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What Does Norway Get Out Of Its Oil Fund, if Not More Strategic Infrastructure Investment?

by

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ABSTRACT

For the past generation Norway has supplied Europe and other regions with oil, taking payment in euros or dollars. It then sends nearly all this foreign exchange abroad, sequestering its oil-export receipts—which are in foreign currency—in the "oil fund," to invest mainly in European and US stocks and bonds. The fund now exceeds $500 billion, second in the world to that of Abu Dhabi.

It is claimed that treating these savings as a mutual fund invested in a wide array of US, European, and other stocks and bonds (and now real estate) avoids domestic inflation that would result from spending more than 4 percent of the returns to this fund at home. But the experience of sovereign wealth funds in China, Singapore, and other countries has been that investing in domestic infrastructure serves to lower the cost of living and doing business, making the domestic economy more competitive, not less.

This paper cites the debate that extends from US 19th-century institutional doctrine to the approach of long-time Russian Chamber of Commerce and Industry President Yevgeny Primakov to illustrate the logic behind spending central bank and other sovereign foreign-exchange returns on modernizing and upgrading the domestic economy rather than simply recycling the earnings to US and European financial markets in what looks like an increasingly risky economic environment, as these economies confront debt deflation and increasing fiscal tightness.

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For the past generation Norway has supplied Europe and other regions with oil, taking payment in euros or dollars. It then sends nearly all this foreign exchange abroad, sequestering its oil-export receipts—which are in foreign currency—in the "oil fund," to invest mainly in European and US stocks and bonds. The fund now exceeds $500+ billion, second in the world to that of Abu Dhabi.[1]

What do Norwegians get out of these financial savings, besides a modest interest and dividend yield? The export surplus is said to be too large to spend more than a small fraction (a Procrustean 4 percent) at home without causing inflation. As an excuse for placing its export savings merely in the way that a middle-class family would do—buying an assortment of foreign stocks and bonds—the oil fund's managers conjure up images of squandering spending on projects such as Dubai's trophy skyscrapers and luxury real estate sinkholes.

So foreigners get not only Norway's oil, but also most of the royalties and earnings from its production. Along with OPEC oil funds, the volume of these natural resource royalties is so large that they are largely responsible for supporting stock market prices in Europe and the United States (along with pension fund inflows). Meanwhile, Norway spends little on itself. Even now that its financial managers are beginning to worry about how risky the stock markets are becoming (having lost money in a number of recent years) and feel the need to diversify into real estate, they still warn against investing the oil fund's wealth to build up the domestic economy.

What seems ironic is that while Norway is sending its savings mainly to European and US financial markets, money managers in these countries are sending their funds to the BRIC economies (Brazil, Russia, India, and China). These are the nations whose governments are investing their trade surpluses most actively to raise their educational levels, productivity and living standards, and to upgrade their infrastructure, especially their transportation. This in turn has raised the land's site value, spurring construction and widespread prosperity—while the US and European economies are entering what looks like an extended period of austerity.

While investing at home to improve their quality of life, China, Singapore, and other nations manage their sovereign wealth funds with an eye to shaping their

[1] For a ranking and evaluation of the world's sovereign wealth funds, see http://www.swfinstitute.org/

economies for the next twenty, thirty, or even fifty years. They are buying control of the key foreign technologies and raw materials deemed most critical to their long-term growth. This broad scope invests export earnings directly to make their economies more competitive while raising living standards.

This frame of reference goes beyond the purely financial scope of deciding simply what foreign stocks and bonds to buy, or what real estate to take a risk on. It shows that finance is too important to be left to financial managers. Their point of reference is not how to develop an economy over time. It is how to make money financially—and the financial frame of reference is the short run. The basic question is which securities will yield the highest rate of return or rise most quickly in price. This is a short-term decision, given the increasingly frenetic ebb and flow of today's financial markets.

The financial vantage point also is indirect: stocks, bonds, and bank loans are claims *on* the economy's assets and income, not tangible wealth itself. That is what makes financial markets so risky—especially today, when almost-free US credit enables banks and hedge funds to use debt leveraging to bid up prices for stocks, bonds, and foreign currencies. Norway's oil fund has tried to minimize risk by "spreading it around," buying small proportions of companies rather than direct control. But when stock or bond markets become debt burdened and shaky, spreading the risk does not diminish it.

The result is like trying to buy milk from a broad scattering of farms around Chernobyl so as to avoid radiation poisoning. This may *distribute* the risk more broadly, but has little effect on *minimizing* it. What many Norwegian financial managers view as spreading the risk over a wide spectrum of foreign stocks and bonds therefore merely distributes it more evenly across the board—in what today is an increasingly risky global environment.

The major financial risk today is that real estate, governments, and companies went so deeply into debt during the Bubble Economy years that they now are suffering negative equity. Central banks have sought to reinflate asset prices by lowering interest rates. Flooding the financial markets with credit has lowered returns so much that money management fees absorb a large share of Norway's modest oil fund returns. And it is only natural for financial and real estate brokers to applaud the idea that it would be inflationary for Norway to do what the most successful growth economies are doing—using its export earnings to benefit its own economy in decades to come by buying direct control of global resources.

Norway has produced and exported millions of tons of oil and employed a substantial portion of its labor force to build up its oil fund. This oil often is treated as a "gift of nature," but entire towns have been involved in the construction of oil platforms and related capital infrastructure that has made Norway a world leader in deep-sea drilling. So the oil fund is a product of labor and industry as well as nature. Understandably, many Norwegians are asking what their economy should get out of all this resource depletion, and labor and capital investment to extract and ship North Sea oil. As matters stand, foreign countries not only have Norway's oil, their financial markets also have received its $500+ billion in savings as a capital inflow

These savings have helped pump up US and European stock and bond prices, and are now being used to help revive their real estate markets as well. In fact, it is largely the sovereign wealth funds of Norway and other oil exporters—along with pension funds throughout the world—that have bid up stock and bond prices over the past few decades.

Little of this financial churning adds to the real capital stock of economies. The financial sector has become decoupled from tangible capital formation; most of the net stock purchases are from financial managers exercising their stock options and venture capitalists "cashing out." When these institutional buyers begin to sell, the outflow of funds may lower prices—and markets always plunge downward much more rapidly than they rise.

Given this situation, how should Norway best maneuver?

For starters, its government has a broader option than merely to steer savings into foreign financial markets. It enjoys sufficient scale to use its savings—and domestic credit creation—to improve the economy by creating tangible means of production to raise productivity. Using the experience of other sovereign wealth funds as an object lesson, Norway may ask how its approach compares with that of China, Singapore, and other countries that are using their enormous financial savings strategically and diplomatically?

