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Issue no. 86

10 December 2018

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Who is behind the campaign to rid the world of cash?¹

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The future of payments has arrived in early 2018, when the first Amazon Go store opened its gates for the general public in Seattle. If you shop there, you will not have to queue at the cash register. There is none, thanks to – as Amazon calls it – the most modern shopping technology. You just download an app and sign on before entering the store. Then you freely take everything you want from the shelves and put it into your shopping bag – or put it back on the shelf, if you change your mind. When you are satisfied with what you've got, just leave the store, unencumbered by cashiers or shop detectives. Amazon's surveillance apparatus has followed you around the store and registered your every move. Shortly after you have left the store, you will get a bill on your smartphone and the money will be taken from your account.

Shopping cannot be any easier than this. The activity of paying is eliminated in this consumerist utopia that is just becoming reality. Without your involvement, you will be rid of your money. You don't even have to take out a card, give a signature or swipe your smartphone. The seller and the person who manages your money are merging. This is where we are headed, not just in Amazon Go stores. In the future of payments, all convenience will be on our side, all the power will be with the other side. Amazon intends to make this convenience-cum-surveillance way of shopping the norm. According to recent news piece by the news agency Bloomberg, the company wants to open 3000 such stores by 2021.²

In China, a similar utopia is becoming reality. The Chinese government is working on a system to assess the virtue of all Chinese citizens. If you treat customers nicely or if you "volunteer" for some public service activities, you will be rewarded with social points. If you are caught jaywalking by one of the omnipresent surveillance cameras, which are increasingly equipped with facial recognition software, you might have a few points taken from your social credit account. If you dare criticizing the government or neglect to pay a fine you will lose many points. If your account goes too low, you will be barred from booking decent hotels or flights or fast trains.

The standard way of paying in Chinese cities is by using the multi-purpose apps WeChat or Alipay. You can think of them as a combination of Facebook, Google, Amazon and Paypal. They cooperate closely with the government. WeChat even has a special app which uses the services facial recognition feature to function as official identity documentation for any purpose other than international travel.

WeChat and Alipay register and store everything customers do with their money and otherwise, and use that information to make a numerical assessment about that person's virtuousness and trustworthiness. If you spend lots of time playing computer games or if you

¹ This article is a translation of the Introduction and part of Chapter 1 of the book, *Schönes neues Geld (Brave New Money)*, which was published in German by Campus in August 2018. A Korean translation is in preparation. Norbert Haering is a financial journalist, blogger (norberthaering.de/en) and author of several popular books on economics, including *Economists and the Powerful*.

² Spencer Soper: "Amazon Will Consider Opening Up to 3,000 Cashierless Stores by 2021." Bloomberg. 19.9.2018.

have a patchy record of paying your bills on time, your standing worsens and you will experience all sorts of economic or social disadvantages. Given the close cooperation with the government, it can be expected that these private assessments of creditworthiness and the government's social credit system will merge. All information about what citizens buy and which services they use, where and when, can enter into the social credit system.

It may be an attractive idea at first thought, that a person's virtuous or devious social behavior should be recognized and sanctioned more than economic success or failure. However, if a government has the power to decide and to sanction not only what is legal and what is not, but also what is good behavior and what is bad behavior, then the threshold to a totalitarian society has been overstepped.

The Amazon-Go-society is very different only at first glance. No supreme authority will regulate your everyday behavior, as long as it is within the law. On closer inspection, though, the two systems have uncomfortably large areas of overlap. Both are based on reliable automatic identification of acting persons in any context and on total surveillance of all actions. Cameras and other surveillance equipment are following the Chinese with every move they make. The same is true for Amazon-Go-stores. The fact that Amazon is marketing their surveillance technology to police departments does not do anything to attenuate the similarities.

Amazon Go is just a particularly advanced example of the pay-as-you-go-world that is forming in front of our eyes. We don't own and control anything anymore. Instead we pay for using the services, which things we used to own, can provide, and we do so in ever smaller instalments. This is economically feasible only if usage can be automatically registered by surveillance equipment and automatically charged. In the Amazon-Go-store, the removal of an item from its shelf is a separate purchasing-action, which has to be surveyed and individually charged. This is the road to complete surveillance that we are led onto in other matters, too. They are not selling the bits and bytes of a computer program to us anymore, which we can use at will. They are selling the right to use the bits and bytes of a program that remains in their ownership and under their control - and with it, all our data. If they decide to do so, they can block us from using the program. We do not buy bikes anymore; we rent a bike by the minute. We do not pay the government any more to build roads for us, we pay for using them by the mile or kilometer. From this, the government and those who run the payment infrastructure gain almost complete knowledge of the whereabouts and itineraries of all citizens. You cannot even pay cash on buses and trains any more in many places, to partly escape this complete surveillance. Increasingly, we trigger automatic payments with every step and click we make. This pay-as-you-go-system is relying on and is at the same time fostering the same complete surveillance that is currently implemented in China. It renders individuals completely dependent on those who exercise control over the financial bookkeeping and access-rights-management in the background. If they decide that you do not have the financial claims to all or any of those services, or if they deem you unworthy of using them for some other reason, you will be completely paralyzed, unable to do anything. Just like Joe Chip in Philip Dicks Science Fiction "Ubik", written half a century ago. Chip is unable to leave his apartment, because he cannot pay the door to open, due to lack of funds. Dick, who became posthumously famous for writing the book on which the Blade Runner movies were based, was a real imaginative genius. The term sharing economy was more than four decades off, when he wrote this, and paying digitally instead of with cash was far from being the norm at the time.

Automated facial recognition and other technologies used for implementing the pay-as-you-go-system are helping to merge the digital world with the real world. What we do in the real world, is mapped into a digital representation with increasing completeness. These digital representations of our lives are used for personal profiles on everybody, profiles, which anybody can obtain, who has the money or the power. This can be a potential landlord, a potential employer, a bank, an insurance company or a powerful mother-in-law. All these users of our data will make assessments of our worthiness just like the social credit system in China.

In the same way as in China, such assessment systems serve to promote desired ways of behavior. This is exercised in a more decentralized way in the western system, to make better consumers, more docile employees or more careful insurance-customers of us. Even in the arena of political behavior there are areas of overlap with China. Big data applications to statistically assess your trustworthiness and value as a customer are prone to treat political activism and social behaviors that stray from the norm as liabilities. If such a system is implemented without strict checks on which data can be used – checks which are increasingly hard to implement, society will be pushed toward subservience to authority and strict adherence to prevalent social norms.

It is not simply an unintended side-effect of the pay-as-you-go-system that it produces and requires so much data. This is the main attraction of the system for those who push for its implementation. Just take computer programs. They do not cost anything to produce. Producers could easily give governorship to everyone who pays. They don't want to do that anymore. They want complete control and all data. Corporations wanting to commercialize our data work together in harmony with governments eager to survey and control populations, for purposes that may range from tax-enforcement to crime prevention and political oppression. Reliable identification is a crucial ingredient in the agendas of both of these main actors. Thus, it is terribly convenient that pay-as-you-go is a major driver of biometric identification via facial recognition, iris-scans or fingerprints in everyday-life.

Cash is in the way

As long as every other transaction is settled with cash, a complete digital representation of everything that the population does, is out of reach. The stubborn preference for cash is a major stumbling block on the way to the pay-as-you-go-world of total surveillance. This is why they tell us, that cash is outdated, dirty, fishy and inconvenient. However, the preference for cash is based on some real and strong advantages of this payment technology, which has served us well for thousands of years. Some of the more important of these advantages are not becoming less, but more important, with increasing digitalization of all walks of life.

The following are the advantage of paying yourself with analog money, rather than asking someone to please pay for you with digital money:

1. Cash-transactions are anonymous. Only those who observe the transaction on the spot will know about them. The seller need not know the name of the buyer. Nobody can see from my account, what I have bought when and from whom. This is true for intelligence services, the police, a social credit authority, bank employees, credit card companies, rating agencies, spouses and parents. None of these will know from our account statements where we spent our days, and what we were doing.

2. With cash, neither the buyer, nor the seller needs to give up something in advance and trust that the other side will stick to their promises. If you sell your car to an unknown person, you do not want to hand her the car and trust that the money she promises to wire, will arrive. If you are the buyer, you do not want to wire money before you have control of the car. Providers of new, faster digital payment methods like to make you think that these can achieve the same. So far, this is not true. The money transfer can be cancelled after the fact.
3. Cash helps you keep tabs on your spending. This is particularly important for those who struggle to make ends meet. If you pay everything electronically, even small and tiny payments, you will not have the visual and haptic control of your wallet emptying out and you will be so swamped with receipts that effective control is not realistic any more.
4. Cash is a very robust payment technology. It does not require any technological infrastructure. It can be used even during major disruptions of the energy supply or the mobile network. The civil protection strategies of countries like Germany explicitly recommend that people keep a decent supply of cash around for such technical emergencies. If we only have the option of paying digitally, a breakdown of the internet or the mobile network will paralyze large sections of the economy. If only your own technological infrastructure, like your smartphone or your credit-card malfunction, you can be in deep trouble, if you are travelling and need to pay for a place to stay or to travel home.
5. The same is true, even more radically, if, due to an error or for some other reason, all your accounts are suddenly blocked. Only with cash, you can keep paying for food, shelter and travel. Cash empowers.
6. Cash is also a very inclusive payment technology. Children and people with physical or mental handicap often have a much easier and safer time using cash than digital payment methods. You will give your children small sums of cash to go and buy something, but you will probably hesitate to give them your credit card.
7. Cash is the only possibility we have to store our money in a way that it cannot be lost in the next banking crisis. Digital money is nothing but a claim on a bank. If the bank goes broke, the money is gone, unless a well-capitalized deposit insurance system covers the loss. None of the existing deposit insurance systems, however, is well enough capitalized to cover the deposits of one of a large bank, let alone all the deposits of a failing banking system.
8. Cash also protects us from a milder form of expropriation in favor of a failing banking system: negative interest rates.
9. Cash is the cheapest payment technology for users. Banks and payment service providers charge for executing our payments. MasterCard and Visa have profit margins, which are quite a bit higher than those of your regular company. Someone has to pay for these.
10. Of course, the advantages of cash are not only valued by law-abiding citizens, but also by criminals and other rule-breakers. Tax evaders and drug traffickers also like the anonymity that cash affords.

One man's meat is another man's poison. For banks, payment service providers, IT-firms, governments and some merchants the list above as a list of disadvantages of cash.

Those who want to sell as much as they can to us, or want to give us as much credit as they prudently can, dislike that cash helps us control our spending. Police and intelligence agencies think of the anonymity of cash as a major disadvantage. They can convincingly

argue that catching the bad guys and preventing bad transactions would be easier if cash was not available and thus financial surveillance was more complete. However, in order to prevent criminals from taking advantage of citizens' rights for privacy and other freedoms from government interference, one would have to do away with those freedoms altogether and democracy with it. To argue that some crime can be prevented by clamping down on the use of cash is just a first step in an argument. All too often, the second step is not mentioned. Not even an attempt is made to prove that the gains in terms of crime prevention outweigh the loss of civil liberties.

In a democracy, this judgment should be made after public discussion by lawmakers in a transparent procedure. Instead, as we will see, the far reaching removal of privacy in financial affairs has been decided far away from parliaments in a diffuse transnational nowhere, through the mechanism of standard setting groups expert in evading democratic control.

Cash is also a costly nuisance to credit card companies and IT-firms who want to have our valuable financial information. Every transaction that we perform without a data trace can distort the profile that they collect on us and thus make it less informative and valuable. We are likely to settle the more sensitive transactions in cash - transactions, which might allow conclusions about our employability or health, or creditworthiness or our inclination to incur risks. A potential employer who wants to screen out sickly or nonconformist candidates, an insurer who wants to screen out risk lovers and the sick, will not want to pay as much for a profile, if it does not reliably tell them, if I drink, buy lots of drugs or medical services, practice a dangerous sport or read a radical magazine.

Banks would much rather see our money locked-in in the banking system than to allow us to remove it at will in the form of cash – including in the most inconvenient moments for them. If there was no such cash-exit anymore, when the next major banking crisis hits, banks would not have to rely on already overstretched governments bailing them out yet another time – they could simply be made whole again by a devaluation of our deposits. This works, because our deposits are legally a debt of the bank to us. If the banks' assets lose much of their value in a crisis, its capital is depleted. By writing down the banks' debt, the banks' capital, which is value of assets minus value of liabilities, is restored. This can happen in one go, by writing down deposits by 20, 30 or 50 percent, or it can be done gradually by negative interest rates on deposits of say 3, 4 or 5 percent. If this was possible, banks would not have to rely any more on governments rescuing them, and governments would be rid of a big headache.

We mentioned advantages of cash for criminals and tax avoiders, so let's also look at the disadvantages of cash for these groups. To transport cash in large amounts is difficult and expensive. If the sums go into the two- or three-digit millions, cash is not used any more. Rather, the mafia, the ultra-rich and large corporations employ banks and specialized law firms to transfer digital money into tax havens in a way that ownership is concealed. Criminals use forged freight papers and similar tricks to insert dirty money in large volumes into the legal money circuit. Those who pretend that pushing back the use of cash would eliminate money laundering, crime or even terrorism never mention that the bulk of money laundering and terror financing is done with digital money. They use the argument that cash is unwieldy, to argue in favor of getting rid of large-denomination notes, but they fail to admit that even with large-denomination notes cash is too unwieldy for really large transactions.

For companies like Visa, Microsoft and Vodafone which provide the technical infrastructure for digital money transfers, cash is a nuisance, because they are not involved and don't gain

money and data from cash transactions. Every transaction that is digitized means additional business volumes for them. Also their market power increases. If the alternative option of using cash is eliminated, they will increase their margins.

Thus, Visa, MasterCard and their allies are running large global marketing campaigns to tell us how foolish and old-fashioned it is to pay autonomously with cash and how modern and convenient it is to have someone else manage your payments digitally. They bribe restaurants into refusing to accept cash. They provide vendors of homeless-newspapers and churches with card readers, because this provides terrific PR for cashlessness. Governments worldwide issue laws and regulations to prohibit or restrict autonomous payments with cash. They make them harder or more expensive and generally cloak them in the suspicion of illegality.

It is not only the Chinese government, who wants to know everything about their citizens. Western governments, too, strive for the totally transparent citizen. The leading power, the USA, even wants to bring every person on earth into the digital system of automated surveillance. And so it happens that governments of all colors, from Sweden to Saudi Arabia, are working together in harmony with one another and with the leading private corporations of the IT, telecommunications and finance sectors in a global public-private partnership against cash.

A coordinated global campaign

The surprise move of the Indian government in November 2016 to take 86 percent of cash out of circulation with only four hours warning was one of the more visible actions in this global campaign to digitize all payments. In most industrial countries, more indirect and less visible ways of pushing back the use of cash are employed. The ATM-network is thinned-out, banks start to charge for cash withdrawals, rules are passed, which prohibit merchants from passing on the cost of card-payments to customers, taxi-drivers are required to enter into contracts with card-companies and prohibited from refusing to accept credit cards. Banks and merchants who deal with cash payments are harassed with pointless and tedious rules. Laws are passed, which require travelers who want to cross a border with a few thousand dollars or euros in cash, to tell any border official who deigns to ask, where the money is from and what exactly they want to do with it, lest it be confiscated.

According to a forecast from 2016 of the then-CEO of Deutsche Bank, John Cryan, cash will be gone by 2026. In Europe, a general upper-limit for cash-payments is under discussion. Several countries have already prohibited their citizens from paying larger bills autonomously, without the help of banks or card companies. At the same time, rules and regulations proliferate, which make sure that none of our digital payments and accounts remain hidden from police, intelligence services, the taxman and social security authorities. The last remains of bank secrecy have been eliminated.

It is no coincidence that similar moves and regulations against the use of cash can be observed all over the world. Malawi, Nigeria, the Philippines, Mexico and several dozens more countries have even declared the official aim to become cash-free countries as soon as possible. At the same time, these countries are working on forcing their whole populations into large government-run biometric databanks. Digital payments and biometric databanks are two parts of a coordinated global campaign, which is driven forward under the camouflage-

terms financial inclusion and digital identity. Financial inclusion is Orwellian newspeak for taking away the option of using cash. Digital identity is a devious nod to a development goal of the United Nations, which asks for every newborn on earth to be given an official identity. Even though, there is no mention of “digital” and “biometric” in the development goal, and even though, biometric registration does not work well for newborns, this campaign is pushing for the forced digital-biometric registration of every person, under the pretext of the development goal, even for the large majorities of the affected populations, who are already well equipped with identity documentation.

Nominally, this campaign is run by the G20-group of governments of the most powerful countries, under the name *Global Partnership for Financial Inclusion*. The goal is to push back cash, digitize all payments and to biometrically register all earthlings. The real drivers are global leaders in banking, the credit-card-business and information technology from the US, together with the US-government. They have formed public-private lobby-groups with names like *Better Than Cash Alliance*, *Consultative Group to Assist the Poor* and *Alliance for Financial Inclusion*. These groups have written the strategy papers of the G20-Partnership against cash and they have been invited to drive the campaign forward as “implementing partners”. It is always the same companies that hide their commercial interest behind these benevolent-sounding catchwords and group-names. They are MasterCard, Visa, Citibank, Microsoft and PayPal sometimes directly, sometimes through their foundations.

The most important weapons in the stealth-war of the G20-partnership against cash are the international standard-setting bodies and the international financial institutions IMF and World Bank. The standard-setters are informal clubs of the world’s more powerful governments and/or central banks. They set the standards for what is considered best practice in finance. Very few people have even heard of these very powerful groups. They go by cryptic acronyms like FATF, CMPI and BCBS, which stand for *Financial Action Task Force*, *Capital Markets and Payments Infrastructure Group* and *Basel Committee for Banking Supervision*. They have no formal mandate or power and can only give recommendations. At the same time, they are exceedingly powerful and largely unaccountable. Their recommendations are almost always transformed into binding law around the world, without any serious discussion in parliaments, because they have already been declared the “global standard” by the G20-governments. In the countries not represented in the G20 and their standard setting bodies the international financial institutions use their power to make sure that these standards are abided by anyway.

The World Bank and the IMF, the standard-setting bodies and major agencies for economic development, like USAID, have all vowed to use their regulatory and financial power to further the goals of the *Better Than Cash Alliance*. This is the explanation behind the otherwise surprising fact, that so many governments of very poor countries, who should have other things on their minds, have recently made it a priority, to become cashless and to register their whole populations in biometric databanks.

