractical.

<sup>9</sup> These reasons include the flight to safety (safe haven demand), expected currency appreciation, loss of trust in the banking system, acquisition of a security to close a transaction, speculative demand and regulation of insurance companies and pension funds (pp. 130–31). Yet, the issue remains, at least as long as cash, which is a perfect substitute to securities in all these respects, does not bear a negative yield itself.

<sup>10</sup> The numerical example in an endnote reveals that Sieron is not aware of the premium at issuance, due to which despite positive coupons, the issuers indeed “pay back less than they borrowed.”



price deflation, would not be suppressing or otherwise distorting interest rates? Sieron's statements ultimately imply that contingent circumstances, time and place dependent, would determine the nature of the consequences from changes in the money supply. Does this not boil down, indeed, to questioning the very existence of economic laws, i.e. of causal relationships that are true always and everywhere?

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