Rather than investing in foreign financial markets—which today are staggering under their debt load—sovereign wealth funds in Asia are looking at the long-term national interest. Working in tandem with leading industries, they draw up long-term plans to forecast what raw materials and technology their economies may need. They then take a direct ownership position rather than scattering their savings over a cafeteria selection of stocks and bonds.

This kind of long-term planning is how the world's leading economies grew rich: Britain in its mercantilist epoch, the United States in its protectionist industrial takeoff after 1861, and state-led Germany after 1879. Business was nurtured largely by government contracts, infrastructure spending, and subsidies. And rather than being inflationary, public investment enabled economies to minimize their cost of living and doing business.

Countries that are passive let markets be shaped by nations that manage their economies with a view toward maximizing their own national welfare and future. British, French, and Dutch mercantilism viewed government planning as aiming to maximize social well-being over time, whereas financial planning aims merely to make money—as easily and quickly as possible. Norway's oil fund is managed mainly in financial terms, not one of broad forward planning for economic development. The problem with this approach is that in today's world this financial drive takes the form of debt-leveraging—loading down economies with debt, and ending by stripping assets as public regulation is loosened, and asset-price inflation is applauded as veritable "wealth creation."

I. SHOULD SOVEREIGN WEALTH FUNDS AIM AT BUILDING FINANCIAL OR TANGIBLE "REAL" WEALTH?

There are two approaches to how governments may manage their sovereign wealth funds. For simplicity, these can be called the passive and active approaches. The present approach is passive, inasmuch as it works within the existing economic structures and the financial time frame is inherently short term in scope. Norway consigns its oil earnings to money managers to invest to buy stock or bond ownership abroad without linking these purchases to its own future development, except by receiving a modest foreign exchange return. Norwegians meanwhile are selling off ownership of domestic mines and other natural resources as well as new technology, bringing in yet more foreign exchange on top of its oil exports. Most notably, it is selling these resources to nations that are seeking to dispose of their own surplus dollars and euros like an unwanted hot potato.

The more active approach sees the government’s duty as being to develop the domestic economy to benefit its inhabitants. This is done by building up infrastructure, including education and public healthcare, research and development, and investment in transportation, power generation and distribution, communications, and information technology.

The scope is global. China and Singapore, for example, start by asking what their economies will need over the next half-century to upgrade their productivity, technology, educational levels, and living standards. The aim is to improve their competitive advantage, not accept present conditions as a “given.” Toward this end they are investing in resources and technology that future generations will need to control. China has bought majority ownership of mineral resources (including silica mines in Norway and Iceland). In the financial sphere, it has bought into the partnerships of major US hedge funds. Singapore’s Central Provident Fund, TEMASEK, invests in Australia and neighboring countries, and Singapore Power controls Australian power systems.

How “Free” Central Bank Credit Dilutes the Flow of Actual New Savings

Just as Norway’s climate is threatened by global warming caused by carbon pollution, so its savings (and those of other countries as well) are threatened by free credit and debt pollution as the financial climate has changed radically from when the oil fund was established in 1990. Having built up this fund to over $500 billion mainly by adding new export revenues each year, Norwegians naturally think of it as the product of oil and gas sales and the efforts of the thousands of workers employed in the oil sector over the past fifteen years or so. But an even larger sum of $600 billion recently was created simply on computer keyboards electronically, by the US Federal Reserve

Board as part of Chairman Ben Bernanke's Quantitative Easing (QE2) policy. This liquidity was provided to banks at only 0.25 percent—one-quarter of 1 percent. Its aim was to enable US banks to earn their way out of the losses suffered from their bad mortgage loans and other gambles during the 2001–08 bubble.

Why go to the effort of working and saving, when you can borrow at so low a cost? One no longer needs to save in order to invest. A speculator or corporate raider can go to a bank and ask it for a loan to bet on which way interest rates, exchange rates, and bond or stock prices will move. The bank credits the customer's account, in exchange for an IOU. (So loans create deposits, not the other way around.) This credit creation reduces Norway's oil fund savings to the same plane as the bank credit now flooding the world in search of investment opportunities.

This speculation is distorting the global economy. The flood of low-cost central bank liquidity enables banks and their customers to borrow against any asset yielding a higher rate of return, from computerized short-term arbitrage, options, and swaps, or to take over entire companies. The logical end of this tendency is to capitalize the entire economic surplus—corporate cash flow and disposable personal income over and above basic subsistence levels—into bank loans, paying it out as interest.

This debt-leveraged speculation leaves no retained earnings to invest in capital renewal or new research and development, and therefore threatens to crowd out tangible capital investment. The financial road ends by grinding economies to a halt—and leaving governments with no more taxing power to pay for infrastructure or social spending. This is the point toward which today's financial system is moving. At the point where the financial sector succeeds in loading down an economy with debt, the economy collapses—as the Baltics have done, and as Third World countries did for many years as a result of IMF austerity programs.

The moral is that the world's banks and their clients want the same thing that Norway's oil fund wants: to make a financial gain. But they are doing the opposite of what it is doing. Rather than putting their money into the US or European stock markets, they are moving the Federal Reserve's $600 billion of QE2 liquidity abroad, to the BRIC countries and raw materials exporters (such as Australia) offering high interest rates and prospects for capital gains—economies not yet as highly debt-leveraged as the US and European financial core. But given the fact that this free credit creation is what inflated the recent bubble, one may well question how long it can continue.[2] For Norway, choosing to save financially means choosing between putting its money in financial markets that seem doomed to enter the "Ponzi" phase of the financial cycle—or spend its savings on its own domestic economy in a more tangible way.

Why the Financial Core Encourages "Passive" Savings Policies Abroad

It is neither natural nor inevitable for nations to recycle their savings into the US and European financial markets. When OPEC oil funds were first formed in the 1970s, this financial practice was a response to US arm-twisting on OPEC rulers to recycle their export earnings back to the US economy, in ways that did not involve taking direct control of companies, technologies, or productive resources. So OPEC countries simply bought stocks, relinquishing control over how the recipients of these savings spend the money. To the extent that they accumulate large sovereign wealth funds, they are to act as retail investors do—leaving control in US or Western European corporate offices and government agencies.