It is from the transnational nowhere-land of the standard-setters’ realm, that the EU-commission has been prompted to think about a general upper limit for cash payments and to pass a regulation that allows customs officials to confiscate cash at the border, even if no rule has been broken. It is here that the harassing rules have their origin, which forces banks and merchants to eliminate every minute risk of money laundering with the involvement of cash is involved, while at the same time, nobody seems to care about large-scale tax-evasion and money laundering as long as it is performed digitally. It is in this shadow-empire that the rules

are negotiated without the disturbing interference of parliaments, which ensure that almost nothing can be bought anonymously over the internet any more. The general public and parliaments hardly even notice that this is going on. This is why there are always heated discussions about new data preservation rules in telecommunications, while the much more intrusive, very long-term storing and even active surveillance of our financial accounts and transactions go almost unnoticed.

The trend toward a digital world currency

The winner takes all is a basic rule of the digital economy. Whoever is ahead has a large advantage, just from being ahead, and has a good chance to end up as a quasi-monopolist. This has two main reasons, called network effects and economies of scale. Network effects make digital services more attractive, if more people use them. This is true for social media or trading platforms as well as for computer programs like Word or Windows. Economies of scale arise, because once a digital service or a program has been developed, it often costs next to nothing to provide it to more customers. Thus, the leader, who has the most customers, can offer the most attractive digital services at the lowest cost. This is the reason why Google, Amazon, Apple, Microsoft and Facebook have risen to the top of the league of the most valuable American companies within only a few years. Together with their Chinese look-alikes Alibaba, Baidu and Tencent hold the global top-spots. They all have a near-monopoly in their industry and can command very high profit margins.

The winner takes all applies also to money in a digitalized and globalized environment. Digital money can be produced at near-zero cost, and its utility increases with the number of users. What is in the way for one currency to gain a near-monopoly is only the desire of national governments to have their own currency and their power to enforce its usage at home. This power of national governments, however, might wane in an era of globalized digital commerce.

Control over a national currency has for a long time been an important factor underpinning the power of national governments. If this authority should move to the Silicon Valley, a big part of traditional power of governments could move with it. The captains of the digital industry have made it clear, that they would not be shy to pick up such power, if it came their way. They have quite immodestly laid out their visions of world governance by “international networks”, i.e. by them.

What these would-be world governors from the Silicon Valley promise us as advantages of the new digital payment world has much in common with Aldous Huxley's *Brave New World*. Crime is history, evading taxes is impossible, terrorism cannot be financed any more. Unreasonable self-damaging behaviors can be prevented. If you have high blood pressure, you cannot buy wine and salty or fatty foods without losing your insurance coverage. Almost everybody is happy in Huxley's brave new world. They all have been conditioned to happily accept their respective roles in society and they are provided with plenty of happy-pills. Still, most everybody reads Huxley's book as a dystopian phantasy, not least because autonomous thinking is reserved to a few decision makers at the top of the social pyramid.

Huxley put a French quote of the Russian philosopher Nikolai Berdjajev in front of his book:

“Utopias seem to be more reachable than ever. We are confronted with a new, worrisome question. How will we be able to prevent them from becoming reality? Utopias can become reality. Life is striving towards them. Maybe, a new century will come, one in which intellectuals and the educated will think about how to prevent utopias and how to return to a non-utopian society, less perfect but with more freedom.”

In 1949, Huxley wrote in the foreword to a new edition:

“Overall, it looks as if we are much closer to utopia than anybody could have imagined 15 years ago. At the time, I put this utopia 600 years in the future. Today, it seems quite possible that this horror will come upon us within a single century” (Huxley, 1949, my retranslation from German).

Huxley was amazingly prescient with this prognosis. Given current trends, 2032 seems like a realistic date for the realization of his dystopia. It seems that the 21st century is the one in which we have to prevent a dystopia from becoming reality—one that is already well recognizable in its contours. We will only be able to prevent it from becoming reality, if we manage to unmask its dystopian qualities, and the plan behind it, in time, before people have lost their ability to imagine alternatives.

Given the mighty phalanx that is working to push back cash and civil liberties, the longing for technical fixes for the problem is all too understandable. Many people are hoping that cryptocurrencies like bitcoin can be such a fix. They promise to transfer the good aspects of cash into the digital future. They promise anonymity and the protection of our money from bank failures. Others are hoping instead that the governments themselves, via the central banks, would issue their own cryptomoney as digital successors of the legal means of payment. It would be money that would not be threatened by bank failures, because the government would guarantee for it, not a bank. And, so it is hoped, the government could put in place protections for privacy of the users of this money.

Alas, those who hope to solve societal problems with technological fixes will almost always be disappointed. New technologies will work in the desired way, if societal conditions and power relations are favorable. If they are not, the powerful will take every technological tool that we would like to use and turn it against us – as they are already doing with regards to cryptocurrencies and as they are sure to do with an official digital currency.

Instead of hoping in vain for technological fixes, we need to go the way of pushing for political and societal changes. We have to pull parliamentarians out of their deep sleep. We have to tell them and the citizens at large which game is being played. They have to know that the decline in the use of cash is not a development that is unfolding naturally but something that a powerful alliance is pushing ahead by and coercion in the background. Ministers and central bankers have to be put under pressure to justify working in a partnership with companies like MasterCard and Visa against cash, despite all their public assurances that they want to do cash no harm. If this partnership is widely exposed dissolved, we will see that cash is anything but doomed. If allowed to thrive, cash will see a renaissance, because in a world in which more and more aspects of our lives are under surveillance and recorded, cash offers a refuge that will become more valuable for privacy and more valued by the people.

MasterCard, Bill Gates and their “war on cash”

If people write about a war on cash, even well-meaning readers will tend to think of them as doomsayers with paranoid tendencies. However, many will have second thoughts if they hear that there is indeed a Better Than Cash Alliance, which has the goal of replacing cash by digital payments on a global scale, and that this Alliance is doing this with the explicit support of the government of the 20 most powerful countries. The term “war on cash” was coined not by critics, but by key members of this *Better Than Cash Alliance*, as a rallying cry in their drive to increase their profits.

At a conference on payments in 2005, representatives of credit card company MasterCard talked about a new generation of card solutions, with which they wanted to “go to war”. Competitor Visa was confident, that they would “win the war on cash”. Together, they wanted to “eliminate cash from the financial system”. In a friendly report on the conference in the industry-journal *European Card Review* with the title *War on Cash*, the author says that while banks and governments have a shared desire to eliminate cash, governments prefer to let the card companies take the initiative, because they are afraid that the public would not like the war on cash.³ A department head of the EU-Commission is quoted saying: “We agree with the war on cash” and continuing with a plea to lower prices for card payments in order to be more successful in this war. Alexander Labak, President of MasterCard Europe said in a speech on *The Future Beyond Cash* that the war on cash had to be won and would be won, because these old-fashioned coins and bills were so expensive for society.⁴ The EU-Commission assisted with questionable calculations about the high cost of cash, while the leading US-consultancy McKinsey provided the rationale for the furor: They presented a study according to which the profits of the financial industry would increase massively, if cash could be pushed back.

At their industry meetings and in front of financial analysts, banks and card companies like to be bold and explicit about their goal to get rid of cash. However, if the general public is listening, the strategy is one of laying low. The International Monetary Fund (IMF) recommends letting the decline of cash appear to be a gradual and unplanned side-effect of unrelated measures and developments. The fund advises governments to let the private sector go ahead, because direct official action would cause popular resistance. If they did act, governments should start with harmless seeming steps like phasing-out large denomination notes or (initially) generous upper limits for cash payments. While measures against cash should be presented to be unplanned and independent, they should in truth be closely coordinated with the private sector, recommends the IMF-author.⁵

McKinsey also advised governments, banks and payment providers to cooperate in a “systematic war on cash”. The consulting company has conveniently provided a list of harmless-seeming steps for governments to take. Many of them have recently been enacted all over the world. They suggest are to require merchants to accept card payments and to prohibit them from passing on the cost to their card-paying customers. On the other side, cash-users should be confronted with the true cost of their payment-methods, including all indirect costs. Standards for security and maintenance in the cash circuit could be made more stringent, to make cash more expensive. McKinsey praises the Finnish who managed to push

³ Jane Adams: “The War on Cash.” *European Card Review*. März/April 2006. S. 12–18.

⁴ Alexander Labak: “The Future Beyond Cash – Europe’s Debit Alternative”. Speech to Delegates of the Fourth Annual MasterCard Debit Conference. Genf. 10.3.2005.

⁵ Alexei Kireyev: “The Macroeconomics of De-Cashing”. IMF Working Paper 17/71. 2017.

back cash by forming a cartel of banks and payment providers, which made cash more expensive. Also in Canada, Norway and Australia, they write, central banks and commercial banks together had achieved the same good result.⁶

The Better Than Cash Alliance

It is not hard to find the allies of Visa and MasterCard in their war on cash, once you have found a group called the *Better Than Cash Alliance*. This is a group that likes to stay in the shadows, but does not really make a secret out of its existence. It was founded in 2012 by the foundation of Microsoft founder Bill Gates and his wife Melinda, and by the Omidyar Network of E-Bay-founder Pierre Omidyar, by the largest US-Bank Citibank and Visa. The US-government was involved via USAID, the development agency, which is part of the department of state. The *United Nations Capital Development Fund* (UNCDF) in New York provides the secretariat and the offices.

MasterCard was not among the founders. Maybe they needed a bit more cooling-off of their fierce commercial campaign against cash, lest the press and the public might develop doubts about the strictly altruistic goals of the new organization. With a delay of one year, though, MasterCard joined this public-private partnership of Wall Street, Silicon Valley and Washington. There is a strong indication that MasterCard was closely involved already in the preparations for this anti-cash-alliance much earlier. In the two years before 2012, the Bill & Melinda Gates Foundation and MasterCard happened to be the most generous financiers by far of the UNCDF. They covered over 20 percent of UNCDF-budget in those two years, while in earlier years they had made some small contributions at best. This generosity can be assumed to have helped to ease the UNCDF into offering the Better Than Cash Alliance shelter and a prestigious sounding address. This address allows the alliance to pretend that they are part of the UN family, seemingly giving legitimacy to their claim to act in public interest. In truth, the UNCDF is not a full member of the United Nations family itself. It is an autonomous organization under the umbrella of the UN, something like an illegitimate child, always short of funds and thus relatively easy to bribe into such endeavors.⁷

It is also a stretch to claim that you are part of the United Nations, just because an organization with “UN” in their name provides you a secretariat. The Better Than Cash Alliance does so routinely anyway. If they publish a brochure meant to mobilize governments and other cooperation partners for the fight against cash, they call this brochure a “UN-report” and call themselves “a UN-based organization”.⁸

The goals of the alliance are neatly summarized in the lengthy subtitle of a press release by MasterCard, declaring their joining of the alliance: “\$1.5 Million Grant Adds Momentum to Global Movement to Empower People and Grow Economies by Shifting from Cash to Electronic Payments”. The text continues:

“MasterCard is excited to join the Better Than Cash Alliance to help educate and engage the public on the cost of cash to society which can be as much as 1.5 percent of a country's GDP,”

⁶ McKinsey & Company: McKinsey on Payments. March 2013.

⁷ www.uncdf.org/history.

⁸ Siehe z. B.: UN report: Social network payments now reach nearly US \$3 trillion in China. Message posted at <https://www.betterthancash.org> on 19.4.2017.

said Ann Cairns, President, International Markets at MasterCard.

“Electronic payments have been proven to boost economic growth and accelerate financial inclusion – but we recognize that to move the needle, businesses, governments and NGOs need to work in partnership.”⁹

It takes some chutzpa, to talk about empowerment while you want to take away the option from people to pay autonomously, and instead force them to employ middlemen, using means of payment which are under the ultimate control of others.

Until at least 2010 MasterCard made no secret of the fact that their war on cash was only meant to increase their profits. Then, ostensibly, in 2011 the company hit upon the realization that it matters more to be a good global citizen and to fight poverty. The term “war on cash” did not fit any more into this new corporate responsibility narrative from wonderland. Thus the last time the term was used by MasterCard-representatives was presumably in 2010, the year in which Bill Gates and MasterCard started setting the scene for the Better Than Cash Alliance. At the time, the business magazine *Forbes* wrote an article about massive increases in profits that MasterCard expected. Quote: “The gains, the company says, will be coming from the growth of card and other electronic-based means of payment, which are a product of what MasterCard chief executive Ajay Banga calls a ‘war on cash’.”¹⁰

The Better Than Cash Alliance explains their goals on their website in the following way: “The Better Than Cash Alliance is a partnership of governments, companies, and international organizations that accelerates the transition from cash to digital payments in order to reduce poverty and drive inclusive growth.”¹¹ What used to be called “war on cash” to increase the profits of the financial sector, was rebranded as a campaign for financial inclusion to help the poor. In truth and practice though, financial inclusion and “war on cash” are synonyms. The goal is to push back cash payments – with a focus on poor people in poor countries, who have until now not been using formal banking services. This would be a worthy goal in principle. It is the normal commercial goal of financial institutions and it can well coincide with the interests of the targeted customers. If the financial industry offers services to the poor which are affordable and more useful for some purposes than cash, that would help the poor while at the same time generating a profit. This is the invisible-hand of a market economy in action. It is nothing special and nothing particularly worthy of special official promotion. Promoters of financial inclusion try to make something very special and important out of it by arguing that financial inclusion is something like a magic wand against poverty and underdevelopment.

“Financial inclusion has been broadly recognized as critical in reducing poverty and achieving inclusive economic growth”, the Better Than Cash Alliance claims on their website in telltale passive tense. Also inequality is claimed to be reduced and women are claimed to be empowered if more payments are done electronically.

Since they have declared their own business interest as being completely in sync with the fight against poverty and underdevelopment, MasterCard and Visa and their partners can openly push ahead with an ostensibly well-meaning global conspiracy to eliminate cash. Even though they don’t give press conferences and try to keep the whole affair in specialist circles,

⁹ MasterCard: “MasterCard Joins Better Than Cash Alliance.” Press Release. No date (2013).

¹⁰ Carl Guterrez: “MasterCard Goes To War With Cash”. *Forbes* (online). 15.9.2010.

¹¹ <https://www.betterthancash.org/about>.

real secrecy is not required. If they are confronted with the suspicion that they just want to increase their profits, they don't even have to deny it. They will just ask you what is wrong with making a profit while you are doing such a grand thing like erasing poverty.

The only problem with that narrative is that they have been swinging this magic wand for more than 20 years now. They just gave it a new name every time it became too obvious that it was not nearly as effective in fighting poverty, as it was in generating corporate profits.

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SUGGESTED CITATION:

Norbert Haering, "Who is behind the campaign to rid the world of cash?", *real-world economics review*, issue no. 86, 10 December 2018, pp. 2-14, <http://www.paecon.net/PAEReview/issue86/Haering86.pdf>

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The trouble with human capital theory

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Abstract

Human capital theory is the dominant approach for understanding personal income distribution. According to this theory, individual income is the result of “human capital”. The idea is that human capital makes people more productive, which leads to higher income. But is this really the case? This paper takes a critical look at human capital theory and its explanation of personal income distribution. I find that human capital theory’s claims are dubious at best. In most cases, the theory is either not supported by evidence, is so vague that it is untestable, or is based on circular reasoning. In short, human capital theory is a barrier to the scientific study of income distribution.¹

Keywords human capital theory, income distribution, critique, hierarchy, productivity, power

1. Introduction

Human capital theory is the dominant approach for understanding personal income distribution. According to this theory, individual income is the result of ‘human capital’. The idea is that human capital makes people more productive, which leads to higher income. But is this really the case? This paper takes a critical look at human capital theory and its explanation of personal income distribution. I find that human capital theory’s claims are dubious at best. In most cases, human capital theory is either not supported by evidence, is so vague that it is untestable, or is based on circular reasoning. In short, human capital theory is a barrier to the scientific understanding of income distribution.

Human capital theory’s causal chain

human capital \Rightarrow productivity \Rightarrow income

My discussion is organized around human capital theory’s causal chain, shown above. What I hope to show is that this causal chain is deeply flawed and is contradicted by the available evidence.

After a brief review of the origins of human capital theory (Section 2), I investigate the link between productivity and income (Section 3). Scores of empirical investigations have purported to find evidence for such a link. The problem is that they are all based on circular logic. They find a link between productivity and income because they measure productivity *in terms of income*. But when productivity is measured objectively using physical units, the link between income and productivity becomes tenuous. I find that productivity differences between workers are too small to explain observed levels of income inequality. A further problem is that productivity may not even be an “individual trait”, as human capital theory claims. Evidence from animal studies suggest that social setting can affect individual productivity. In other words, productivity can be a ‘social trait’.

¹ Data and analysis for this paper are available at the Open Science Framework: <https://osf.io/m9gpc/>

After finding little evidence for the productivity-income hypothesis, I look for a relation between human capital and income (Section 4). I find that this leads to a Catch-22 situation. If we use an *expansive* definition of human capital, objective measurement becomes virtually impossible. But if we use a *restrictive* definition (that is measurable), we can account for only a small fraction of income variation. Proponents of human capital theory often use a bait switch technique. They begin with an expansive definition of human capital that is unmeasurable. But when it comes time to justify the theory, they point to the (very modest) empirical success of a narrow definition of human capital. The form of human capital that is most often trumpeted is education. The problem is that education's effect on income appears to be dwarfed by the effect of hierarchical rank.

In Section 5, I consider the possibility that hierarchical rank is just a potent form of human capital. But this hypothesis has a key deficiency. Hierarchical income gains are far larger than the observed differences in human productivity. But if not productivity, then what explains income returns to hierarchical rank? It is here that human capital theory becomes a barrier to scientific progress. When we assume that income is caused by characteristics of the *individual*, we fail to consider the obvious alternative. What if individual income has a *social* cause? In a hierarchy, the most obvious social cause is the chain of command, which is effectively a tool for concentrating power. What if *power* explains the returns to hierarchical rank? I find evidence to support this hypothesis. Relative income within firms scales strongly with the number of subordinates (which I take to be a measure of hierarchical power).

I conclude in Section 6 with thoughts about future directions for income distribution theory. If we abandon human capital theory, what should we replace it with? I think we should focus on the power relations within social hierarchy. Hopefully this will allow us to move forward from the half-century dead-end that has been human capital theory.

2. Human capital theory's origins

Human capital theory originated in the mid-20th century work of Mincer (1958), Schultz (1961), and Becker (1962). These authors proposed a remarkably simple explanation of personal income. The idea is that individuals can gain skills (human capital) that will make them more productive. This enhanced productivity then leads to greater income. As I discuss below, this was not a new idea. The main accomplishment of human capital theory was to make this vision consistent with the rest of neoclassical theory.

In many ways, human capital theory was an inevitable byproduct of a century of political economic thought. The key ingredient was the deep-rooted productivity-income hypothesis. The idea that income stems from productivity has been a central tenet of political economy for more than a century. It was formalized in neoclassical theory by Wicksteed (1894) and Clark (1899). Both authors theorized that income distribution obeyed a "natural law". In a market economy, each factor of production would earn its marginal product. This was the incremental increase in output caused by the incremental increase in input of capital/labor. Thus, if a capitalist earned more than a worker, it was because an additional unit of 'capital' added more to output than an additional unit of labor.