This policy was explained to me in 1974, when Herman Kahn and I visited the White House to discuss US international strategy in the wake of OPEC's quadrupling of its oil price after the United States quadrupled its grain prices. Jack Bennett, Under-Secretary of the Treasury for Monetary Affairs, was the point man on this issue. I had known him in 1965–66 when he was treasurer of Standard Oil of New Jersey (now renamed Exxon), and taught me much of what I know about the oil industry's balance of payments and the organization of offshore banking centers and "flags of convenience," when I was working at Chase Manhattan writing a statistical analysis of the oil industry's balance-of-payments impact. Now, a decade later on my 1974 visit, Mr. Bennett

[2] This new credit and debt creation raises the cost of doing business for two reasons: higher interest and amortization charges on debts that are kept on the books, and higher taxes paid by the "real" economy. This leaves less wage and profit income to be spent on goods and services. And when the financial expansion reaches its destructive end, governments are told to raise taxes to pay interest charges on the new public debt created to bail out the banks for the loans gone bad. Leaving them on the books rather than wiping them out subjects indebted economies to financial austerity and debt deflation.

explained that the Treasury had told Saudi Arabia and other OPEC countries that as sovereign nations they could of course charge what they wanted for oil (thereby creating a high price umbrella for domestic US producers to reap resource rents)—as long as they recycled their funds to the United States. As would be the case with Japan in the late 1980s, they were to invest passively, by buying shares on the stock exchange, not buying America's commanding heights comparable to what US and British investors owned in the Oil Gulf. Not to do that, he explained, would be treated as an act of war. (Later, one Saudi prince announced that he had bought one million shares of every stock in the Dow Jones Industrial Average.)

Other oil states have followed suit, headed by Abu Dhabi, which holds the only sovereign wealth fund larger than Norway's. The result of recycling of oil earnings into a broad selection of shares enriches the financial and real estate sectors of the world's core financial economies (the United States and Britain, followed by Germany and France) more than the "real" economy.

Today's Global Debate over How Best to Use Sovereign Wealth Funds

In the United States, Alaska and Wyoming pay their residents a "citizens' dividend" out of their resource rent receipts. Alaska's Senators Stevens and Murkowski, as well as its Governor Sarah Palin, did not believe that it is proper for government to upgrade, educate, and provide the population with social services. So Alaska has used its oil revenue to pay each resident a few thousand dollars—and to abolish property taxes. This policy leaves Alaska among the lowest-ranking states in terms of literacy, education, support for the arts and technology, while avoiding progressive taxation.[3] The state's neoliberal anti-tax, anti-government ideology condemns its residents to send their children out to work rather than educating them and investing in their improvement.

The Arab oil-exporting states and also Alberta, Canada, follow a similar investment strategy to that of Norway, treating their oil savings in the way that a small family would do. Alberta's web site explains the Fund's recent neoliberal shift in investment philosophy:

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[3] For a description of Alaska's sovereign wealth fund and its investment policy see http://www.institutionalinvestor.com/asset_management/Articles/2658908/Jeffrey-Scott-Forges-Trail-for-Alaskas-Sovereign-Wealth-Fund.html?p=1.

> In 1976, the government of Peter Lougheed established the Alberta Heritage Savings Trust Fund to finance economic diversification and cultural and social development in the province. During its early years, the fund received a portion of the province's annual oil and gas royalty revenue. By 1987, the fund peaked at nearly $13 billion. Thereafter, it slowly declined under the impact of major spending commitments, including mega-projects such as Syncrude and Kananaskis Country, seed money for innovative small enterprises, and funding for the Alberta Heritage Foundation for Medical Research and the Alberta Heritage Scholarship Fund. Albertans' attachment to the implicit economic security of the fund blocked a plan to dissolve it and pay down the provincial debt during the fiscal crisis of the mid-1990s. While critics have pointed to questionable investment strategies, the fund has achieved most of the realizable goals set for it.[4]

An ambitious initial plan was undone by later neoliberal governments; at least Alberta saved and invested its rent revenue rather than paying it out to its residents. But few oil exporters do what governments in the leading Western economies have done: transform their society by putting in place technology to enable future generations to be self-supporting rather than live as *rentiers*.

Russia is another case in point. Explaining why he opposed "the fetishization of the Stabilization Fund—our beloved 'piggy bank,'" former Russian Premier Yevgeny Primakov (currently the head of Russia's Chamber of Commerce) said in a 2009 interview that the aim was to release the money for primary needs. "Money needs to be spent inside the country." So Russia's Stabilization Fund was divided into the Reserve Fund and the Fund for Well-Being, which "was to be used to develop the economy and for social needs."[5]

But Russia was persuaded to follow neoliberal advice not to invest in upgrading its industry, and long refused "to inject the capital being built up into the real economy." Instead of using the money "inside the country to diversify the economy," Russia spent its foreign exchange earnings on US Treasury bonds. As a

[4] http://www.answers.com/topic/alberta-heritage-fund#ixzz1DsXx2640. The report of Alberta's Heritage Fund provides more information: http://www.finance.alberta.ca/business/ahstf/annual-reports/2010/report.pdf.
[5] "Former Premier Primakov on Global Crisis, Effects in Russia, Stabilization Fund," *Izvestia*, May 8, 2009, translated in Johnson's Russia List, May 8, 2009.

result, Mr. Primakov warned, “Russia will most likely come out of the recession in the second echelon—after the developed countries.”

The excuse for this economic negligence, Mr. Primakov noted, was a neoliberal “fear of inflation,” above all the fear that wage levels and living standards would rise—as if this were a bad thing! “They said that inflation would soar if what had been built up began to be spent. At one of the representative conferences, I asked: ‘What kind of inflation can there be in building roads? The work would just spur on production of concrete, cement, and metal...’ But our financial experts have a monetarist view of inflation. They are afraid of releasing an additional money supply into circulation.” The problem, he concluded, was that “If the ministries are given the assignment of reducing expenditures at their discretion, the first thing they sacrifice is scientific research and experimental design development. However, research and development should be classified as protected articles of any budget.”

What Mr. Primakov is criticizing is the same logic that Prime Minister Jens Stoltenberg uses to claim that Norway should “build up reserves” for bad times to come.[6] To import capital goods or technology, he warned, would involve inflationary domestic spending—which would make Norway less competitive, threatening its long-term employment. The Norges bank, statistical bureau (*Statistisk sentralbyrå*), and leading academics have made this assertion so often over the past decade that advocates of spending oil export revenues to upgrade the domestic economy are dismissed as populist inflationists almost as a knee-jerk reaction here.