Marginal productivity theory was developed to explain *functional* income distribution – the income split between workers and capitalists. But it logically implies a theory of *personal* income distribution. Let's suppose that the productivity-income relation is universal. It follows

that income differences between *workers* (who all earn *labor* income) must be due to differences in *individual* productivity. In hindsight, the development of human capital theory was only a matter of time. According to neoclassical theory, capitalist income stems from the productivity of capital. Maybe something similar is true for workers? This was the hypothesis proposed by Mincer, Schultz, and Becker. Suddenly we could think of “skills” as “human capital”, just like we could think of machinery as “capital”. Wage differences between workers could then be attributed to differences in “human capital”.

Incidentally, neoclassical thinkers were not the only ones to arrive at this conclusion. Some Marxists had very similar ideas. On the face of it, Marxist theory is diametrically opposed to neoclassical theory. Marx (1867) thought that capitalists earned their income by *exploiting* workers. This was very different from the neoclassical vision of class harmony. But what about income differences between workers? Here, Marxist theory and human capital theory are not that far apart. According to Marx, labor produces all value. But this implies that high-paid skilled workers must be more *productive* than low-paid unskilled workers. What accounts for these productivity differences? According to the Soviet economist Isaak Illich Rubin (1973), it is the additional *training* of skilled workers that makes them more productive. This thinking is virtually identical to human capital theory.

Thus, the productivist tendencies of political economy naturally led to some form of human capital theory. But there is a major sticking point to this approach. If income is caused by productivity, then human productivity must be as unequally distributed as income (or nearly so). But this possibility was challenged by the work of Francis Galton and Vilfredo Pareto. Galton (1869) discovered that human characteristics were normally distributed. No matter what was measured (height, weight, IQ, etc.), human characteristics tended to clump around an average value. It follows that human productivity should also be normally distributed. The problem is that income bucks this trend. Vilfredo Pareto (1897) showed that income distributions were highly skewed. Income was far more unequally distributed than were human characteristics. Political economists have been grappling with this paradox for a century (Sahota, 1978).

The most common resolution to the Galton-Pareto paradox is to assume that abilities have a multiplicative effect on productivity (Boissevain, 1939; Mandelbrot, 1960). Human abilities remain normally distributed, thus satisfying Galton’s findings. At the same time, the multiplicative effect means that productivity can be highly skewed. This satisfies Pareto’s findings. This thinking is often expressed as a production function. Workers’ output (Y) is written as an exponential function of the sum of different abilities (a_i):

$$Y = e^{a_1+a_2+\dots+a_i} \tag{1}$$

This thinking begs a question. Are abilities *innate*? Or are they *learned*? Human capital theory asserts that most abilities are learned. But this has been a major source of controversy. According to ‘screening’ theory, education does not increase ability. Instead, education simply sorts individuals by their pre-existing abilities (Spence, 1978; Hungerford and Solon, 1987).

While historically important, I find this ‘screening’ debate largely irrelevant. The important question is not whether abilities are innate or acquired. Instead, the important question is – *can productivity differences explain income differences?* If not, then both screening theory and human capital theory have a serious problem.

3. Productivity and income

Any theory worth its salt must make falsifiable predictions. Human capital theory's prediction is unambiguous: workers' income stems from productivity. Unfortunately testing this prediction leads to a measurement quagmire from which few economists escape.

3.1 A measurement quagmire

To measure a worker's marginal productivity, we must isolate the change in a firm's output that is due to the change in labor input *alone*. In most situations, this is virtually impossible (Pullen, 2009). For instance, we must be able to objectively measure the quantity of capital, in order to hold it constant. But as the "Cambridge capital controversy" showed, we cannot measure the quantity of capital independently from the distribution of income (Cohen and Harcourt, 2003; Hodgson, 2005; Nitzan and Bichler, 2009; Robinson, 1953; Sraffa, 1960). Since it is the distribution of income that we wish to explain, this is a bit of a problem.

We must also be able to objectively measure output. But how do we compare workers who have *qualitatively different outputs*? For instance, how can we determine if a potato farmer is more productive than a composer? Neoclassical theory solves the problem by slight of hand. It assumes a one-commodity economy, in which output comparison problems do not exist (Colacchio, 2018).

But applied economists cannot be content with this approach. Real-world tests of marginal productivity theory require comparing workers with different outputs. This means choosing a common quantitative attribute of analysis. But the choice of attribute is subjective, and different attributes will lead to different results. Economists make things worse by choosing *monetary value* as the attribute of comparison. Thus, labor productivity is generally measured using sales or value-added per worker (Abowd et al., 1999; Haltiwanger et al., 1999; Haskel et al., 2005; Hellerstein et al., 1996; Hoegeland, 1999; Iranzo et al., 2008; Oulton, 1998). The problem with this approach is that it relies on circular logic. According to theory, income is explained by productivity. But when the theory is tested, productivity is *defined in terms of income*.

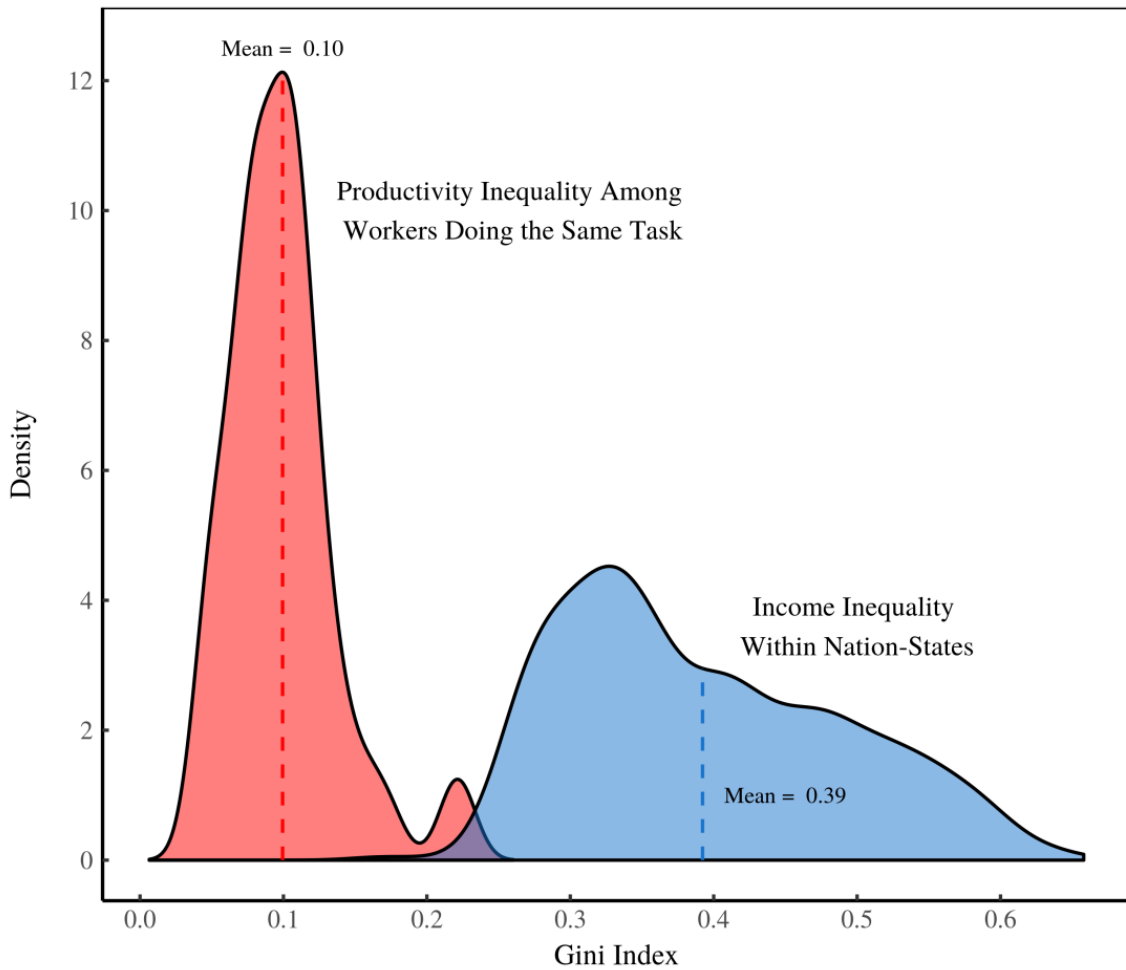
Based purely on accounting principles, we expect wages to be correlated with sales/value-added per worker. Double entry accounting principles dictate that firm value added (Y) is equivalent to the sum of all wages (W) and capitalist income (K). If we divide by the number of workers (L), we find that value-added per worker is equivalent to the average wage ($w = W/L$) plus K/L :

$$\frac{Y}{L} = \frac{W + K}{L} = w + \frac{K}{L} \quad (2)$$

Sales (S) are similar, but include an additional non-labor cost term (C):

$$\frac{S}{L} = \frac{W + K + C}{L} = w + \frac{K + C}{L} \quad (3)$$

Figure 1 Labor productivity inequality vs. income inequality



Note: Using a Gini index, this figure compares the inequality of worker productivity to income inequality within nation-states. Data for worker productivity dispersion comes from Hunter et al. (1990), who report the coefficient of variation of productivity among workers conducting the same task. Data plotted here shows the distribution of productivity inequality for 52 different tasks. I convert Hunter's data to a Gini index by assuming that worker productivity is lognormally distributed. The Gini index (G) of a lognormal distribution with a coefficient of variation c_v is

$$G = \left(\frac{1}{2} \sqrt{\log(c_v^2 + 1)} \right)$$

I plot the resulting distribution against the distribution of Gini indexes of income inequality for all country-year observations in the World Bank database (series SI.POV.GINI).

Thus, if we look for a correlation between average wage (w) and value-added/sales per worker (Y/L or S/L), we will surely find it. Simple accounting definitions dictate that average wage is a major component of value-added per worker.

3.2 Measuring productivity differences objectively

Under what conditions can we objectively compare differences in workers' output? The conditions are extremely restrictive. We can only compare workers who produce the *same* output. Most economists have not been interested in such measurements. However, the psychologist John E. Hunter made it part of his life's work. Hunter et al. (1990) report output

variability among workers doing the same task. Importantly, many different types of tasks are measured.

The question is, how great is this output variability? Can it conceivably account for observed levels of income inequality? I test this possibility in Figure 1. For each of the 52 different tasks measured by Hunter et al., I calculate a Gini index of productivity inequality. I then plot the spread of this labor productivity inequality. The results cluster around a Gini index of 0.1. Interestingly, this is consistent with the known dispersion of human abilities. For instance, we can take the SAT test as one measure of human ability. In 2017, the average score on the US SAT was 1060, and the standard deviation was 195 (CollegeBoard, 2017). Assuming a normal distribution, this corresponds to a distribution of ability with a Gini index of 0.1.

How does this productivity dispersion compare to levels of income inequality? To make this comparison, Figure 1 plots the distribution of income inequality within all nation-states in the World Bank database. The results do not bode well for human capital theory. Productivity inequality is far too small to account for observed levels of income inequality.

3.3 Is productivity an “individual trait”?

Let's be generous to human capital theory and put aside this under-explanation problem. Let's suppose that productivity inequality is similar to income inequality. Even then, there is a problem with the productivity-income hypothesis. Human capital theory assumes that productivity is an *individual* trait. But this could be wrong. Individual productivity could be a *social* trait.

Experiments by the poultry geneticist William Muir highlight this possibility. Muir conducted selective-breeding experiments that attempted to raise chickens' egg-laying productivity. In one experiment, Muir selected the most productive hen from each group to breed the next generation of hens. What happened? Evolutionary biologist David Sloan Wilson summarizes:

“Egg productivity plummeted, even though the best egg-layers had been selected each and every generation. The reason for this perverse outcome is easy to understand, at least in retrospect. The most productive hen in each cage was the biggest bully, who achieved her productivity by *suppressing* the productivity of the other hens” (Muir and Wilson, 2016, emphasis added).

The lesson, according to Wilson, is that traits that can be “measured at the individual level” may not actually be “individual traits”:

“Muir's experiments ... challenge what it means for a trait to be regarded as an individual trait. If by ‘individual trait’ we mean a trait that can be measured in an individual, then egg productivity in hens qualifies. You just count the number of eggs that emerge from the hind end of a hen. If by ‘individual trait’ we mean the process that resulted in the trait, then egg productivity in hens does not qualify. Instead, it is a social trait that depends not only on the properties of the individual hen but also on the properties of the hen's social environment” (Muir and Wilson, 2016).

Human capital theory makes a seemingly self-evident assumption: the productivity of individuals is an “individual trait”. But as Wilson notes, this is faulty logic. When we study

productivity differences among humans, we must consider the social context. Just as with hens, highly productive humans may actually be suppressing the productivity of others. This behavior would invalidate the premise of human capital theory (and much of neoclassical economics).

4. Human capital and income

Human capital theory posits a joint relation between human capital, productivity, and income. Unfortunately, the productivity-income component seems tenuous at best. But perhaps there is still a link between income and human capital? Let's investigate.

The human-capital-income link has been a Catch-22 for empirical researchers. On the one hand, restrictive definitions of human capital *correlate poorly with income*. On the other hand, expansive definitions of human capital are often so vague that they are *unmeasurable*. The first problem was recognized by Jacob Mincer, a pioneer of human capital theory. In his initial work, Mincer defined human capital restrictively as the number of years of formal education (Mincer, 1958). But he later found that this accounted for a very small portion of income variability:

“Simple correlations between earnings and years of schooling are quite weak. Moreover, in multiple regressions when variables correlated with schooling are added, the regression coefficient of schooling is very small” (Mincer, 1974).

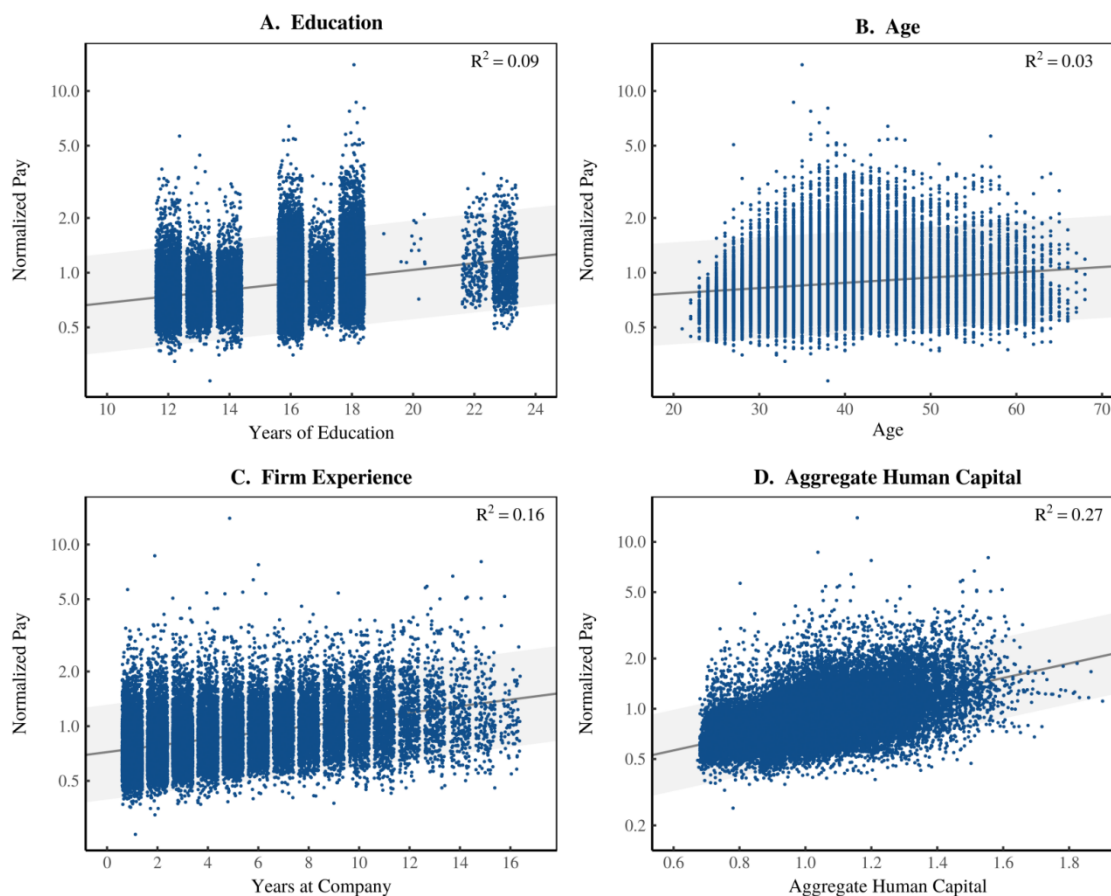
In the face of this failure, many researchers broadened their definition of human capital in an *ad hoc* manner. For just one example, take Gregory Mankiw's definition in his bestselling microeconomics textbook. He defines human capital expansively as “the accumulation of investments in people” (Mankiw, 2012). It is hard to see how this could possibly be measured objectively.

What has become common is a bait-and-switch technique. Economists begin with an expansive definition of human capital that is unmeasurable. But when it comes to justifying the theory, they point to the modest empirical success of a more restrictive definition of human capital. Mankiw is a case in point. After offering his expansive definition above, Mankiw switches to a more restrictive definition to offer empirical evidence. He writes:

“The most important type of human capital is *education*. ... Not surprisingly, workers with more human capital on average earn more than those with less human capital” (Mankiw, 2012).

Of course, Mankiw fails to mention that the correlation between education and earnings is low. Still, income gains due to education are invariably used to justify human capital theory. Why?

Figure 2 Returns to education, age, and experience in the BGH firm



Note: This figure analyzes returns to education, age, and firm experience in the BGH firm from 1969 to 1985. The vertical axis of each panel shows normalized pay (income relative to firm average pay in the year in question). Each data point represents an individual in a given year. Panel A shows income returns to years of formal education. Panel B shows income returns with age. Panel C shows income returns with years of firm experience. Panel D shows the relation between income and individuals' aggregate human capital stock (see Equation 4). All R^2 values are from regressions on the logarithm of income. Grey regions indicate the 95% prediction interval for each regression. To better visualize discrete data, "jitter" has been added to the horizontal axis of Panels A-C.

4.1 Education: the only game in town?

It is true that education has a weak effect on income. But it is also true that almost *everything* we can measure about individuals has a weak effect on income (when measured by raw correlation). What is important is the *relative* size of an effect. In relative terms, the income-effect of education and training is quite strong. This is a fact that heterodox economists often begrudgingly concede to human capital theory (even if they do not accept human capital theory's explanation for the returns to education). In this sense, education is treated as the only game in town.