It is a bankers’-eye view of the world, not that by which Britain, France, Germany, and the United States built themselves up to global leadership positions. The focus is on financial returns, not on lowering the cost of living and production or upgrading the quality of work. It views government spending as deadweight cost, not as productive investment. It is as if the logic of Mr. Primakov and other foreign leaders going back a century did not have a valid point in seeking to raise national productivity by importing technology and obtaining key strategic foreign resources. Yet their logic is what powered the United States, Germany, and other leading economies to their position of world leadership in the 19th and early 20th century. It deserves a closer examination than the

[6] In a feature article in the DN (*Businesslife Daily*), March 5, 2011.

quick dismissal with which it is greeted by Norway's financial planners.

The Logic of Public Investment Is to Upgrade Economies and Make Them More Competitive

Nations that today have the highest incomes recognize that rising productivity should enable costs and prices to fall—and that public investment is needed for this to occur. US development strategy was based explicitly on public infrastructure investment and education. The aim was not to make a profit or use its natural monopoly position to extract economic rent like a private company would do. It was to subsidize the cost of living and doing business—to make the economy more efficient, lower-cost, and ultimately more fulfilling to live and work in.

At issue is the idea that capital investment is inherently private in character. The national income and product accounts do not recognize government investment even in infrastructure, to say nothing of subsidies for the research and development that led to much space and aeronautics technology, information-processing and the internet, pharmaceuticals, DNA biology, and other sectors that enabled private companies to make hundreds of billions of dollars.

Simon Patten, the first professor of economics at the nation's first business school—the Wharton School at the University of Pennsylvania—explained that the return to public investment should not take the form of maximizing user fees. The aim was not to make a profit, but just the reverse: unlike military levies (a pure burden to taxpayers), "in an industrial society the object of taxation is to increase industrial prosperity" (Patten 1924)[7] by lowering the cost of doing business, thus making the economy more competitive. Market transactions meanwhile would be regulated to keep prices in line with actual production costs so as to prevent financial operators from extracting "fictitious" watered costs—what the classical economists defined as unearned income ("economic rent").

The US government increased prosperity by infrastructure investment in canals and railroads, a postal service, and public education as a "fourth" factor of production alongside

[7] European governments developed their tax policy "at a time when the state was a mere military organization." Such states had a "passive" economic development policy, and their tax philosophy was "based upon moral or political ideals," not economic efficiency.

labor, land, and capital. Taxes would be "burdenless," Patten explained, if invested in public investment in internal improvements, headed by transportation infrastructure. "The Erie Canal keeps down railroad rates, and takes from local producers in the East their rent of situation. Notice, for example, the fall in the price of [upstate New York] farms through western competition" making low-priced crops available from the West (Patten 1924).[8] Likewise, public urban transport would minimize property prices (and hence economic rents) in the center of cities relative to their outlying periphery.

Under a regime of "burdenless taxation" the return on public investment would aim at lowering the economy's overall price structure to "promote general prosperity." This meant that governments should operate natural monopolies directly, or at least regulate them. "Parks, sewers, and schools improve the health and intelligence of all classes of producers, and thus enable them to produce more cheaply, and to compete more successfully in other markets." Patten concluded: "If the courts, post office, parks, gas and water works, street, river and harbor improvements, and other public works do not increase the prosperity of society they should not be conducted by the State. Like all private enterprises they should yield a surplus" for the overall economy, but not be treated as what today is called a profit center (Patten 1924).

Public infrastructure represents the largest capital expenditure in almost every country, yet little trace of its economic role appears in today's national income and product accounts. Free market ideology treats public spending as deadweight, and counts infrastructure spending as part of the deficit, not as productive capital investment. The only returns recognized are user fees, not what is saved from private operators incurring interest charges, dividends, other financial fees, as well as high executive salaries.

As Patten showed, the relatively narrow scope of "free market" marginal productivity models applies only to private-sector industrial investment, not to public investment. (What would the "product" be?) The virtue of this line of analysis is to point out that the alternative is to promote a *rentier* "tollbooth" economy enabling

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[8] Stated the other way around, transportation facilities would increase outlying land prices along the routes. London's recent Tube extension along the Jubilee Line, for example, inspired a discussion about whether underground and bus transport can be financed publicly by taxing the higher rental value created for sites along such routes. Paying for capital investment out of such tax levies could provide transportation at subsidized prices, minimizing a major element of the economy's cost structure.

private owners of infrastructure or other monopolies to charge more than the "marginal product" actually costs. Stock and bond markets increasingly aim at extracting economic rent rather than earning profits by investing in tangible capital formation to employ labor to increase output, not to speak of rising living standards.

Norway's leading economists half a century ago held views quite similar to that of Patten. They viewed national savings in the context of the overall "real" economy. The Oslo [Credit] Channel Model of 1969, Nobel Laureate Ragnar Frisch, for instance, urged a qualitative approach to credit rather than treating savings and investment as homogeneous aggregates:

> In a decision model it is absolutely inadequate to consider 'investment' as some sort of aggregated figure (perhaps to be compared with some other aggregated figure such as 'saving'). … One of the most crucial aspects in a truly decisional analysis of the national economy is precisely to find out what sorts of investments to make. ... A comparison between different categories of investment must, therefore, stand in the center of the analysis.[9] (Frisch 1962)

The conclusion is that "saving for one singular individual and for society as a whole are two completely different things. They should really not be denominated with the same term, it is looks confusing. ... It is only by a productive arrangement that society as a whole can implement saving" (Frisch 1947).

A subsequent Nobel Laureate (1989), Trygve Haavelmo, recalled the logic of Patten in describing the aim of public investment as being different from that of individuals or business. The ultimate aim was not to seek profits, but to create the best economic and social system possible with the resources at hand:

> I believe that econometrics can be useful. But… existing economic theories are not good enough. We start by studying the behavior of the individual… We then try to construct a model of the economic society in its totality by a so-called process of aggregation. I now think that this is actually beginning at the wrong end.[10] (Haavelmo 1990)

[9] See also Frisch (1934). Frisch was the first editor of *Econometrica*, and took the initiative in founding the Econometric Society in 1930.
[10] I am indebted for these three citations to Aron Mond Daastoel (2011), appendix 4 and "Introduction,"

National income and product accounts throughout the world suffer from an ideological distortion in failing to recognize public capital investment, on the logic that it does not normally make a profit. Tangible investment in the means of production is recognized only for the private sector. This approach misses the logic that has guided public capital investment for at least the past five thousand years: the primary function of public infrastructure investment is different from private-sector investment—namely, to subsidize the economy and make it more competitive. Economies that privatize their public sectors tend to be high cost as a result of interest and other financial charges, high executive salaries, stock options, and other pseudo-costs that add to the price of providing infrastructure services on a profit (and indeed, rent-extracting) basis.

The problem is that today's financial markets are not creating new means of production. The financial time frame is short term, and it is easier to "make money" by stripping assets and squeezing labor with austerity than to invest in tangible production and employment. So contrary to expectations half a century ago, financialization today is going hand in hand with deindustrialization. Not only are Norway's savings being financialized, they are being financialized to inflate foreign stock and bond markets—and now Britain's luxury real estate market as well.

II. IS IT TIME TO DISINVEST IN THE FINANCIAL MARKETS AND REAL ESTATE?

Will Norway use its oil fund to promote its own economic development, or will it continue to put its savings into US and European financial markets in hope that their central banks may reinflate stock and bond prices? If the latter path is chosen, how reasonable is it to hope that stocks and bonds will rise in price even as the world economy slows down? In fact, is putting money abroad really less risky and more productive than investing it at home? And what of the alternative of buying full control of Nordic enterprises that may dovetail into Norwegian industrial strategy? Is there in fact such a strategy—and if not, *should* there be one?

Prime Minister Stoltenberg defends the Fund's policy "spreading the risk" over

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respectively.

a broad array of minority positions. As former Minister of Finance he was a main architect of the oil fund's " budget rule" of not spending more than 4 percent each year on Norway's domestic economy—and the other 96 percent abroad! He explains that his aim of investing in a large "mutual fund" type of portfolio is to spread the risk over a multitude of minority positions (Stoltenberg 2011). This rules out a more active forward planning to concentrate investments in strategic resources. He claims that a more active industrial strategy to concentrate investment in key resources and technology would increase the financial risk. In a similar vein, a Finance Minister official claims that future risks are reflected in today's stock prices. The market is said to reflect the present state of information so as to have discounted risk at any given moment in time. This is the claim of the Chicago School's now notorious (one would think) "efficient market" hypothesis. The market is supposed to be all knowing. The inference is that rather than helping domestic Norwegian industry, spending more of the oil fund's foreign exchange savings at home would be inflationary and thus would impair Norwegian competitiveness (Singaas 2011).

If markets really were efficient and with minimum risk, why do they plunge so sharply? Why were almost three-quarters of subprime mortgages found to be fraudulent in statistical tests? Why has Wall Street had so many civil fraud settlements running into the hundreds of billions of dollars? If the financial cycle is lapsing into what Hyman Minsky called the Ponzi phase (in which banks lend their customers the credit to keep current on their interest charges), are the system's managers all knowing in loading down economies inexorably with more debt—and trying to revive the Bubble Economy's financial price gains at least back up to past levels?

These arguments have a touching faith that European and American financial managers can avoid the present debt overhead from stifling their financial and real estate markets. Bernie Madoff's victims certainly were not omniscient, nor were the banks in Iceland, Ireland, and Latvia—to say nothing of their ostensible regulatory agencies. Contrary to the "efficient market" hypothesis (the "What, Me Worry?" approach), flow stock and bond prices reflect primarily the supply of credit—often recklessly abundant. The US Federal Reserve's QE2 and Wall Street's "Plunge Protection Team" has pumped in hundreds of billions of free dollar credit to overcome gullible financial overindulgence. Markets do not have to be all knowing to make money. What is needed is simply to have the central bank turn on the credit spigot. But by flooding the economy with credit (that is, with debt), this policy ultimately is self-destructive. That is why markets plunged after autumn 2008. Financial power became blind. To assume that it ("the market") is "all-knowing" and "efficient" is a travesty of economic reality and the flow of funds.

This is what now places Norway's oil fund in jeopardy. The dynamics that have fueled the 30-year stock and bond run-up since 1980 (and especially since 1990) are nearing their terminal stage. Economies have become much more highly debt-leveraged, without using credit to put in place the means to pay it off. It was the exponential rise in credit that fueled asset-price inflation, enabling debtors to "borrow the interest" by pledging their "capital" gains to take out ever-rising loans—without actual income keeping pace. Today, sovereign wealth funds are banking on a renewed rise in financial asset prices. But this can be achieved only by loading down economies with even more debt overhead.

This is in fact the aim of US Federal Reserve Chairman Ben Bernanke and Treasury Secretary Tim Geithner: to rescue banks from their negative equity by reinflating real estate, stock, and bond markets so as to enable banks, homeowners, and real estate investors to "earn their way out of debt" by higher asset prices.

This is not the kind of environment that created the half-century of stock and bond market run-up after World War II ended. That world is over, given the debt corner into which the bond market, real estate, and stock market have painted themselves. How can stock and bond prices rise at their former pace in the face of economies buckling under their debt overhead? Families and companies, cities and states, and even national governments from Iceland and Latvia to Ireland and Greece find themselves obliged to pay down debts by diverting their spending away from the purchase of goods and services, new investment, employment, and consumption.

Bond prices cannot rise further because interest rates have fallen nearly to zero. From the time interest rates peaked at 20 percent in 1980 through today's rates of less than 1 percent—the largest decline in interest rates ever recorded—the US and foreign bond markets experienced the greatest boom of any bond market in history. But there is no further room to decline. And as for high-yield bonds of governments on the brink of fiscal crisis, it is difficult to see how current risks can be averted, headed by US state and local debt and that of debt-strapped European countries.

Real estate accounts for 80 percent of bank loans in most English-speaking countries, and is by far the largest asset category. Investors enjoyed nearly three decades of being able to borrow to buy properties whose price was being inflated faster than the rate of interest that had to be paid. Falling interest rates and easier lending terms fueled capital gains. Consumers refinanced their mortgages at higher debt levels to support living standards that their take-home pay was not sustaining, as real wages have not increased since 1979 in the United States.

But since 2008, real estate markets have plunged, leaving a quarter of US real estate in negative equity, with declines of 70 percent in the Baltics and Iceland. These market-price declines have prompted banks to tighten their lending terms to require higher down payments, shorter amortization periods, and—most devastating—honest appraisals and truthful reports on the borrower's ability to pay. Without "liar's loans," crooked property appraisals, and NINJA lending (no income, no job, no assets), where is new credit to come from to bid up housing prices, especially as the overall economy is shrinking?

Stock markets no longer serve primarily as a vehicle to raise funds for tangible investment. Instead of expanding production by industrial engineering, "financial engineering" is a tactic of debt pyramiding (and in due course, fictitious statistical reporting, Enron-style). Corporate raiders and ambitious financial empire-builders use high-interest "junk" bonds to buy up other firms and "take companies private" by debt-leveraged buyouts (LBOs). Financial managers of these firms have run up corporate debt increasingly to finance stock buy-backs and simply to pay out as dividends to "engineer" price gains (and hence the value of their stock options).