But is this actually the case? Does education (and other forms of training) affect income more strongly than any other factor? Cracks in this argument were first exposed by Eric Wright (1979). Wright found that hierarchical rank within firms affected income more than education.

But how general is this result? Because the empirical work on firm hierarchy is quite sparse, it is difficult to say. However, the available case-study evidence does not bode well for human capital theory.

The most thorough case study of firm hierarchy (to date) was conducted by Baker, Gibbs and Holmstrom (1993). I will refer to this as the BGH study. BGH analyze the hierarchical structure of a large American firm for a period of two decades, beginning in the late 1960s. And unlike other case studies of firm hierarchy, BGH have made their raw data publicly available. I analyze the BGH dataset to see if Wright's results hold up.

Let's look first at the relation between individual income and years of formal education in the BGH firm. Figure 2A plots normalized income (income relative to the firm mean in a given year) against years of formal education. As expected there is a positive correlation, but it is weak. Next let's look at age. If we are generous to human capital theory, we can imagine age as measure of the human capital accumulated through life experience. As shown in Figure 2B, incomes increase with age, but the relation is very weak. What about firm experience? We can treat firm experience as a measure of on-the-job training and/or acquired skill. Not surprisingly, experience at the BGH firm has a significant effect on income (Fig. 2C).

Let's be generous to human capital theory and further suppose that education, age, and firm experience all contribute to an individual's *aggregate* stock of human capital, K:

$$K = c_1(\text{education}) + c_2(\text{age}) + c_3(\text{firm experience}) \quad (4)$$

How strongly does this aggregate human capital stock affect income? To answer this question, we need to provide values for the parameters c_1 , c_2 , and c_3 . These parameters weight the various forms of human capital. To my knowledge, human capital theory provides no way of determining these parameters. Instead, econometricians typically estimate them using multivariate regression. This chooses parameters such that K has the *maximum* effect on income.

Let's give human capital theory the benefit of the doubt and do this. I estimate Equation 4 parameters using a multivariate regression on the logarithm of income. I then see how strongly K predicts income. The results are shown in Figure 2D. As expected, the aggregate human capital stock (K) affects income more strongly than education, age, or firm experience in isolation. Aggregate human capital accounts for roughly one third of the variation of log income in the BGH firm.

4.2 Returns to hierarchical rank

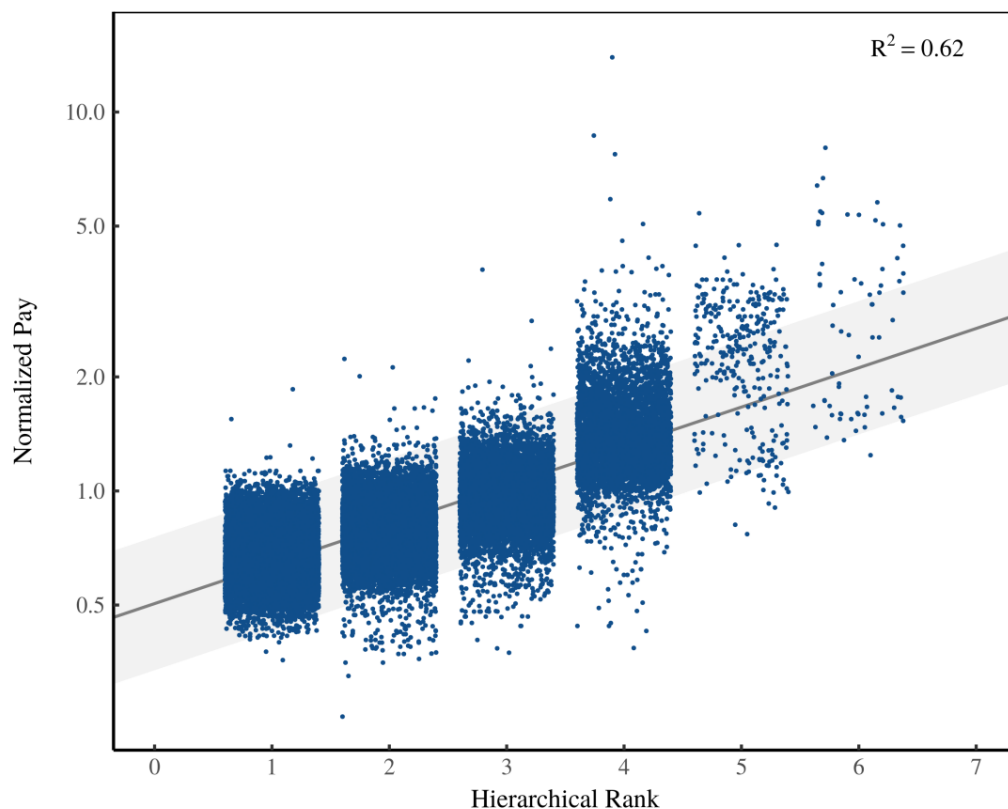
In the BGH firm, the income-effect of aggregate human capital is sizable. But the problem is that it pales in comparison to the effect of *hierarchical rank*. As shown in Figure 3, hierarchical rank accounts for almost two thirds of the variation of log income in the BGH firm. This is roughly double the income variation accounted for by our aggregate human capital stock.

But perhaps we are not being fair to human capital theory. It is possible that a large part of the returns to hierarchical rank are due to the returns to education, age, and firm experience. Conversely, it is possible that none of the returns to education, age, and firm experience are due to returns to hierarchical rank. We can untangle this relation using a multivariate analysis.

I regress log income onto hierarchical rank, education, age, and firm experience. Table 1 shows the results. The table values represent the partial correlation between the given factor and log income. These values indicate the correlation when the effects of the other factors *have been removed*.

Again, the results do not sit well with human capital theory. The isolated effect of hierarchical rank is far larger than any human capital factor. Interestingly, the effect of firm experience disappears when we account for changes in hierarchical rank. This suggests that returns to firm experience are caused mostly by climbing the corporate ladder. In other words, individuals who fail to advance in rank do not have returns to firm experience.

Figure 3 Returns to hierarchical rank in the BGH firm

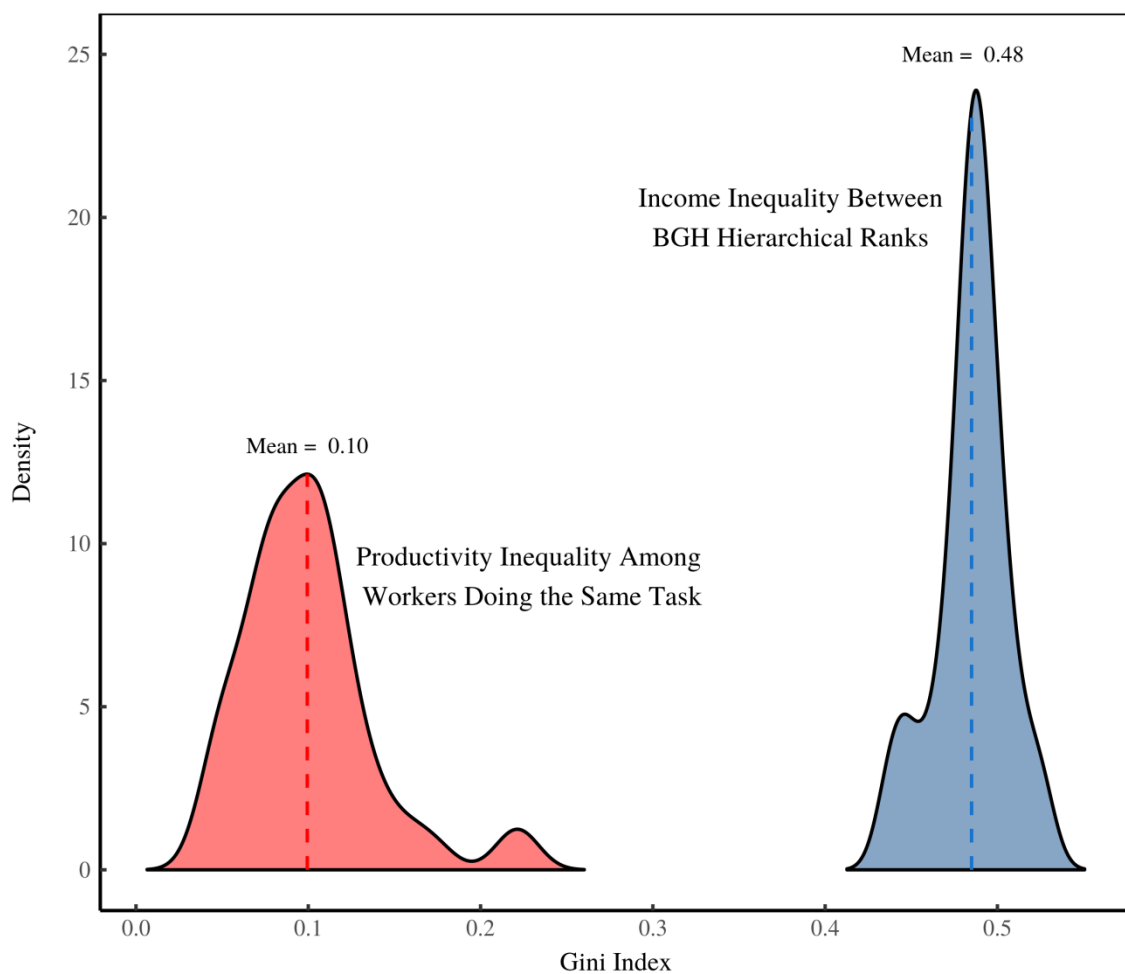


Note: This figure analyzes returns to hierarchical rank in the BGH firm from 1969 to 1985. The vertical axis of each panel shows normalized pay (income relative to firm average pay in the year in question). Each data point represents an individual in a given year. The R^2 value is from a regression on the logarithm of income. The grey region indicates the 95% prediction interval of the regression. In order to better visualize discrete data, horizontal “jitter” has been added to the horizontal axis.

Table 1 A Multivariate analysis of BGH data

Partial Correlation with Log Income	
Hierarchical Rank	0.705
Education	0.189
Age	0.103
Firm Experience	-0.039

Figure 4 Labor productivity inequality vs. income inequality between BGH hierarchical ranks



Note: Using a Gini index, this figure compares the inequality of task-specific worker productivity to income inequality between BGH hierarchical ranks. Data for worker productivity dispersion comes from Hunter et al. (1990). (For methods see Figure 1). Data plotted here shows the distribution of productivity inequality for 55 different tasks. I compare this to the income inequality between BGH hierarchical ranks. This equals the Gini index of hierarchical rank mean incomes. The blue density curve shows the distribution of annual observations.

5. Explaining income returns to hierarchical rank

The BGH evidence suggests that hierarchical rank affects income far more than education (and other forms of training/experience). But perhaps this is not a blow to human capital theory. Maybe hierarchical rank indicates some unmeasured form of human capital? Let's consider this possibility.

The most general problem with this interpretation is that it has the hallmark of pseudo-science. Acemoglu and Autor (2011) call this the “*unobserved heterogeneity issue*”. It is always possible to presume that “all pay differences are related to skills (even if these skills are unobserved to the economists in the standard data sets)” (ibid). While hinting that this is a problem, Acemoglu and Autor go on to state that it is “not a bad place to start when we want to impose a conceptual structure on empirical wage distributions” (ibid). I disagree. Karl Popper (1959) long ago cautioned against theories that can explain any conceivable evidence. To use Wolfgang Pauli's phrase, such theories are “*not even wrong*” (Burkeman, 2005).

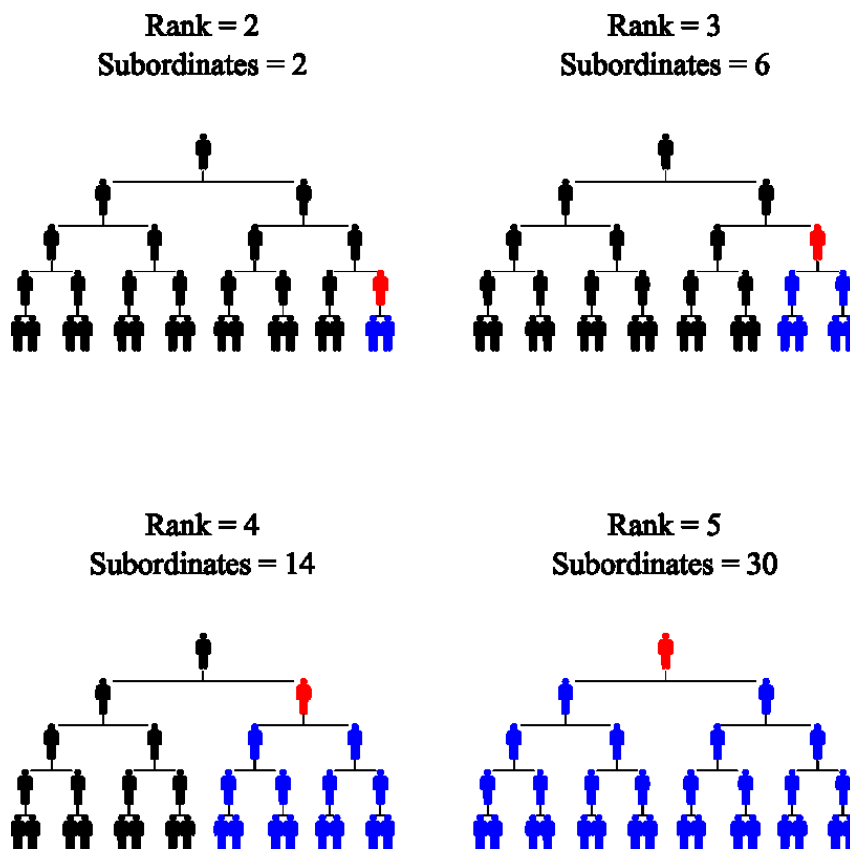
But let's put aside this problem. If hierarchical rank is a form of human capital, what does this imply? Human capital theory is very clear that income is proportional to productivity. Thus, returns to hierarchical rank must indicate productivity difference between ranks.

But here we run into a problem. Income increases *exponentially* with hierarchical rank. Are these exponential returns really due to productivity gains? Unfortunately, we cannot test this directly, since we do not have direct (physical) measures of productivity for the BGH workers. What we can do is return to the task-specific productivity inequality shown in Figure 2. To reiterate, this is the productivity dispersion among workers doing the same task. I have argued that this is the only way to objectively measure individual productivity differences. Can this dispersion explain income inequality between BGH hierarchical ranks?

Figure 4 tests this possibility. Here I re-plot the productivity dispersion data from Figure 2. I then compare this to the income inequality between BGH hierarchical ranks. To get the latter, I calculate the mean income in each hierarchical rank of the firm (in a given year). I then calculate the Gini index of these mean incomes. This is equivalent to selecting a representative individual from each BGH hierarchical rank, and then measuring the income inequality between these individuals.

The results are unambiguous. Income inequality between BGH hierarchical ranks is far greater than our measure of productivity dispersion. Thus, it seems improbable that income returns to hierarchical rank are due to productivity gains.

Figure 5 The exponential growth of hierarchical power with rank



Note: In an idealized hierarchy, the total number of subordinates (blue) tends to grow exponentially with hierarchical rank (red).

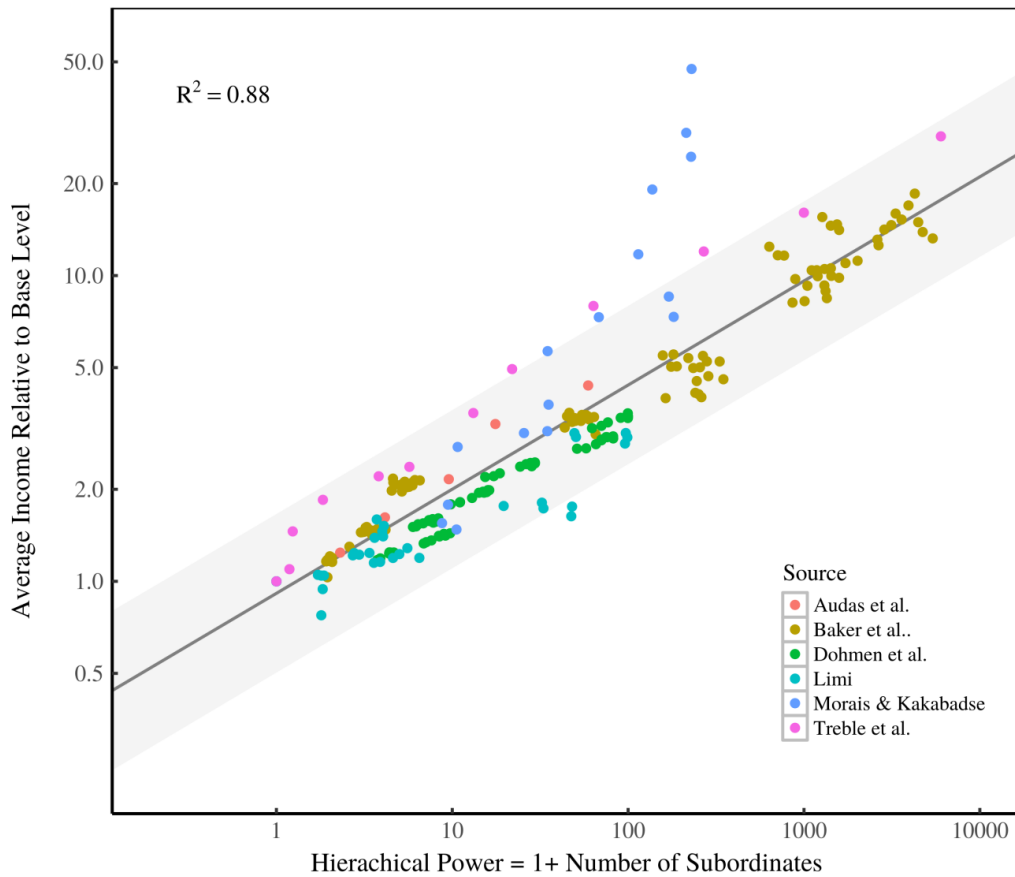
5.1 Power, not productivity

If not productivity, then what explains the exponential returns to hierarchical rank? Here, human capital theory becomes a barrier to scientific progress. Why? The problem is that human capital theory puts the focus squarely on isolated individuals.

As long as we maintain this focus, we are blind to the obvious alternative hypothesis. What if income does not result from individual traits? What if income has a social cause?

Once we pose this alternative hypothesis, interesting ideas become possible. For instance, returns to hierarchical rank could be a function of *power*. This puts the focus on *relations* between people (not individual traits). One has power *in relation to* (and *because of*) others. Think of a military commander. His power is not an individual trait. Rather, it stems from *other* people's willingness to obey his commands.