In short, the stock market no longer performs the functions that textbooks describe. The stock market has become a vehicle to replace equity with debt. A much larger value of stocks have been retired than issued over the past three decades. Of the stocks that remain in the market, corporate managers and venture capitalists on balance have sold their holdings to pension funds and mutual funds—and to sovereign wealth funds.

When Peter Drucker coined the term “pension-fund socialism” half a century ago, he expected the stock market to mediate the inflow of pension savings to finance new investment and hiring to expand the economy. But by becoming a vehicle for corporate raiding and takeovers, the stock market has been loading companies down with so much debt that many are now threatening bankruptcy—ironically, as a way to wipe out their pension obligations, thereby leaving more for the larger creditors to carve up.[11]

The result is that the industrial sector is using debt creation in a predatory way. And there is growing awareness that the recent financial crises of Iceland, Ireland, and Greece are not anomalies but the result of neoliberal tax ideology and central bank policy that steers savings and credit to inflate real estate and stock market prices, not to expand direct investment in the means of production. By making interest payments tax deductible—while taxing “capital” gains at much lower rates than “earned income” in the form of wages and profits—the tax code makes it easier to make financial gains by stripping assets than to earn profits by creating tangible real wealth.

In the aftermath of such policy, the US and European economies are transitioning from a period of asset-price inflation to one of debt deflation in order to pay down the debts run up over the past financial bubble. Consumers are obliged to cut back spending on goods and services, prompting businesses to cut back their own capital spending. This is why today’s economies are shrinking. Every recovery since World War II has started from a higher level of debt to income and net worth. Under these conditions, banks are not going to renew the lending policies that fueled the recent financial bubble. They certainly are not making any more 100 percent zero-equity loans, and are shortening their time frame to insist on self-amortizing loans.

This is not a positive foundation for a new economic recovery. Falling real estate prices are deterring new construction, the traditional motor for recovery. Widening state and local deficits are forcing cutbacks in spending. Family formation, marriage rates,

[11] This threat is being used to extract “givebacks,” headed by replacing defined-benefit pension plans with “defined contribution” plans in which all that employees know is how much is paid into the plan each month, not what they will get in the end—if indeed, anything at all remains. The past year, for instance, has seen the Chicago *Tribune* buckle under its debt-leveraged takeover, in which the real estate pyramider Sam Zell emptied out the Employee Stock Ownership Pension (ESOP) fund to pay off the bankers who lent him the money to buy the newspaper—wiping out stockholders in the process, including the employees. Asset-stripping time has arrived.

and birth rates are falling as new graduates cannot find jobs. So in contrast to the Baby Boom years following World War II and its echo a generation later, the US and European economies are becoming top-heavy with elderly pension recipients, draining public budgets.

The Oil Fund's Diversification into Commercial Real Estate

If financial markets go bad, Norway's oil fund will fall in value. This has happened to pension plans and other institutional investors throughout the United States and Europe, after all. The Japanese started in the late 1980s to diversify their investment into real estate, using their soaring export surplus to buy Rockefeller Center—and quickly lost the $1 billion they invested. They also tried to buy downtown Los Angeles, only to find that "there is no 'there' there." As I will describe below, leading American real estate developers have been losing their shirts in the recent downturn. One can only pray that this is not a dress rehearsal for the oil fund's recent decision to "spread the risk" by investing in London's luxury Regent Street trophy stores.

Oil fund managers claim that diversifying out of the stock and bond markets into real estate minimizes risk. But does it really do this? It is true that real estate has been the source of most fortunes throughout history, and is the largest asset category in nearly every economy. But the logic of making money on real estate is different for governments than for private developers. The latter seek to make capital gains by debt pyramiding, putting in the minimum of their own equity while paying the rent to their banker as interest for the loan to buy the property. Bankers search out customers who have sufficient judgment and vision to take on such loans. Banks get the income, leaving debt-leveraged investor or other speculators to hope for a capital gain.

Banks have lobbied to make interest tax-deductible. This encourages debt pyramiding. But the oil fund's problem is what to do with its surplus of liquid savings. For it, the way to maximize a return is full equity ownership rather than borrowing—to get the rental income for itself, not to take out a mortgage and pay the rent to the banker. How then will it avoid paying taxes on its rental income?

Multinational firms solve this problem by establishing banking subsidiaries to lend enough money to their real estate, mining, oil, or other companies to "expense" whatever income they earn in the form of interest charges. This gives the illusion that the conglomerate is not earning any net taxable rental income. Is Norway's oil fund prepared to establish a banking affiliate to engage in this kind of ploy to avoid having to pay income taxes.

There are other dangers. The past two years have seen real estate losses as steep as 70 percent in the former "tiger" economies of Latvia and Iceland, and 30 percent in the United States, where property prices are still plunging. For example, the largest real estate rental development is Stuyvesant Town in New York City. In 2006, Tischman-Speyer organized a group of investors to buy it for $5.4 billion. The investors ended up simply walking away from the property when its value fell an estimated $1.9 billion and went into foreclosure.

In the commercial property sphere, the debt-leveraged empire of Harry Macklowe, one of New York City's largest developers, also imploded last year. Donald Trump often has lost money and defaulted on his real estate loans, and the Reichmann brothers of Canada lost their equity in London's Canary Wharf. So it may be a case of jumping out of the frying pan into the fire for oil fund managers to diversify out of stocks and bonds into real estate.

It should be borne in mind that real estate investment is an inherently political game, best played by insiders when it comes to trophy properties. The biggest gains are made from rezoning property use. Tischman-Speyer, for example, expected to make its gains by evicting rental tenants from Stuyvesant Town and turn it into condominiums for sale. But politicians simply could not permit investors to act in so blatantly illegal a way against so many residential voters. Is Norway's government prepared to pay off politicians and judges, at least by financing their election campaigns to obtain such favors as rezoning and tax favoritism—and the local transportation and other infrastructure investment that often is a key to raising property values?

The moral is that diversification into real estate in a risky financial environment does not minimize the risk; it only spreads it around. So today seems a propitious moment to reconsider just how sovereign wealth funds should best invest in foreign markets, especially as Europe is being racked by Baltic, Irish, and Greek negative equity and austerity.

III. NORWAY'S BROAD SET OF CHOICES TO POSITION ITSELF FOR THE FUTURE

Today is one of those crucial moments in history when the shape of world development is being reset for the next few generations. The BRIC countries, South Africa, and Asia have become the main recipients of US and European capital flight, in no small measure because they are using their sovereign wealth funds to modernize their transport and communications infrastructure, health systems, research, and education. They also are buying control of key raw materials and technology most directly integrated with their own regional advantages. Rather than being inflationary, this investment in their own economies and those of their neighbors lowers their cost of living and doing business.