Figure 6 Average income vs. hierarchical power within case-study firms



Note: This figure shows data from six firm case studies (Audas et al., 2004; Baker et al., 1993; Dohmen et al., 2004; Lima, 2000; Morais and Kakabadse, 2014; Treble et al., 2001). The vertical axis shows average income within each hierarchical level of the firm (relative to the base level), while the horizontal axis shows my metric for average power, which is equal to one plus the average number of subordinates below a given hierarchical level. Each point represents a single firm-year observation, and color indicates the particular case study. Grey regions around the regression indicate the 95% prediction interval. See Fix (2018c) for a detailed discussion of sources and methods.

The general study of power is complex, since power can have many forms. But in a hierarchy, power is easier to pin down. A hierarchy is a nested set of power relations between superiors and subordinates. Each superior wields power over his *direct* subordinates, but also his *indirect* subordinates. This feature has important consequences. As illustrated by Figure 5, the total number of subordinates tends to grow *exponentially* with hierarchical rank.

But what does this have to do with power? Consider the following Weberian definitions of power:

1. “the possibility of imposing one’s will upon the behavior of other persons” (Bendix 1998; cited in Wallimann et al. 1977)
2. “the chance of obtaining the obedience of others to a particular command” (Aron 1964; cited in Wallimann et al. 1977)

These definitions suggest that power within a hierarchy should be proportional to the number of subordinates under one's control. I put this into formula form as:

$$\text{hierarchical power} = 1 + \text{number of subordinates} \quad (5)$$

Everyone starts with a power of 1, meaning they have control over themselves. Hierarchical power then increases linearly with the number of subordinates.

The question is, can hierarchical power explain the income returns to hierarchical rank? Figure 6 suggests that it can. Here I plot data from six case studies of firm hierarchy. The vertical axis indicates average income within each hierarchical rank (of each firm). The horizontal axis indicates the average hierarchical power of the rank in question. The result is a tight correlation. This suggests that income within these firms is mostly a function of social position, rather than individual traits.

The results in Figure 6 beg more questions. Why does this correlation exist? What is the mechanism at work? Is it social norms? Rules of thumb? Ideology? Is the correlation unique to these firms? Or universal across all firms? Does it change with time? These are all open questions. The important point is that these questions will not be posed if we remain fixated on human capital theory.

6. Conclusions

Science is reductionism. However, income distribution theory has tended towards *greedy reductionism* – a term coined by Daniel Dennet. He writes:

“in their eagerness for a bargain, in their zeal to explain too much too fast, [greedy reductionists] ... underestimate the complexities, trying to skip whole layers or levels of theory in their rush to fasten everything securely and neatly to the foundation” (Dennett, 1995).

Human capital theory is *greedy reductionist*. It offers extremely simple principles that purport to explain *everyone's wages, all the time*. It posits a universal connection between human capital, productivity, and income. But when we look closely at this causal chain, it breaks down entirely. For the most part, productivity differences between individuals cannot be measured objectively. Studies that claim to find a link between income and productivity do so by using circular logic. And when we restrict ourselves to the objective measurement of productivity, we find that individual productivity differences are systematically too small to account for levels of income inequality.

Furthermore, there is no agreed upon definition of human capital. Most definitions are so vague that they are unmeasurable. And when we define human capital restrictively, it can account for only a small portion of income variation. The primary empirical justification for human capital theory has always been the income returns to education. Yet the available evidence suggests that education returns are dwarfed by returns to hierarchical rank. And returns to hierarchical rank are so large that they cannot plausibly be explained in terms of productivity.

To summarize, the evidence against human capital theory seems damning. And yet human capital theory continues to be the dominant theory of personal income distribution. Why? The problem is that economists treat human capital theory as though it were *true by default*. Neoclassical economists' unspoken article of faith is that wages stem from individual traits. All evidence is then interpreted as though this were true. If education and on-the-job training poorly explain income, this is not a problem. There must be some other skill that we are not measuring. Or what if hierarchical rank explains income better than education? Not a problem. Hierarchical rank must measure some form of human capital. When we think this way, the truth of human capital theory becomes a self-fulfilling prophecy.

We should not mince words. Human capital theory is a thought virus that is blocking the scientific study of income distribution. Alternative hypotheses are needed badly. I believe the most promising way forward is to focus on social hierarchy. When we do so, we acknowledge that individual income can have a social cause. The beauty of hierarchy is that it is both *ubiquitous* and it is *simple* enough that we can easily model it. The first step is to study how hierarchical rank affects income. This is difficult because the available data is sparse. But by using models, we can make estimates. For instance, using an empirically informed model, I have found that hierarchical rank affects US income more than any other factor for which data is available (Fix, 2018c). I have also found that firm hierarchy may be responsible for generating the power-law tail of US income distribution (Fix, 2018b). Hierarchy may even play a role in *functional* income distribution (Fix, 2018a).

These results are promising, but we should admit our state of ignorance. At present, we know very little about the role that hierarchy plays in determining income. And we will continue to know very little as long as human capital theory dominates the study of income distribution.

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SUGGESTED CITATION:

Blair Fix, "The trouble with human capital theory", *real-world economics review*, issue no. 86, 10 December 2018, pp. 15-32, <http://www.paecon.net/PAERreview/issue86/Fix86.pdf>

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A progressive trade policy

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Introduction

Donald Trump's trade wars have forced many of us to re-examine what we hope to see in trade policy. At least in rhetoric, he has made the trade deficit front and center on his trade agenda. Many of us have argued that the trade deficit has been a major factor in the loss of relatively high-paying manufacturing jobs. For this reason, there are some grounds for being sympathetic to Trump's approach. However, in other areas, like his promotion of intellectual property rights and his demands on rules for the digital economy, he is diametrically opposed to progressive goals in trade policy.

This essay examines these issues in some detail. It makes three main points:

- 1) The benefits from reducing the trade deficit, while still substantial, are not nearly as large as the damage caused by running large deficits in prior decades.
- 2) There is no reason that progressives should want stronger protections for intellectual property in trade deals. It is not "our" property at stake, but rather the property of large US corporations. We should be thinking about class, not country.
- 3) Rules on a digital economy need serious attention. We all have come to recognize the risks that social media outlets like Facebook and Twitter can present to democratic debate. Countries should not be deprived of the means to protect themselves from false stories being spread over these networks.

While Trump's trade agenda is not one that most progressives will choose to embrace, he has helped to open up the debate on these issues and increase the likelihood that trade may be set on a more progressive path than the one followed over the last four decades.

Does the trade deficit matter?

Many economists argue that the trade deficit should not concern us, that it is simply the result of the national savings and national investment balance. This is overly simplistic as a macroeconomic point and it ignores the compositional effect of a trade deficit.

As a macroeconomic point, the argument about national savings and investment balances is almost painfully silly. There is a national income accounting identity whereby the trade deficit (or more correctly, the current account deficit) must be equal to the gap between national savings and national investment. However, this identity says nothing about the direction of causation.

If we believe that the economy is always at or near full employment, then the savings/investment balance is fixed and trying to reduce the trade deficit in one area simply leads to an increase through another channel. For example, a tariff in this story would simply

lead to a rise in the value of the dollar, with the increase in the trade deficit from a higher valued dollar offsetting any reduction in the trade deficit from the tariff. The result is that the tariff simply ends up distorting trade, but does not affect the overall balance.

This story does not follow at all if we acknowledge that the economy is often far from full employment. In that case, a reduction in the trade deficit can increase output and employment, by creating more demand in the economy. With higher levels of output and employment, we will have more of both private savings (profits and savings from wage income) and public sector savings due to higher tax revenue. This means that the gap between domestic investment and domestic savings will be reduced by a rise in savings as a result of the lower trade deficit. The national income accounting balance still holds, but the trade deficit is now lower.

This is all basic logic that is taught in introductory economics classes, but we often see public debates that ignore it. The point is fundamental to any discussion of the trade deficit. As long as we do not think the economy is near full employment, the trade deficit can be affected by policy, apart from directly changing the domestic savings/investment balance.

Historically, the trade deficit has posed a problem not only because it was a drain on demand, but also because it affected the composition of employment. Since the overwhelming majority of trade is in manufactured goods, a larger trade deficit meant a loss of jobs in manufacturing. Manufacturing had historically been a source of relatively high-paying jobs for workers without college degrees. The loss of these jobs, therefore, reduced employment options for this large category of the workforce (still more than 60 percent of the workforce) and therefore put downward pressure on the wages of non-college educated workers more generally.¹

This trade deficit induced loss of manufacturing jobs had a huge impact on the labor market in the last decade.² After remaining roughly constant for three decades, manufacturing employment fell by more than 3.4 million from 2000 to 2007 (20 percent of total employment), before the Great Recession pushed employment even lower. This job loss was associated with an expansion of the trade deficit from 1.5 percent of GDP in 1996 to a peak of just under 6.0 percent of GDP in 2005 and 2006. While the strong economic growth of the late 1990s was sufficient to offset the rise of the trade deficit at the end of the decade, once the recession hit in 2001, and growth slowed in subsequent years, manufacturing employment plummeted.

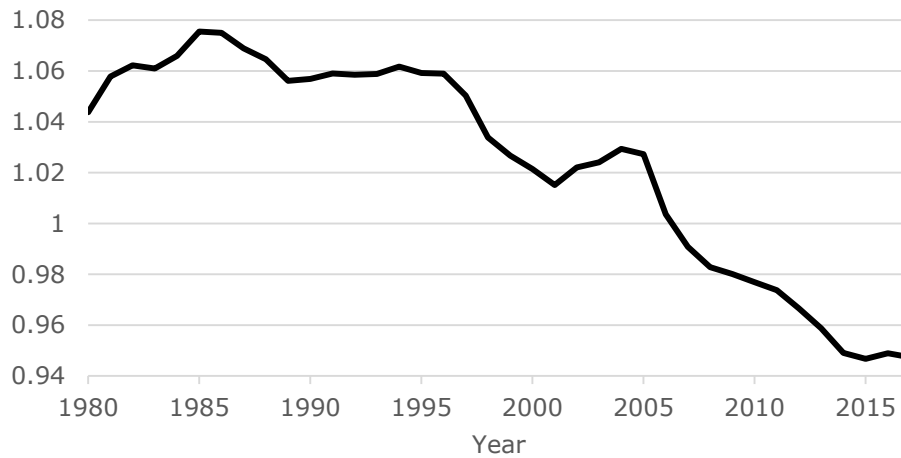
While this loss of manufacturing jobs was devastating to large sections of the industrial Midwest, it is not likely reversible. The relatively high-paying and union jobs that were lost are likely to be replaced by lower paying non-union jobs insofar as they come back as the trade deficit is reduced. We can see this through a variety of measures.

First, a simple comparison of the ratio of hourly wages for production and non-supervisory workers in manufacturing to the wages of private sector workers as a whole shows a persistent decline since 1996, as shown in Figure 1.

¹ Bivens (2013) and Krugman (2008).

² Autor et al (2016).

Figure 1 Ratio of average hourly earnings for workers in manufacturing to average hourly earnings in private sector overall, 1980–2017

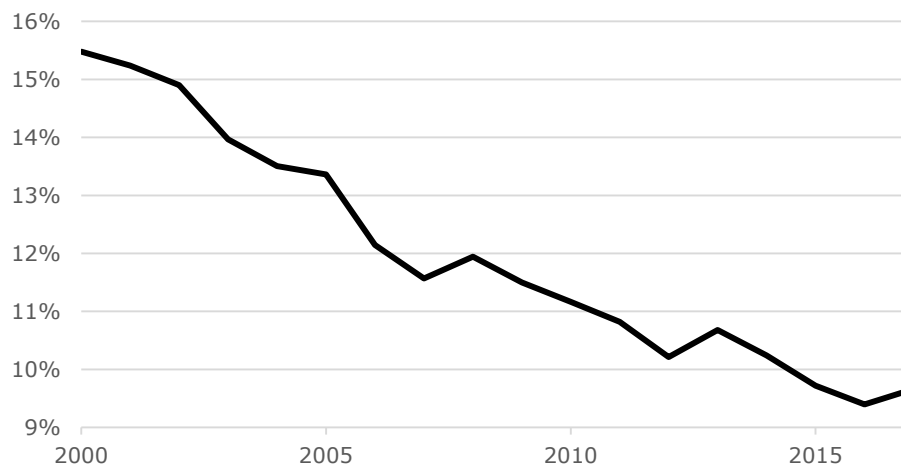


Source and notes: Bureau of Labor Statistics (2018b).

The ratio of hourly wages was 1.059 in 1996. It fell below 1.0 in 1997 and by 2017 it was down to 0.947. While manufacturing jobs more typically offer health care insurance and other benefits, meaning that the ratio of compensation rates would be somewhat higher, there is little doubt that the advantage for non-college educated workers from working in manufacturing has declined substantially over the last two decades.³

The decline in the premium for manufacturing employment also coincides with a decline in the unionization rate in the sector. This is shown for the years 2000 to 2017 in Figure 2.

Figure 2 Unionization rate in manufacturing, 2000–2017



Source and notes: Bureau of Labor Statistics (2018b).

³ An analysis that controls for gender, age, and education found that the premium for manufacturing employment for non-college educated workers fell from 13.1 in the 1980s to 7.8 percent in the period from 2010 to 2016 (see Mishel, 2018.) It is worth noting that the latter figure is an average for the seven-year period. Given the drop in the wage ratio throughout this period, the premium was almost certainly lower at the endpoint in 2016 than the average. It has likely continued to fall in the last two years.

In 2000, the unionization rate in manufacturing was 15.5 percent, two percentage points above the economy-wide average of 13.5 percent. By 2010, when manufacturing employment had bottomed out, the unionization rate had fallen to 11.2 percent. While there has been a modest increase in manufacturing employment since then, the number of union members in the sector has continued to fall. As a result, the unionization rate in manufacturing was down to 9.7 percent in 2017. This is actually below the economy-wide average of 10.7 percent, although still somewhat above the private sector average of 6.5 percent.

The implication of this pattern of wages and unionization rates is that we are unlikely to see a substantial growth in the number of relatively high-paying manufacturing jobs, even if we have a large reduction in the trade deficit. The jobs that would be created in manufacturing would likely be lower-paying on average than current jobs in manufacturing, and they would be less likely to be unionized.

For this reason, the compositional effect of a reduction in the trade deficit is not likely to provide a benefit to the labor market that is anywhere near as large as the harm caused by the rise in the trade deficit. Nonetheless, the benefit for less educated workers would not be altogether trivial.

If we envision that a successful policy on the trade deficit could reduce it by two percentage points of GDP, this would correspond to an increase in manufacturing output of 20 percent. If we assume that manufacturing employment rises proportionately, it would mean an increase in manufacturing employment of 2.6 million workers. In a workforce with almost 160 million workers, the addition of 2.6 million jobs offering somewhat higher pay than alternatives to non-college educated workers will not hugely change the position of these workers, but the effect will not be altogether trivial.

It is important to note that the wage benefit from increased manufacturing employment will be primarily for men. Employment in the sector continues to be overwhelmingly male, with women holding just 28.2 percent of the jobs in the sector, compared to 49.7 percent in the economy overall.⁴

The bottom line is that there would still be beneficial wage effects from compositional shift resulting from a lower trade deficit, but these are considerably smaller than they would have been in prior decades. The loss of millions of good-paying jobs, and the damage done to the communities that depended on them, is irreversible.

The other side of the trade deficit is the effect on overall demand. As noted earlier, this story remains poorly understood. A large trade deficit is a drain on aggregate demand, just as weak investment or weak consumption is a drain on aggregate demand.

For many decades, most economists denied that a sustained shortfall in demand could be a serious problem. While all but the most dogmatic real business cycle proponents acknowledged that the economy could face shortfalls of demand in a recession, the prevailing view was that these shortfalls would be relatively brief and could be readily offset by the Fed's monetary policy.

⁴ This only counts direct employment by the industry. The gender composition may be somewhat different for the 11.3 percent of manufacturing jobs that are filled through employment agencies. See Dey et al. (2017) and Bureau of Labor Statistics (2018a).

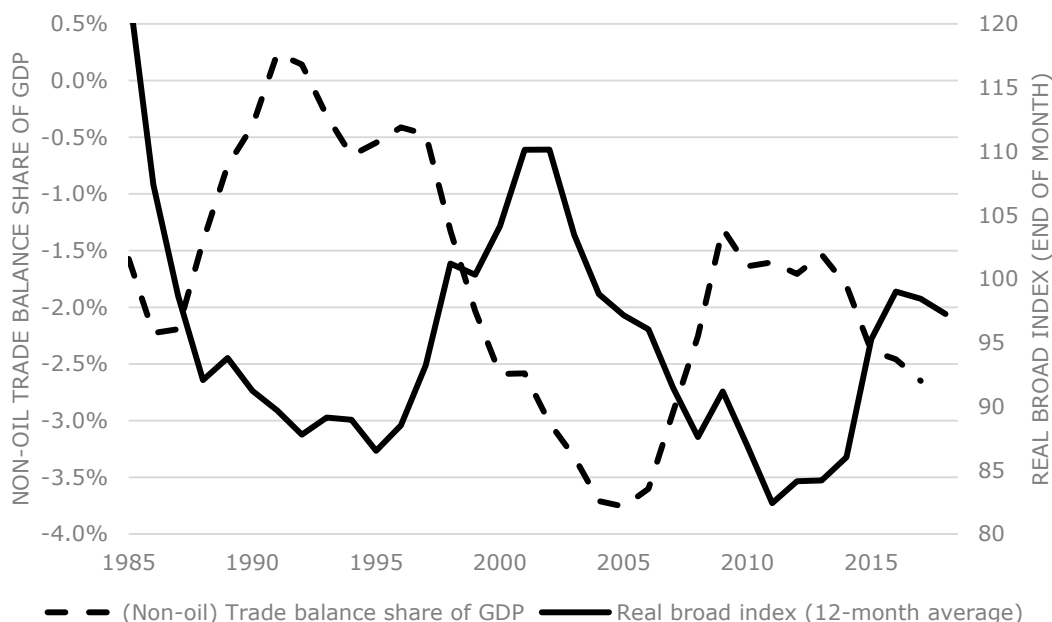
Since the Great Recession, the idea that “secular stagnation” a sustained shortfall in demand, could be a serious problem has been accepted by much of the mainstream of the profession. Nonetheless, the source of this shortfall is almost always seen as being in the weakness of consumption or investment demand, almost never in the trade deficit.

However, regardless of the preferences of economists, an increase in the trade deficit of two percentage points of GDP has the same impact on aggregate demand as a fall in consumption or investment of two percentage points of GDP. If we are concerned about the macroeconomic effects of the latter, then we must also be concerned about the macroeconomic effects of a large rise in the trade deficit.

While is true that a shortfall in demand from any source can be offset by increased government spending, there remain serious political concerns about running excessive budget deficits. In a context where the size of the budget deficit is limited for political reasons, we have to look to lower trade deficits as a potential route for sustaining levels of demand that are consistent with full employment. There is no magic to balanced trade, but a lower trade deficit will mean more demand in the economy. For this reason, we should be looking to policies that reduce the size of the trade deficit.

The simplest policy for reducing the trade deficit is reducing the value of the dollar. There is a strong relationship between the value of the dollar against other currencies and the non-oil trade deficit, as shown in Figure 3.

Figure 3 Non-oil trade balance as share of GDP vs. real value of the US dollar, 1985–2018



Source: Bureau of Economic Analysis and Federal Reserve Board.

The trade deficit had been relatively small through the early and mid-1990s. It exploded in the late 1990s in response to the run-up in the dollar following the East Asian financial crisis. As a result of that crisis (or more accurately, the bailout from the crisis) developing countries, adopted a policy of deliberately keeping down the value of their currency in order to run large

trade surpluses. While China was the most important actor, other developing countries also bought up massive amounts of reserves in order to keep down the value of their currencies against the dollar.

It is worth mentioning that the trade surpluses of developing countries were not necessary to support their growth. The major success stories in the developing world actually grew more rapidly in the early and mid-1990s when they were running trade deficits than in the last two decades. The idea that rich countries, and the US in particular, had to run trade deficits to allow the poor in the developing world to escape poverty contradicts both standard trade theory (poor countries are supposed to import capital) and actual history.

Reducing the value of the dollar is really just the standard story of how persistent trade deficits are supposed to be corrected in a system of floating exchange rates. In fact, the dollar would certainly have fallen in value relative to the currencies of our trading partners in the last decade if they had not bought up massive amounts of currency to be held as foreign reserves.

Incredibly, in national politics facts have been turned on their head. Somehow it is now a “protectionist” position to want a market-determined exchange rate, while those claiming to be “free traders” are fine with a dollar that has been deliberately pushed up by the actions of foreign central banks.

Getting a lower-valued dollar should not be a herculean task in trade negotiations. There is a precedent for a negotiated reduction in the value of the dollar, the Plaza Accord that was negotiated in 1985 under President Reagan. This led to a sharp reduction in the value of the dollar over the next three years against the currencies of our major trading partners at the time. This had the desired effect on the trade deficit. It had been rising sharply and had crossed 3.0 percent of GDP by 1985. The reduction in the value of the dollar led to a reversal, with the trade deficit falling to roughly 1.0 percent of GDP at the start of 1990, before the impact of the recession.

While other countries, most importantly China, would likely demand some quid pro quo in exchange for agreeing to raise the value of their currency, it is difficult to imagine that they would altogether refuse to bargain on this issue. The real value of the yuan has already risen substantially against the dollar over the last fifteen years. A further rise would not derail China's economy.⁵

It is likely that the United States could have persuaded China and other countries to raise the value of their currency in the last decade before trade destroyed so many good-paying manufacturing jobs. However, this was not a priority for the Bush administration, nor for leading Democrats who touted the virtues of a high dollar.

US trade negotiators were more concerned about issues like market access for our financial industry, or the patents and copyrights of the pharmaceutical industry, the software industry, and the entertainment industry. It is also important to remember that political powerful companies like Walmart benefited from having access to low-cost imports. They were not

⁵ China has managed to deal effectively with a sharp reduction in its trade surplus in the past. It went from having a surplus of 9.1 percent of GDP in 2008 to 1.8 percent of GDP in 2011. Through this period, it managed to sustain a near double-digit growth rate.

anxious to have the price of imports increase. For these reasons, adjusting currency values has not been a priority for US trade negotiators in recent years.

Intellectual property: it isn't ours

Much reporting on trade negotiations emphasize the importance of protecting "our" intellectual property from China and other countries who they claim do not sufficiently protect it. The argument, especially with respect to China, is not only do they not provide sufficient protections to the patents and copyrights of US corporations, but they require technology transfers as a matter of policy.

Specifically, a company like Boeing or GE will be required to have Chinese partners as a condition of setting up operations in China. The Chinese partner then gains access to the company's technology, which it then masters and becomes a competitor in future years.

The politicians and the media assert that the country as a whole has an interest in stopping this practice. We don't.

At the most basic level, why should we be upset that new companies are coming to the forefront in world markets and are able to deliver goods and services at lower prices than existing companies? This is what capitalism is supposed to be all about. Furthermore, if the deals requiring technology transfers were bad business for our companies, why do they do it? Boeing, GE, and the rest must have concluded that the benefits of doing business in China were so great that even if they had to transfer technology to a potential competitor they still end up better off than if they simply refused to set up operations there. There is no obvious reason that the US government should take this paternalistic position that it has to protect our largest corporations from their own short-sighted behavior.

This is very much a class story. If the United States can force China to accept terms that are better for our companies than the ones that they could negotiate individually, then they will end up with higher revenues and profits than would otherwise be the case. This is good for stockholders in these companies, but it means that everyone else will be paying higher prices and/or getting inferior products because our actions stunted the growth of an otherwise successful Chinese competitor.

There is an argument that these companies will hire more US workers as a result of a strong US position on technology transfer. This is possible, but the gains here are likely to be small. First of all, the reason they are going to China, to begin with, is that they are looking to get lower cost labor than is available in the United States. If the threat of technology transfer discourages companies from relocating operations to China in the first place, that means more jobs for US workers, not less.

Second, the location of the home country does not necessarily determine where the jobs will be. Millions of US workers are now working for foreign multinationals like Volkswagen, Toyota, Foxconn, and others. There is no reason to believe that, on net, we get more good-paying jobs in the United States if Boeing can locate in China without worrying about technology transfers than in a world where a Chinese competitor wins market share from Boeing and becomes a major supplier of planes in the United States and world market.

In the latter case, our planes are cheaper and/or better, which presumably means lower cost air travel. This both directly raises real wages and frees up more money to spend on other items. This is the classic argument for free trade. Why would “free traders” be opposed to it? The issue here is about protecting the profits of Boeing and other large companies; it is not about US jobs or fairness in trade deals.

The case that the US trade agenda is protectionist is even clearer with patent and copyright protections. These government-granted monopolies are equivalent to tariffs of many thousands of percent.

The impact is clearest and most pernicious in the case of prescription drugs. Patent-protected drugs often sell at prices that are several hundred times greater than their free market price.⁶ In addition to the enormous economic distortions created by market barriers of this magnitude, this is also a question of peoples’ lives and health. In nearly all cases drugs are cheap to manufacture, which means that they would be readily affordable for all but the very poor, if they were sold as generics at their free market price. Government-granted patent monopolies make these drugs incredibly expensive, which means that people without large amounts of money or insurance cannot afford them.

When the US government requires our trading partners to have stronger and longer patents and related protections for drugs, it is working to increase the profits of Pfizer and other pharmaceutical companies. It is not defending the interest of US workers. The same applies to efforts to strengthen copyright protections for Microsoft or Disney. This is good news for major shareholders in these companies, not for the rest of us.

In fact, we should see the licensing fees and royalties that these companies collect from our trading partners as being in direct competition with other exports. The basic logic is that if China has to pay more money to Pfizer and Disney in licensing fees and royalties, this will lead to a higher valued dollar, other things equal. (The need for dollars to pay these fees increases the demand for dollars in world currency markets.) With a higher valued dollar, other US goods and services are less competitive. In effect, a larger trade surplus on intellectual property means a larger trade deficit on everything else. For this reason, most of us have no interest in forcing other countries to pay our companies more for their intellectual property claims.

There is another concern that is often raised that if China and other countries can freely use all the research that US companies performed, then we will effectively have been made suckers by paying for their research. This sort of complaint ignores the realities of the world economy. China’s economy is already more than 25 percent larger than the US economy.⁷ It is on a path to be twice as large as the US economy in a decade. It also spends a considerably larger share of its GDP on research and development than the United States. This means that if there are no well-established rules on sharing the cost of research, China stands to lose much more than the United States. They will have much more technology to “steal” than we will.

For this reason, it is in China’s interest to develop international mechanisms for sharing of research costs. Hopefully, it will promote a more efficient model than the system of patent and

⁶ Collins (2016).

⁷ International Monetary Fund (2018).

copyright monopolies. Science and technology will advance more quickly if research findings are openly shared and widely available. In this world, the costs for developing drugs, medical equipment, software, and other items would be paid up front, then all these items could be sold in a free market with no restrictions.⁸

Moving beyond intellectual property, progressives should look to subject the most highly paid professionals, specifically doctors and dentists, to international competition. Doctors in the United States earn more than \$250,000 a year on average, roughly twice as much as their counterparts in other wealthy countries. There is a similar story with dentists. If the barriers that protect these professionals were removed and their pay fell to the average for the wealthy countries, the savings would be on the order of \$100 billion a year or \$700 per family. This would also put downward pressure on the pay of the top end of the workforce more generally, the big winners in the economy over the last four decades.

For some reason, progressives never seem interested in using the market against the rich. This attitude is bizarre. The right is constantly developing new ways in which it can structure the market to put downward pressure on the wages and living standards of those at the middle and bottom in order to give more to the top. Progressives could and should respond by developing alternative ways to structure the market to reverse this upward distribution. Increased trade in highly paid professional services offers a great opportunity for reversing a big chunk of the income distributed upward. We should challenge the “free traders” to support the removal of the trade barriers that allow very high income for their friends and relatives.

Trade and the internet

An important aspect of the latest set of trade deals, such as the Trans-Pacific Partnership and the United States, Mexico, and Canada Agreement (USMCA), is the rules being put in place for the Internet and e-commerce. These rules are largely being designed to further the dominance of US giants like Google, Facebook, and Amazon. They limit the ability of countries to regulate these giants and the Internet more generally. While the issues involved with the good regulation are complex and require way more technical knowledge than I possess, there are two types of problems that should concern progressives.

The first is a development issue. The US companies have clearly taken the lead in establishing a worldwide Internet presence. Developing countries should have the opportunity for fostering their own competitors. It will obviously be very difficult for start-up in Brazil or Mexico to compete with a giant like Google or Facebook. Trade deals should not preclude the option for these countries to provide assistance to start-ups in these areas with the hope they could be viable competitors at least in their home country.

The other issue is that we now know that these companies engage in a wide range of dubious practices, such as sharing personal information without permission and spreading false news stories with the intention of promoting ethnic hatreds or influencing elections. A provision of these trade deals prevents countries from requiring Internet companies from maintaining a physical presence. If an Internet-based company like Facebook has no physical presence in a country, then it is difficult to see through what mechanisms it could stop or penalize such harmful practices.

⁸ I discuss mechanisms for this sort of funding in Baker (2016).

Countries do have a right to prevent personal information on their citizens from being shared against their will and from having false news stories widely circulated among their population. If trade deals block countries from being able to protect themselves from the bad practices of the Internet giants, this is a very serious problem.

This means, at the least, that the Internet provisions should be subject to a full debate before any trade deal can be finalized. That is a strong argument for more openness in the drafting of trade deals. Furthermore, since no one has seemed to work out a good regulatory system for the Internet at this point, it might be best just to exclude rules on the Internet from trade deals for now, rather than risk locking ourselves and other countries into provisions that will prevent effective regulation.

The job-saving provisions in the new NAFTA

The USMCA contains a number of provisions that are ostensibly designed to save jobs in the United States, primarily in the auto sector. Specifically, the deal raises the domestic content requirement in the auto industry to 75 percent from 62.5 percent. It also requires that at least 40 percent of the value-added in a car come from workers earning at least \$16 an hour.

These provisions are likely to have a very limited impact on employment in the auto industry in the United States. As far as the domestic content rules, many cars would already qualify under the 75 percent rules. Some are close to this cutoff, which may then encourage them to use a bit more parts and labor from the three parties to the agreement. With other cars, which are further from the 75 percent cutoff, companies will likely just choose to pay the 2.5 percent tariff to which they would be subjected as a non-complying vehicle. The net impact on employment in the US industry is likely to be small.

The \$16 cutoff is basically a limit on the Mexican labor content. This cutoff is so far above Mexican pay rates that it cannot be seen as an effort to boost pay in Mexico. (A \$10 or even \$12 cutoff may have had this effect.) Here too, the net effect on employment in the US industry is likely to be limited, but it is effectively restricting the extent to which Mexico can rely on increased employment in the auto sector as a path for growth. In this respect, it is a very cynical ploy towards a country that has not particularly benefitted from NAFTA in the first place. (The gap between the per capita income in the United States and Mexico has actually grown larger in the quarter century that NAFTA has been in effect.)

These sort of industry-specific deals are likely to prove hard to enforce and primarily result in large opportunities for gaming. They are not the way that we should be looking to go in future trade deals.

Conclusion: trade can be progressive

Trade has been quite deliberately structured in the last four decades to redistribute income upward. While US policy has been promoted under the banner of “free trade” this is 180 degrees at odds with the reality. While US manufacturing workers were quite deliberately placed in direct competition with low-paid workers in the developing workers, the barriers that protected doctors and dentists and other highly paid professionals were left in place or even strengthened. At the same time, we put in place longer and stronger patent and copyright

protections to shift more income to drug companies and the entertainment and software industries.

There is no plausible story for reversing the opening to trade in manufactured goods over the last four decades, although we can and should look to have more balanced trade overall. The heart of a progressive trade policy rests on reversing the protections for highly paid professionals and also for patent and copyrights monopolies.

There is considerable validity to the argument for the benefits of free trade and it applies very much to these areas. Furthermore, the benefits from getting away from patent and copyright protections will be broadly shared. These monopolies are not protecting “our” intellectual property, but rather the property of the major corporations in these sectors.

In designing policy, we have to remember that the issue is class, not country. This makes it possible to design trade policy in which the vast majority of people in the countries affected will be winners.

Acknowledgements

The author thanks Eileen Appelbaum, Kevin Cashman, and Hayley Brown for helpful comments, and Kevin Cashman and Hayley Brown for research assistance.

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SUGGESTED CITATION:

Dean Baker, "A progressive trade policy", *real-world economics review*, issue no. 86, 10 December 2018, pp. 33-44,
<http://www.paecon.net/PAEReview/issue86/Baker86.pdf>

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The transformational role of the Great Recession for economic governance

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Abstract

The financial crisis of 2008 and its aftermath in the form of the Great Recession have precipitated the need for redesigning economic governance. The severity of the economic governance fault lines that were created by the Great Recession are comparable to those of the Great Depression of the 1930s. Both events underlined the ineffectiveness of the scope and substance of economic policy to address the contemporary economic challenges.

The operational definition of economic governance that will be used in this paper encompasses the institutional economic governance architecture, the machinery of economic governance and the scope and substance of economic policy.

This paper provides an anatomy of the financial crisis of 2008 and describes the fault lines in economic governance that appeared subsequent to the Great Recession. It concludes with a modern template for economic governance that is congruent with the new global economy of the 21st century.

Keywords economic governance, new global economy, financial crisis, great recession, great depression, economic policy

Introduction

The Great Recession of the 21st century has revealed the economic governance fault lines on the economic landscape. In this regard, there are significant comparisons between the structural realignment that occurred in the 20th century as a result of the Great Depression of the 1930s. In consequence, the mission and mandate of economic governance on the contemporary landscape and its accompanying institutional architecture requires transformational change in order to conform to the realities, challenges and opportunities of the new global economy of the 21st century. The operational definition of economic governance that will be used in this paper encompasses the institutional economic governance architecture, the machinery of economic governance and the scope and substance of economic policy.

Three recent economic events have revealed the fault lines in the modern constructs of economic governance. First, the profound structural changes that heralded the advent of the new global economy. Second, the devastating consequences of the global financial crisis of 2008. Third, the prolonged Great Recession that followed the global financial crisis and was accompanied by high unemployment and diminutive economic growth.

There is no denying that the global financial crisis of 2008 and its aftermath have triggered a wakeup call in regard to the deficiencies in economic governance. Indeed, the recent cataclysmic financial and economic crisis should become the catalyst for redesigning our economic mission, realigning the scope and substance of economic governance and creating an institutional architecture that is congruent with the new global economy of the 21st century.

New economy

The new global economy of the 21st century has transformed the economic, social and political landscape in a profound and indelible manner. Never before in human history has the pace of structural change been more pervasive, rapid and global in its context. Furthermore, the new economy is built on a culture of innovation. Indeed, the signature mark of the new global economy is new ideas, new technologies and new initiatives.

The new global economy of the 21st century is composed of a trilogy of interactive forces that include globalization, trade liberalization and the information technology and communications revolution. Globalization has melted national borders and redefined economic policy. Free trade has enhanced economic integration and extended the economic governance architecture. The information technology and communications revolution has made geography and time irrelevant and enhanced the reach of economic parameters (Passaris, 2006).

The advent of the new economy has resulted in the restructuring of economic society. The role of innovation as a catalyst that drives the engine of economic growth has become a fundamental postulate of the new global economy. Furthermore, the new economy has underlined the pivotal role of a country's human resources and the unique economic value of its human capital endowment. Indeed, the old economy of the 20th century was about the resources under our feet, while the new economy of the 21st century is about the resources between our ears.

A country's human capital assets take the form of the educational attainment, the technical competencies and the special skills of its population. They are an essential prerequisite for empowering the new economy and facilitating the integration of labour in the knowledge based industries.

On the contemporary landscape, economic globalization takes the form of a porous global economic environment. This permits the mobility of foreign direct investment, has accentuated the movement of immigrants and refugees, has enhanced the flow of international trade and has multiplied the volume of transactions in international financial markets. Furthermore, the global outreach and economic integration of corporations beyond their national borders has made the world a truly global economic village.

Financial crisis

The financial crisis of 2008 unfolded with record speed into a devastating economic crisis of global proportions. It had a more devastating effect than simply creating the most significant economic crisis since the Great Depression of the 1930s. More specifically, it revealed the fault lines on the economic landscape and particularly the deficiencies in economic governance.

At the outset, it should be stated that the financial crisis of 2008 was a made in America financial crisis. The epicenter of the financial crisis was the sub-prime mortgage crisis that unfolded during 2007 and 2008. Despite the fact that the eye of the financial storm was the asset backed securities collateralized with sub-prime mortgages, it was the USA housing market that influenced in a profound and indelible manner the economic outcome and is the

principal cause of the financial crisis. Indeed, the contextual narrative for the 2008 financial crisis starts with the abrupt collapse of the USA housing market in 2006 (Passaris, 2015A).

The perfect financial storm was created by the adverse alignment of a combination of political, economic and financial factors. These factors included political pressure in the USA to increase home ownership for low and medium income earners, the advent of economic globalization and the global contagion effect, the introduction of new financial products such as derivatives and hedge funds that carried a significant level of risk, the process of de-regulation that allowed large investment banks to carry excessive leverage and the existence of a large global supply of investment funds seeking investment grade bonds. All of this created unsustainable mortgage lending practices and a vulnerable financial governance institutional architecture. In short, the financial crisis reflected a systemic failure of the USA housing market in particular and the global financial industry in general. More precisely, the financial crisis created an implosion of the financial sector with global consequences (Bernanke, 2015).