The aim of this "new" policy recalls the mercantilist strategy that underlay British, German, and US development in past centuries, as noted above.[12] Its success is leading the world to polarize between nations whose governments actively manage their long-term investment and those that place their funds in scattered financial markets. This is the ground on which Mr. Primakov recently explained (in the interview cited earlier) why governments need to draw up a long-term strategic development plan to position themselves in the world's shifting specialization of production and employment, "If a plane is having trouble, the autopilot cannot handle an unusual situation. Only the personal skills of the pilot can save the ship. It is similar with the economy. Autopilot does not work in extreme conditions." By "autopilot" the former Prime Minister meant passive financial investment policies. He recommended dividing Russia's sovereign wealth fund to establish a Fund for Well-Being alongside the Stabilization Fund.

To put Norway's investment strategy in a similarly broad economic perspective, let us ask *why* countries with much more active sovereign wealth funds are becoming such strong magnets for capital. What are they doing that the United States and Europe are not?

For starters, there is an assumption that the oil fund's proper aim is strictly

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[12] Here in Norway, Erik Reinert's "reality economics" group has described this "other economic canon" as an alternative to today's more short-term bankers'-eye financial view of comparative advantage. See: http://www.othercanon.org/papers/index.html.

financial, not to position Norway's economy strategically for the remainder of the 21st century. But today's post-bubble reality check suggests that the scope of Norwegian policymaking should go beyond merely picking stocks and bonds to weather the global financial storm. The basic issue is whether the nation should save its oil-export revenue in merely financial terms—and as such, compete with "free" electronic credit abroad. Should Norway continue to turn the oil fund's foreign currency receipts over to financial planners to treat like a small-scale personal savings account placed in an array of mutual funds?

The alternative is to use its oil revenues to buy resources and technology most closely related to developing its own economy so as to make future generations self-sustaining by living off their own work and production. China's investment in foreign technology, mineral resources, and farmland exemplifies this approach. Its purchase of Lenovo (formerly IBM), Volvo, and Norway's Elkem are examples of how such investment may dovetail into long-term geopolitical planning—evidently to the approval of Western money managers.

When the sovereign wealth funds of China or Singapore do invest in stocks, it usually is in partnership with well-connected hedge funds and political insiders. China's $3 billion buy-in to Blackstone in June 2007, followed by its purchase of 9.9 percent of Morgan Stanley that December, aimed at integrating its investment strategy with America's economic elite. Russia's investment in the former Soviet oil industry and transport is a similar example. The government is trying to buy back the former Yukos ownership of Lithuania's Mazeikiu refinery.[13]

The key factors of production in today's world are natural resources, one's own domestic labor and capital, and the ability of governments to protect economies from predatory finance. Norway's interest lies in resisting pressure to exchange its valuable oil and other resources merely for IOUs in "paper currencies" (that is, unpayable foreign debts), stocks, and bonds that look like they will decline in value against "real" resources.

But Norway is not playing the global financial game to maximize its advantage as a global creditor. Its oil fund simply recycles its foreign-currency royalties into European

[13] See: http://www.globalpost.com/dispatch/poland/101014/lithuania-oil-refinery-russia.

and US financial markets, despite the debt deflation and economic austerity into which their governments are plunging their populations. The fact that Norway's own economy is free of the need for such austerity should provide an opportunity for it to use its oil-export surplus to invest directly in domestic and regional enterprises and infrastructure to prosper over the next half-century.

Some economists almost jokingly suggest that if Norway cannot spend its export earnings on capital investment at home, it should simply leave the oil in the ground. Their oil provides other countries with heat and power—and then uses the savings from this production to bail out overextended financial and real estate markets abroad. This enables property and financial speculators to "cash out"—leaving the oil fund holding an empty bag if financial markets decline. US and European financial managers are to receive not only the gift of Norway's oil, but also its earnings in the form of inflows into the stocks and bonds of these countries at high prices. This game may leave Norway with empty holes in the ground and suffering losses of its savings.

So the guiding principle when it comes to savings in financialized form may be "use it or lose it." Suppose the oil fund is risking half its financial savings—a quarter-trillion dollars. Is it not better to hope that future generations may find it easier to resist subsidizing the global financial casino as it slides into negative equity?

A less drastic solution would be opened up by the kind of discussion cited earlier from Alaska and Alberta to Russia as to how best to invest national savings. What are Norway's most pressing needs and most promising opportunities?

Heading the list would be modernizing its railway and transport system, and expanding its fishing industry. Transportation saves time, and "time is money"—or at least can be expressed in terms of the value of time spent on slower or less efficient transportation. At a time when debt-pressed governments are turning their roads into toll roads and thereby raising their cost of living and doing business, Norway's financial position enables it to save such charges.

Most countries seek to make themselves more competitive, but few Norwegians would want to do this by lowering basic wages and living standards as is occurring in debt-strapped economies. Education and training obviously are a key element of competitiveness, but not at the "neoliberal" cost of loading down students with a lifetime of education debt. Norway has the resources to subsidize its education while other parts of the world are sharply raising its price.

In contrast to today's "race to the bottom" based on lowering wage levels, Simon Patten (1890) explained the Economy of High Wages principle: high-wage labor undersells "pauper labor" because it is highly educated, well-clothed, and healthy. "If we show the world how a people can become educated, how skilled labor can be placed and maintained in all industries, how the consumption of the people can be modified so as to make the best use of its land, and how all forms of internal improvements can be successfully inaugurated and carried out, other nations will be compelled to follow in our footsteps and displace that mass of cheap laborers which now retards the development of every nation."[14]

Today, financial, insurance, and real estate (FIRE) charges play a much greater role in personal budgets than in times past. These charges are institutional in character, subject to domestic tax and financial policy. In Patten's day, countries normally lowered production costs by raising the productivity of capital, above all as a result of rising energy use per worker. They also raised their competitiveness by subsidizing the basic infrastructure sectors cited above: transportation, communications, R&D, and a good university system. By contrast, today's neoliberal "reform" policies promote debt leveraging and untax real estate—leaving more economic rent to be capitalized into larger bank loans and thus absorb the economic surplus in the form of interest charges. A sounder and fairer financial-fiscal policy can minimize these FIRE-sector overhead charges by reintroducing classical free-market policies: markets free of economically unnecessary financial, rent, and monopoly charges.