Crisis anatomy

A forensic analysis of the financial crisis of 2008 reveals the failures of the existing economic governance system. The increase in the supply of credit during the period immediately preceding the financial crisis facilitated the promotion of less stringent financial requirements associated with new mortgages. Indeed, this is the context for the emergence of sub-prime mortgages which are defined as mortgages issued to a homeowner without a strong credit worthiness and consequently carry a greater risk of default in comparison to holders of prime mortgages.

Another emerging economic fault line prior to the financial crisis was reflected in the fact that the pricing of complex derivatives was not congruent with the systematic risk associated with them. In consequence, the financial markets did not accurately measure the risk contained in financial products such as collateralized debt obligations and mortgage backed securities. Finally, the period prior to the financial crisis witnessed political pressure in the USA to increase the supply of mortgages to low and moderate income households. The abrupt collapse of the housing boom in 2007 created a high default rate and an increase in foreclosures which in turn generated serious liquidity challenges not only for major banks but for several large financial firms that had a significant investment in mortgage backed securities and other forms of collateralized debt obligations.

By 2008, the serious economic challenges of the USA housing market had contaminated the global financial market. In addition, many financial institutions attempted to safeguard their liquidity by recalling outstanding loans and raising the bar with respect to new loans. All in all, a full-fledged and worldwide decrease in the supply of credit developed. The economic impact of the failure of several major USA financial institutions with a large exposure to subprime mortgages confronted the financial markets around the world.

Greenspan put it more succinctly during his testimony before the Committee of Government Oversight and Reform of the USA Congress:

“The evidence strongly suggests that without the excess demand from securitizers, subprime mortgage originations (undeniably the original source of crisis) would have been far smaller and defaults accordingly far fewer. But

subprime mortgages pooled and sold as securities became subject to explosive demand from investors around the world. These mortgage backed securities being 'subprime' were originally offered at what appeared to be exceptionally high risk-adjusted market interest rates. But with U.S. home prices still rising, delinquency and foreclosure rates were deceptively modest. Losses were minimal... The consequent surge in global demand for U.S. subprime securities by banks, hedge, and pension funds supported by unrealistically positive rating designations by credit agencies was, in my judgment, the core of the problem. Demand became so aggressive that too many securitizers and lenders believed they were able to create and sell mortgage backed securities so quickly that they never put their shareholders' capital at risk and hence did not have the incentive to evaluate the credit quality of what they were selling... It was the failure to properly price such risky assets that precipitated the crisis" (Greenspan, 2008, pp. 2-3).

By 2009, the capital markets were in a downward tailspin. The exporting of problematic securitized financial instruments, conveniently but most certainly inappropriately rated triple A by the credit rating agencies, brought about a freeze in global markets with global repercussions. The mechanics of the operation involved packaging mortgage products that financial institutions would not want on their own books and selling them globally at prices that were significantly higher than what would have been recorded in their books by carrying the mortgages in the traditional banking manner. This process gave birth to the global demand for sub-prime mortgages.

During the course of the better part of 2008 and in the early months of 2009 stock markets around the world incurred significant losses which were driven by fears of bank insolvency, a sharp decline in credit availability and a plummeting investor confidence. Countries around the world were confronted with a weak level of economic activity, international trade declined and credit shrank. The blame for all of this was pointed at credit rating agencies and investors that failed to account for the risk involved with mortgage related financial products.

The Great Recession

The Great Recession commenced during the second decade of the new millennium. It was triggered by the global financial crisis of 2008 and developed in its aftermath. I believe the Great Recession is an important economic governance milestone. To my way of thinking the Great Recession is the defining economic event that revealed the fault lines in economic governance and the dysfunctional nature of our economic policy tool kit for the 21st century. In effect, our inherited economic governance model had developed structural deficiencies and public policy shortcomings (Passaris, 2015B).

Furthermore, the Great Recession was a tangible acknowledgement that the economic governance landscape was no longer an effective mechanism for delivering the desired outcomes for the new economy. Indeed, it served as a wakeup call that the economic policies that were effective in the old economy of the 20th century are no longer potent for the new economy of the 21st century.

This new term, the Great Recession, is an informative play on words on the Great Depression. The Great Depression lasted for about a decade during the 1930s. It was a period

of protracted economic downturn, high inflation, soaring unemployment, stagnant income levels and a decline in total output.

On the other hand, the Great Recession got branded as such because it did not neatly comply with the definition of a depression which requires four consecutive quarters of negative economic growth. The intermittent spurts of weak economic growth recorded during the period of the Great Recession disqualified it from meeting the definitional parameters of an economic depression. However, in terms of its longevity and severity the Great Recession matches the fundamental economic malaise that was triggered by the Great Depression. In effect, the Great Recession that commenced during the late-2000s was the worst economic downturn since the Great Depression. The parallels and similarities between the Great Depression and the Great Recession are striking.

The Great Recession provided a reality test for economists regarding economic governance and policy. It underlined the need to redesign economic governance in order to address structural change at the same time as initiating economic policies to combat economic adversity.

More specifically, it revealed that the mainstream economic policy tool kit was no longer potent or effective in the new economy. The reason being that the structural parameters of the economic landscape had changed so profoundly and deeply that conventional policies had become an anachronism. In short, the mainstream theories, models and policies had lost their best before date.

Financial governance

There is no denying that the financial crisis of 2008 precipitated an urgent need for greater government involvement and the introduction of enhanced regulation in the financial sector. Prior to that there was a minimalistic overview of the financial sector. This had started in the USA during the Reagan administration with the process of a gradual relaxation of regulations.

This laissez-faire approach culminated with the endorsement by a former Federal Reserve chairman's prediction that the markets would self-regulate because it was in their best interest to do so. In this regard, it is worth noting the remarks of Greenspan during his testimony before the Committee of Government Oversight and Reform of the USA Congress, when he stated:

“We are in the midst of a once-in-a century credit tsunami. Central banks and governments are being required to take unprecedented measures.... those of us who have looked to the self-interest of lending institutions to protect shareholder's equity, myself included, are in a state of shocked disbelief” (Greenspan, 2008, p. 1).

In their recent paper, Olivier Blanchard and Lawrence Summers came to the following conclusions:

“we view the basic lessons from the Great Financial crisis to be similar to those drawn by the Keynesian revolution in response to the Great Depression: Economies can be affected by strong shocks, and cannot be expected to automatically self stabilize. We have no doubt that, absent the

strong monetary and fiscal policy responses we have observed, the financial crisis would have led to an outcome as bad or worse than the Great Depression. Thus, strong stabilization policies are simply of the essence. This is not to say that we should return to the Keynesianism of the 1960s and 1970s. The economic environment is different, the financial system more complex, neutral interest rates are low, creating problems for monetary policy, but opportunities for fiscal policy” (Blanchard and Summers, 2017, pp. 20-21).

The authors also suggested a more innovative economic policy that is grounded in the realities of the new global economy of the 21st century.

“What we specifically suggest is... the combined use of macro policy tools to reduce risks and react more aggressively to adverse shocks. A more aggressive monetary policy, creating the room needed to handle another large adverse shock... providing generous liquidity if and when needed. A heavier use of fiscal policy as a stabilization tool, and a more relaxed attitude vis a vis debt consolidation. And more active financial regulation, with the realization that no financial regulation or macroprudential policy will eliminate financial risks” (Blanchard and Summers, 2017, p. 21).

Economic internetization

I have coined the word internetization for the purpose of circumventing the drawbacks of the concept of globalization. These drawbacks commence with the fact that globalization is not a new concept. The international outreach between nations has taken place since time immemorial. Furthermore, globalization does not reflect the contemporary digital empowerment of civil society and the electronic facility for modern financial transactions.

In effect, internetization denotes a combination of two contemporary features. These are global outreach and electronic connectivity. There is no denying that internetization has had a significant impact on the new global economy and the scope and substance of economic governance. The electronic prefix that is appearing before an increasing number of our daily interactions such as e-commerce, e-mail, e-learning, e-banking, e-travel, e-democracy and e-government is a tangible expression of the pervasive influence of the information technology and communications revolution (Passaris, 2014A).

Increasingly, internetization has become a driving force in the business strategy pursued by corporations in the 21st century. Internetization embraces the transformative powers of the world-wide-web and the electronic information high way and serves as a catalyst for the evolving dynamics of interconnectivity in the new global economy. Furthermore, internetization captures the pervasive influence of technological change and electronic innovations on the global economic landscape as well as on all aspects of human endeavour for our civil society (Passaris, 2017).

Internetization has also impacted upon economic governance by facilitating public scrutiny of government documents, enhancing the accessibility of data and generally promoting the electronic connectivity between civil society and government. In short, internetization which is empowered by the internet and electronic connectivity has enabled the spectacular technological structural changes of the new global order.

It should be noted that the process of internetization is not static. It is constantly evolving, mutating and transforming. The capacity for internetization took a giant leap forward with the transformation of wired electronic technology into wireless devices. In addition, new technological frontiers have been reached through nanotechnology, cloud computing and virtual networks.

There is no denying that internetization has impacted directly and profoundly on the scope and substance of economic governance. It has facilitated new channels of communication between civil society and the government. Economic governance has been exposed to a new form of transparency and accountability in regard to government decision making. Internetization has created a new layer of intervention and regulation for government. Internetization has also revealed a darker and malicious side. In effect it has created the electronic vulnerability of the machinery of economic governance that requires its constant upgrading and the introduction of cybersecurity firewalls. All in all internetization has generated a new form of exposure and interaction for economic governance.

Governance antecedents

The scope and substance of economic governance has evolved over the centuries. Indeed, the span of economic history reveals several noteworthy mileposts that have taken form and substance on the economic governance landscape. One of those was the transformational change that occurred in the 20th century.

Adam Smith, the founder of modern economics and the author of the foundational economics treatise *An Inquiry into the Nature and Causes of the Wealth of Nations* first published in 1776 laid the groundwork for economic governance in the latter part of the 18th century. His philosophy of free enterprise advocated the absence of government intervention in the economy. Indeed, this was the paramount model of economic governance until the Great Depression of the 1930s. It was a theoretical premise that underlined the importance of the private sector as the principal engine for economic growth and the sole decision maker in economic matters. Despite the absence of government involvement in economic affairs, the role of government was confined to three other areas. More precisely, government's jurisdiction would be limited to foreign affairs, ensuring domestic law and order through the operation of the courts and policing and maintaining the country's national defense system (Smith, 1776).

The Great Depression of the 1930s lasted for more than a decade and had a devastating impact on the economic landscape. It created in its wake a downward spiral of economic growth, a pandemic of business bankruptcies, massive unemployment, escalating inflation, widespread poverty and financial instability.

Furthermore, it underlined the fault lines in economic governance that had been in existence from the late 18th century until the Great Depression.

As a direct consequence of the Great Depression a new model for economic governance was introduced by John Maynard Keynes with the publication of his book *A General Theory of Employment, Interest and Money* in 1936. This new model of economic governance was labelled Keynesian economics and was adopted by most of the advanced and industrialized countries after World War II.

Unlike Smith's philosophy of no government intervention in the economy, the advent of Keynesian economics in the latter half of the 20th century opened the door for government's presence and influence in the economy. It created a mixed economy which embraced a compounded form of private sector and public sector economic decision making. Its implementation required a more affirmative economic role for government through the formulation and implementation of monetary and fiscal policies (Keynes, 1936).

The consequences of the Great Depression also underlined the fault lines in regard to the financial landscape. It revealed a specific vacuum in the financial architecture. In consequence, the economic governance skyline was modernized through the introduction of a new institution of economic governance in the form of the central banks as well as the inception of monetary and stabilization policies.

Economic governance

Economic governance can take different forms and structures. An operational definition of economic governance is the multidimensional aspects of direction and policy that impact on the economy including the machinery and institutional architecture for the delivery of economic governance initiatives. In this regard, a conventional approach to economic governance impacts the private and public sectors, households, financial institutions and labour organizations. More specifically, it is directed to all aspects of economic engagement including production, distribution, consumption and the investment of resources. In short, economic governance refers to the formulation and implementation of policies, the institutional economic architecture and the administration and management of the economic landscape (Passaris, 2015C).

The recent past has witnessed a reversal in the economic governance mission for most countries. There are several reasons for the retreat of the public sector from its previous level of economic engagement and involvement. These include, declining tax revenues, an increase in the public debt, public displeasure with the government's management of the economic agenda, a decentralization of government operations, the belt tightening and reduction in government expenditures particularly with respect to social programs and the privatization of government activities.

It is worth noting that along with the downsizing, outsourcing, devolution and the downloading of government economic initiatives and an increased reliance on the market mechanism, the public sector's institutional architecture has been neglected and allowed to atrophy to the point that it has reached a minimalistic state of existence. There is no denying that this weakness in the structural foundation for the formulation and implementation of economic public policy has had a deleterious effect on economic governance.

Good economic governance is not a static concept. It should evolve in order to accommodate the structural changes on the economic landscape. Clearly it is a concept that is not only time sensitive but also responsive to societal permeations. In this regard Dixit points out "...that different governance institutions are optimal for different societies, for different kinds of economic activity, and at different times. Changes in underlying technologies of production, exchange and communication change the relative merits of different methods of governance" (Dixit, 2008, p. 673).

The modern institutional architecture of economic governance should have a pronounced global mindset. It should be noted that international economic events have national and local repercussions. Similarly, local and national economic policies will trigger an international impact. In short, globalization has changed the flow of economic governance traffic from a one way singular direction to a two way bi-directional traffic flow. Indeed, on the contemporary economic landscape, the dividing line between the national domestic context and the international linkages is blurred at best and fluid on most economic issues. This does not negate the need for domestic institutions of economic governance. It simply requires that we recognize and acknowledge that their efficacy in responding to national issues can be constrained. Furthermore, a global disposition and mindset will create a positive environment for taking advantage of international opportunities. Global economic interdependence is a fact of life in the 21st century and our institutions of economic governance need to adapt and evolve to embrace it rather than ignore its existence.

Creative destruction

In redesigning economic governance we need to adopt a new vision, embrace an entrepreneurial approach, unleash an innovative wave and promote a global mindset. In this context, charting a new course for economic policy and redesigning economic governance we should resort to a model of creative destruction. Creative destruction is a concept that was introduced by the Austrian economist Joseph Schumpeter to the economics lexicon in 1942. It denotes the process of replacing the old and ineffective economic methods with new and more potent initiatives. This process of creative destruction is urgently needed at this time for the purpose of modernizing economic governance.

Simply put, the iconic phrase of creative destruction is about evolution and mutation. It fosters creativity and innovation and avoids stagnation and decline. It is not about resisting change but embracing it for competitive advantage. It is about responding to structural change and positioning oneself for improved economic outcomes (Schumpeter, 1942).

While the word destruction denotes turmoil and upheaval its purpose is the amelioration of the economic journey and process. It is about a mind-set that destroys an old and derelict structure and building an improved and modern one in its place. In idiomatic context it is out with the old and in with the new. It is about discarding the common adage “if it ain’t broke, don’t fix it” with a new aspirational objective – “if it ain’t broke, improve it”. In essence it is about unleashing the tremendous power of innovation.

Creative destruction in economic governance introduces a dynamic and evolving feature to structural change. It permits an entrepreneurial dimension to the process of reforming economic governance. In this journey, it is assisted by innovation and the advances in technology. It applies to all forms of human interactions and governance models including economic, social, political, cultural to name but a few.

In effect, creative destruction recognizes change as the one constant in the human condition and economic enterprise. The guiding principle of creative change is to change with the times and take advantage of new opportunities or be left behind. This process rewards innovation and change and punishes the status quo and the stagnant. Indeed, the tangible rewards of this economic journey are numerous and multidimensional. They include accelerating economic growth, harnessing efficiencies, reducing cost, reallocating resources to maximum

advantage, promoting innovation, achieving economic progress and sustaining higher standards of living.

Governance innovation

The overarching purpose of this paper is to develop an innovative blueprint for economic governance in order to redress the fault lines that appeared as a consequence of the Great Recession. A new economic governance template that is congruent with the structural changes that were precipitated by the new global economy of the 21st century and the Great Recession.

As a result of the Great Recession the contemporary economic governance landscape requires reimagining. This may result in the restructuring of existing institutions through a process of renewal and institutional innovation. It may also take the form of designing new economic institutions with the purpose of becoming more synergistic with the structural changes brought about by the new global economy. In some cases existing institutions of economic governance only need to be renewed and remodeled. In other cases, there is a need to build new institutions from the ground up.

Since the Second World War, the economic role of government has mutated and evolved. Increasingly it has responded to demands for enhanced transparency and accountability. It has been forced to respond to the structural changes on the economic landscape. In addition, civil society has raised the bar and articulated higher expectations with respect to the performance of economic governance. It has also generated an increasingly higher level of public scrutiny with regard to the efficacy of the government's economic agenda.

In addition, technological advances in information and communications have provided a degree of public scrutiny that is unprecedented. They have enhanced the interchange between civil society and public institutions. Internetization has influenced the scope and substance of economic governance in a profound and indelible manner. There is no denying that public expectations of government performance are currently held to a higher standard than at any time in the past. The invasive nature of modern technology has resulted in a public demand for government disclosure regarding a government's vision, policies, strategies, performance and actions (Passaris, 2008).

In building a more contemporary, resilient and effective form of economic governance for the new economy of the 21st century we need to be guided by the enabling principles and the empowering features of creative destruction. As the 21st century unfolds, it is becoming increasingly clear that the evolution of economic governance will be directly consequential to the emergence of the new global economy, the aftershocks of the global financial crisis of 2008 and the protracted Great Recession.

Those three events have revealed the structural deficiencies in the contemporary economic governance skyline. In tandem, the scope and substance of economic policy will require a re-orientation, renewal and redesign for the purpose of modernizing its global outreach and effectiveness. Furthermore, economic governance in the contemporary context requires periodic stress tests and performance reviews.

The pursuit of economic governance in the 21st century requires a new vision, a modern mandate and a proactive strategy. I propose four principles to guide the process of redesigning economic governance. The ingredients for the redesign of economic governance can be summarized as the 4E's of economic governance. This checklist includes efficient, effective, enduring and empowering.

Efficient refers to the contemporary expenditure constraints for implementing economic governance and the pursuit of a cost-effective formula. Effective refers to the efficacy of economic governance institutions, the machinery of economic governance and economic policy to achieve the desired outcomes. Endurable refers to the resilience of institutions of economic governance to withstand external economic shocks and deter digital vulnerability in the contemporary age of globalization and electronic connectivity. Empowering economic governance is the measure of building bridges and forming partnerships for the purpose of achieving the economic goals and aspirations of civil society.

The redesign of economic governance should adhere to a new dynamic in the form of the confluence of government, the private sector and non-governmental organizations in redefining the scope and substance of its mission. This triangular model of economic governance can serve as a purposeful catalyst for forming effective partnerships that contribute to positive change and better outcomes. Finally, the structural qualities and resilient infrastructure of a revitalized governance model must be able to withstand the future economic shocks and interface effectively with the new global economy of the 21st century.