The aim of development planning is to transform the character of international advantage and the relations between labor and capital. Countries can self-endow themselves with capital and high productivity. So international cost advantage need not involve the "race to the bottom" that creditors are imposing on the Baltics, Southern Europe, and other debt-strapped economies. Nations seeking to build up their future may

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[14] I elaborate this principle in *America's Protectionist Takeoff: 1815-1914* (2010) and *Trade, Development and Foreign Debt* (2009), but I am indebted to Arno Daastol for bringing my attention back to this quotation, and for much background information on Norway's oil fund that I cite in this paper.

well aim *not* to be "competitive" in a world in which neoliberal managers are trying to "win" by driving down wages and living standards.

For Norway, the aim should be to maintain prosperity when its oil runs out, by putting in place knowledge and technology, a well-educated population, and a low-interest infrastructure. Instead, Norwegians are now being told not to spend on their economy much of the gain from their hard labor and enterprise invested in oil extraction, technology, and their "gift of nature." Contrary to the policy of sovereign wealth funds in the economies that the world's money managers are moving their own money into, Norway's financial managers claim that it would be inflationary and wasteful—and actually make the economy *less* competitive—to spend more of the oil fund's revenue and reserves on importing technology, capital goods to build better roads and modernize the nation's railroads, or on direct investment in Norway's closest neighbors, from Iceland to Scandinavia and perhaps the Baltics.

The basic ideas of Norwegian economic interest have not changed much over the centuries. For many centuries it vied militarily with its neighbors to control the North Sea fisheries. This rivalry prompted Britain to colonize New England, Newfoundland, and Canada to obtain cod and similar "northern" raw materials at minimum balance-of-payments cost by keeping the payments for these commodities in sterling rather than being paid to Scandinavia. But today, control of resources is being achieved financially. This enables Norway to improve its geopolitical future not in an aggressive way but one that its debt-strapped neighbors from Iceland to the Baltics would welcome, as Norway has a number of natural complementarities with these countries.

Some Asian friends of mine have asked why Norway doesn't use its oil fund reserves to buy into Sweden's high-tech sectors, or Latvian computer programming and software sectors. Icelandic economists have pointed out that in the aftermath of the banking crisis, their pension funds bought many of the country's crown jewels from the bankrupt institutions. For instance, one business currently said to be up for sale is Iceland's largest fish processing plant. The philosophy of Icelandic pension fund managers is much like that of Norway's oil fund: they do not feel that they are well organized to directly manage companies. So they are looking to sell off major infrastructure and businesses they obtained from the banking crisis.

So here is where the prospective debate over how best to use Norway's oil revenues stands. The foreign exchange from oil remains wholly invested abroad—except to the extent that it might be spent on buying control of foreign assets and resources plugged into domestic Norwegian growth, or spent on imports (earth-moving equipment, steel, etc.).[15] This is because oil royalties are paid euros or sterling. The objective of keeping the oil fund in foreign currency is to prevent driving up the kroner's exchange rate to levels that would make its labor and industry uncompetitive. The Finance Ministry claims that using more foreign exchange proceeds to import technology and capital goods for domestic spending is inflationary, simply because it employs labor. This is the ground on which Norway's financial managers limit oil fund spending within the country to just 4 percent of the annual returns. The announced aim is to avoid converting oil export proceeds into domestic currency and thus pushing up the exchange rate. It is argued that this policy avoids overheating the labor market, pushing up wages, and thus making Norwegian business uncompetitive.

But the world's most successful sovereign wealth funds are pursuing the policy that the past few centuries of trade and development theory have upheld: economies are made more competitive and less inflationary by public investment in infrastructure and education to raise productivity and to lower the cost of living and financial or other *rentier* overhead charges.

This means that the most pressing present problem in oil fund debate is to expand its scope to acknowledge the broad issues that are being raised in the rest of the world. It may be time to establish one or more Futures Institutes to assess possible Norwegian futures in today's rapidly shape-shifting global economy.

I would suggest framing the basic research problem as follows: suppose that the oil fund be shifted over the next twenty years to invest 60 percent of its assets in projects that serve Norway's national interest, by a combination of direct foreign resource and enterprise ownership and domestic infrastructure. To answer this question, one might ask

[15] The only oil fund money that is spent in Norway has been for imported equipment and other goods and services. When the oil companies exchange their foreign exchange for kroner, Norges Bank gets the euros or other foreign currency. It then creates domestic kroner on its own electronic keyboard. So the money spent domestically in Norway comes from the central bank keyboard, not from the oil fund.

what benefits the national economy would achieve by high-speed railway, better public roads and tunnels, internet and phone communication, higher education at home and abroad, healthcare, ports, and fisheries.

REFERENCES

Daastoel, A.M. 2001. "Friedrich List's Heart, Wit, and Will: Mental Capital as the Productive Force of Progress." Dissertation in Finanzwissenschaft, Universität Erfurt, Germany.

Frisch, R. 1934. "Circulation Planning." *Econometrica*: 258–336.

————. 1947. *Noen trekk av konjunkturlæren (Med et tillegg om levestandard og prisindeks)*. Oslo: H. Aschehoug & Co.

————. 1962. "Preface to the Oslo Channeling Model." in Frank Long (ed.), *Economic Planning Studies: A Collection of Essays*: Dordrecht and Boston: D. Reidel Publ. Co.

Haavelmo, T. 1990. "Econometrics and the Welfare State, Banquet Speech, at the Reception of the Nobel Prize." in Tore Frängsmyr (ed.), *The Nobel Prizes 1989.* Stockholm: Nobel Foundation. (also in *Nobel Lectures, Economics 1981–1990*, edited by Karl-Göran Mäler, World Scientific Publishing Co., Singapore, 1992).

Patten, S.N. 1890. *The Economic Basis of Protection.* Philadelphia: J.B. Lippincott Company.

————. 1924. "The Theory of Dynamic Economics." in R.G. Tugwell (ed.), *Essays in Economic Theory.* New York: Knopf. (Originally in *Publications of the University of Pennsylvania Political Economy and Public Law Series* 3(2), 1892).

Singaas, H. 2011. "Pensjonsfondet sett hjemmefra." *Dagbladet*, February 22. Available at: http://www.regjeringen.no/nb/dep/fin/aktuelt/taler_artikler/taler_og_artikler_av_ovrig_politisk_lede/taler-og-artikler-av-hilde-singsaas/2011/pensjonsfondet-sett-hjemmefra.html?id=634461.

Stoltenberg, J. 2011. "Michael Hudson tar fullstendig feil." *Klassekampen*, February 23.