Open government

Open government should play a prominent role in charting a new course for economic governance in the 21st century. The philosophical foundation for open government is based on the premise that the mission of good governance is enhanced by allocating a bigger role for civil society in the decision making process. Open government, in its contemporary context, requires the active engagement of civil society, unfettered access to government information and the empowerment of digital technology. Indeed, in the modern context the elixir and sustainability of open government rests with the innovative use and adoption of state-of-the-art internet based technologies.

All of this translates into making government information more accessible and user- friendly. In addition, using innovative forms of electronic platforms for engaging and consulting with civil society through social media platforms and electronic outreach is a significant advantage. There is no denying that in the modern context, internetization plays an essential role in facilitating the process for a more open, transparent and participatory form of government in the 21st century.

The information technology and communications revolution has become a significant enabler for open government. It has facilitated the process of transparency, participation and accountability in an indelible manner. The digitalization of government documents, accessibility of statistical data and electronic communication between civil society and the government has facilitated an unprecedented level of connectivity.

Open government can have a positive and constructive impact on economic governance. The element of transparency is vital for informed and purposeful economic decisions. This takes

the form of the public scrutiny of economic policies, guidelines, directives, data and analysis. It empowers the implementation of evidence based public policy, informed business decisions and visionary entrepreneurial initiatives.

In the modern context, the Open Government Partnership was formally launched on September 20, 2011. The mission of this new multilateral initiative is directed to secure concrete commitments from governments to promote transparency and accountability, empower citizens, fight corruption and harness new technologies to enhance governance. All member countries are obliged to sign the Open Government Declaration which succinctly states:

“We commit to promoting increased access to information and disclosure about governmental activities at every level of government... We value public participation of all people, equally and without discrimination, in decision making and policy formulation. Public engagement, including the full participation of women, increases the effectiveness of governments, which benefit from people’s knowledge, ideas and ability to provide oversight... New technologies offer opportunities for information sharing, public participation, and collaboration. We intend to harness these technologies to make more information public in ways that enable people to both understand what their governments do and to influence decisions” (Open Government Partnership, 2011, pp.1-2).

New initiatives that are in concert with the principles of open government are an essential prerequisite for effective economic governance and for transforming the tepid relationship between government and civil society. At the end of the day, the Open Government initiative aims to improve public services, drive economic growth, reduce poverty and corruption, energize and diversify civil society’s participation in economic governance and restore public trust in government. Indeed, restoring public trust and public engagement in governance should become a paramount objective for redesigning economic governance.

Governance architecture

Historical economic mileposts have revealed the fault lines in the architecture of economic governance. In particular, these historical economic mileposts have exposed a vacuum in the mission of economic governance and the under capacity to execute necessary policy outcomes. In consequence, the economic governance architecture requires a periodic forensic evaluation and a stress test evaluation in order to determine its efficacy for evolving contemporary challenges and opportunities.

The most recent reimagining of the economic governance architecture took place after the Great Depression. At that time the collapse of financial stability and the banking system prompted the redesign of the financial system. In effect, the evolving nature of the economic governance landscape resulted in the modernization of central banks and the banking system in order to prevent the Great Depression of the 1930s from ever happening again. But that was in the 20th century, fast forward to the aftermath of the Great Recession and a new opportunity has emerged for the reimagining of the economic governance architecture for the 21st century.

At the present time the inability of the machinery of economic governance to correct persistently high levels of unemployment requires a similar addition to the economic governance skyline. This should take the form of a new institution of economic governance in the 21st century that will be devoted to streamlining the demand and supply of labour and empowering the vital role of human capital to propel economic growth and full employment in the new economy of the 21st century.

The re-engineering of the economic governance architecture and the machinery of economic governance would require a more holistic and integrated approach between institutions of economic governance. Indeed, reimagining economic governance is about institutions that are talking to each other constantly and coordinating with each other during the different phases of formulating and implementing their policies. This does not refer solely to a policy dialogue between institutions of economic governance but also between institutions of economic governance and institutions of social governance, environmental governance, cultural governance and political governance.

Institutional governance

The mission and mandate of institutions in the redesign of economic governance takes on added importance in the context of the new global economy. The global financial crisis and its aftermath in the form of the Great Recession have spotlighted the central role of institutions on the economic landscape. In this regard, economic institutions are the bulwark and the scaffolding for a more potent approach to economic governance.

It is worth noting that the Great Recession has underlined the economic governance fault lines in regard to the institutional architecture. More specifically, the Great Recession has created a problem of structural and chronic unemployment that the contemporary economic governance architecture has proven to be ineffective in addressing. In consequence, this is one area that requires an alteration to the economic governance landscape through the introduction of a brand new institution of economic governance.

In effect, the contemporary economic landscape requires the introduction of new models and designing a new institutional architecture that is congruent with the new global economy. There is an urgent need for a new template for the role of institutions on the economic landscape of the 21st century. Indeed, the changing economic landscape requires a new vision for economic governance. The contemporary institutional landscape for economic governance was designed for the old economy of the 20th century and is no longer potent in meeting the challenges and opportunities of the new economy of the 21st century. An innovative approach towards the role and functions of institutions can serve as a catalyst for a revitalized format for economic governance that is more congruent with its mission in the 21st century.

Unemployment dilemma

The contemporary structure of economic governance is particularly ineffective in redressing the persistent problem of unemployment that has appeared in the aftermath of the Great Recession. It has exposed the contemporary vulnerability of the economic governance architecture and underlined the need for complementarity between social and economic policy.

Unemployed human resources are the singular most important loss of economic endeavour for any country. This takes on added importance in the context of the new global economy where human capital is a country's foundational economic asset. The economic costs of unemployment are numerous and multifaceted. They include a loss of income and livelihood as well as the loss of output, productivity and the goods and services to the economy as a whole. The social costs of unemployment are the loss of self-esteem and self-worth, a lack of purpose all of that leading to family break up, psychological breakdowns and many types of health consequences. The political costs which are exclusively borne by the government in power is the stigma of economic failure and a tarnished record of economic accomplishment leading to a lack of success at the ballot box and a failing attempt at re-election (Passaris, 2014C).

The Great Depression of the 1930s resulted in the creation of a new economic governance institution in the form of the modern central banking system. It was designed to promote and maintain financial stability. The Great Recession of the 21st century should follow suit with the creation of a new economic governance institution with the mandate to pursue full employment.

Full employment

The persistently high levels of unemployment requires the launch of a new economic governance institution. The pursuit of good economic governance will require the creation of a new institution whose singular mission is to promote full employment. A new institution whose overarching mandate will be to promote an economic environment that is conducive to the efficient deployment of a country's human resources and their effective integration in the new economy.

The conceptual framework for this new institution can rely on the template of a central bank. This would be more conducive to embracing a long term decision making horizon and removing the politics from the vital area of human resource management. The structure of this new institution of economic governance should be non-political, at arm's length of government and devoid of any government interference. As an independent agency it will ensure that in the pursuit of full employment, politics and policy are kept far apart. This new institution is an essential machinery of institutional re-engineering in order to come to grips with a new economic governance model for the new global economy of the 21st century. It should aspire to become a catalyst for full employment (Passaris, 2011C).

The undeniable benefit of a new institution of economic governance that is directed to achieve full employment is to serve as a catalyst for optimizing the contribution of human capital assets in the most effective and efficient manner in order to maximize the country's productive capacity and standard of living.

The most persuasive argument for full employment is the importance of human capital in the structure of the new global economy. No country can achieve its full economic potential in the absence of the total utilization and optimization of its human resource capacity. In short, it is not a matter that society cannot afford the allocation of resources in the pursuit of full employment but that we cannot afford the economic and social costs of unemployment.

Furthermore, a full employment program will decrease the economic costs of unemployment and enhance the aggregate economic benefits of the effective utilization of a country's human resources. At the end of the day, the realities of the new global economy and the pursuit of full employment require the re-engineering of our inherited economic and social institutional architecture and the introduction of a new set of economic architecture that is more conducive to meeting the challenges and taking advantage of the opportunities of the 21st century. I am of the opinion that the time has come to propose a new institution of economic governance dedicated to the most effective utilization of a country's human resources.

Economic policy

The redesign of economic governance should take into account the complementarity between the architecture of economic governance, the machinery of economic governance and the formulation and execution of economic policy. As such institutions of economic governance should recognize the inter-dependent and multidimensional nature of public policy variables.

Public policy can no longer be segmented, compartmentalized and developed in silos. Indeed, the modern context requires elevating the mission of public policy to a completely different formulaic structure. One that embraces a multidimensional context for formulating public policy as well as a more holistic and comprehensive mission. In essence it requires the recognition of the complementarity and inter-independence between several policy axioms. These public policy variables are not independent of each other and should be implemented in concert (Passaris, 2011B).

It has become abundantly clear in the aftermath of the Great Recession that conventional economic policies are not producing the desired outcomes. The new global economy has many facets, numerous dimensions, complex challenges and intricate linkages. In this regard, a new modus operandi for economic policy is required that will contribute to the efficacy of economic policy in the 21st century.

Policy interdisciplinarity

In redesigning economic policy for the 21st century embracing a foundational axiom should ensure the application of an interdisciplinary perspective in the formulation of economic policy. In order to achieve a compelling and pragmatic presence on the contemporary economic landscape, economic governance must abandon its disciplinary isolation and insularity. It must discard its maxim of professional and intellectual silos. Indeed, it must revisit the roots of its academic heritage and develop a contemporary web of interdisciplinary outreach.

The 21st century requires a turnaround in the defiantly discipline specific direction that economics has embarked upon. Indeed, economics requires a rediscovery of interdisciplinarity which acknowledges the importance of interdependent variables and the intellectual interface of academic enquiry. Furthermore, the contemporary necessity for opening up economics to interdisciplinarity is a pertinent response to societal pressures. The contemporary challenges facing society are redefining the new parameters for academic mutation and intellectual discourse. Interdisciplinarity provides contemporary relevance and a pragmatic approach. There is no denying that civil society has become more complex and

multifaceted and it is not possible to understand it from within the boundaries of one singular academic discipline (Passaris, 2014B).

Interdisciplinarity requires economists to be fully cognizant of diverse schools of thought within their own discipline as well as developments in other related disciplines. This in addition to the emergence of new research frontiers and new academic disciplines which will require collaborative research endeavours, multidisciplinary and interdisciplinary research teams and path breaking technological techniques in response to advances in computer science and information technology. In short, economics in the 21st century must reflect an appreciation and an intellectual comfort zone with related disciplines (Passaris, 2011A).

Our contemporary challenges expose us to a multifaceted, multidimensional and an overarching reach between economics, the social sciences, the humanities and the natural sciences. In fact, solving the contemporary problems that face society will lead to mutations, linkages and variations within disciplines and between disciplines.

All of this leading to a redefinition of interdisciplinary boundaries for the purpose of building intellectual bridges, closing academic gaps and providing evidence based public policy. This is of particular importance in addressing the interdisciplinary nature of contemporary economic challenges, social problems and environmental sustainability. Interdisciplinarity will translate into improved public policies that would contribute to sustained wealth creation and multidimensional efficiencies.

In short, economics in the 21st century must embrace interdisciplinarity and reflect an informed appreciation, an academic curiosity and an intellectual comfort zone with related disciplines. In this way we can enhance the potency of economic policy and improve on its record of impacting positively on its economic outcomes.

Economic historiography

The powerful role of economic historiography should be underlined for the purpose of informing economic policy and shaping the scope and substance of economic governance. The discipline of economics has always been in a constant state of evolution, transformation and technical refinement. Furthermore, the history of economic thought attests to the structural changes in philosophical orientation and theoretical direction that have taken place over the past centuries.

It has become increasingly clear that the formulation of contemporary economic policy lacks the benefit of historical hindsight. Contemporary economic policy suffers from a historical vacuum. It lacks an appreciation of our collective economic historiography. In consequence there is a compelling need to rediscover the value of economic history and the history of economic thought. In effect, moving forward our economic policy should correct this historical amnesia.

There are two foundational tenets that should define the historical context in economics. First, an appreciation of the history of economic thought and second, the historical context for economic events. It should be emphasized that the history of economic thought and economic history are very different and distinctive. It is a sad commentary that on both counts the historical potency of the discipline of economics is found lacking. The historical back drop has

become an increasingly neglected dimension in the contemporary evolution of the discipline of economics and in constructing economic policy.

There is no denying that economic history has been undervalued as a tool of economic analysis. The intrinsic value of economic history should be rediscovered in order to enhance the potency of economics in the 21st century. Economic history is not simply about the past, it is important for the present and the future. History is a continuum from the past to the present and into the future. It preserves the past, explains the present and shapes the future.

The most penetrating observation regarding the value of economic history was offered by Joseph A. Schumpeter. In his last book, *History of Economic Analysis*, he emphasized that the proper study of economics requires three elements: theory, statistics and history. He concluded that: "If, starting my work in economics afresh, I were told that I could study only one of the three but could have my choice, it would be economic history" (Schumpeter, 1954, p.12).

The reimagining of economic policy in the 21st century should allow economic history to serve as a tool of economic research and analysis for contemporary economic issues. Economic history enables us to analyze and explain the contemporary and historical dimensions of economic life. In short, the redesign of the machinery for creating economic policy for the 21st century must reflect that history is not simply about the past, it is perhaps more important in analyzing and explaining the present and predicting the future.

Qualitative vacuum

Evidence based public policy has relied almost exclusively on a quantitative and mathematical approach. At the same time it has neglected the valuable contributions of the qualitative dimension and its associated tool kit. Economic policy in the 21st century should resolve the contemporary quagmire regarding the focus of economics predominantly on the quantitative rather than the qualitative.

The emergence of the new global economy, the financial crisis of 2008 and particularly the Great Recession have accentuated the disciplinary limitations of the quantitative approach. Indeed, they have underlined the constraints associated with the extensive use of the mathematical approach in the study and application of contemporary economics

At the same time, the quantitative focus has been criticized as being falsely scientific with no role for human intentionality or choice. It has been disparaged for understating the economic narrative, adopting simplistic assumptions and skewing economic theory. It has also been suggested that quantification has resulted in unrealistic models of individual human behaviour in the genre of rational, self- interested, utility maximizing *homo economicus*.

The quantitative approach has made economics more model driven and hence less responsive to variables that have an implicit qualitative focus. Mathematical formulation requires a degree of abstraction and technical rigidity that in consequence has contributed to the observation that the contemporary constructs of the economic models bear little resemblance to the real world and do not adequately reflect the economic passion for developing a road map towards achieving the eternal human ambition for economic prosperity, improving the quality of life and personal fulfillment.

In his seminal article entitled “Toward a Newer Economics”, William Baumol underlines that:

“There can hardly be any argument with the proposition that the use of mathematical methods has not solved all problems in economic analysis, and that some problems lend themselves more readily to statistical, experimental, historical or other lines of attack. While formal mathematical theory has made invaluable contributions in fields where its success might have caused considerable surprise in an earlier day – fields such as public finance and industrial organisation – each of these areas surely still leaves considerable scope for other research procedures. And there are still other areas, for example, labour economics, in which this is probably even truer. The trouble is that if individuals are not respected for the pursuit of alternative approaches, if only those whose writings are pockmarked by algebraic symbols receive kudos, one can expect a misallocation of resources like that which always results from a distortion of relative prices” (Baumol, 1991, p. 2).

All of this brings into question the degree to which abstraction necessitated by mathematical rigour has resulted in a marked decline in the pertinence and potency of contemporary economic policy. There is an urgent need for a broader vision emanating from econometric technicians (the economic version of statistics known as econometrics) to become more inclusive of the qualitative variables that embrace the economic issues that confront us in the 21st century and the remedial economic policies that are proposed.

The quagmire between contemporary relevance and scientific rigour should be resolved by adopting an intellectual compromise. Mathematical sophistication and rigidity must be tempered in order to embrace the qualitative dimension of contemporary economic issues. This will undoubtedly enhance the role that economists will play in the 21st century by becoming more relevant and responsive to economic, social, political and cultural public policy issues.

This balance between quantitative rigour and qualitative realism must become a central feature of economic policy in the 21st century. Economic policy should be cognizant of the limitations of the quantitative approach and at the same time open the door to the qualitative interpretation of contemporary economic models.

In short, the Great Recession revealed that mainstream economics was hampered by unrealistic assumptions, model failings, errors of judgement and a very narrow and filtered focus. In consequence, it was ineffective in addressing structural change in the new global economy and analyzing the qualitative issues of relevance on the economic landscape. Krugman summarized the state of economics in the aftermath of the global financial crisis in this manner:

“...the economics profession went astray because economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth.....the central cause of the profession’s failure was the desire for an all-encompassing, intellectually elegant approach that also gave economists a chance to show off their mathematical prowess” (Krugman, 2009, p. 36).

Conclusion

Three recent economic events have revealed the fault lines in the modern constructs of economic governance. First, the profound structural changes that heralded the advent of the new global economy. Second, the devastating consequences of the global financial crisis of 2008. Third, the prolonged Great Recession that followed the global financial crisis and was accompanied by high unemployment and diminutive economic growth.

There is no denying that the global financial crisis of 2008 and its aftermath have triggered a wakeup call in regard to the deficiencies in economic governance. Indeed, the recent cataclysmic financial and economic crisis should become the catalyst for redesigning our economic mission, realigning the scope and substance of economic governance and creating an institutional architecture that is congruent with the new global economy of the 21st century. Furthermore, the Great Recession has triggered a transformational course for economic governance in the 21st century.

The mission and mandate of economic governance and its accompanying institutional architecture requires a structural realignment in order to conform to the realities of the new global economy of the 21st century. This requires modernizing economic governance, creating a new vision and adopting an alternative conceptual framework for economic governance.

In designing a new template for economic governance this paper has proposed a checklist that includes four principles. These are efficient, effective, enduring and empowering economic governance. The redesign of the economic governance architecture may result in the restructuring of existing institutions through a process of renewal and institutional innovation. It may also take the form of designing new economic institutions with the purpose of becoming more synergistic with the structural changes brought about by the new global economy.

The elements that have contributed to a modern blueprint for economic governance include an interdisciplinary approach, embracing a global mindset and unleashing the power of economic historiography. In addition a new economic governance construct should supplement the quantitative focus of evidence based economic policy with a qualitative dimension. At the end of the day, all of this will create an economic governance ecosystem that is congruent with the new global economy of the 21st century.

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SUGGESTED CITATION:

Constantine E. Passaris, "The transformational role of the Great Recession for economic governance", *real-world economics review*, issue no. 86, 10 December 2018, pp. 45-65,
<http://www.paecon.net/PAEReview/issue86/Passaris86.pdf>

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Realizing nudging's potential: improving well-being and reducing socio-economic dysfunction

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Introduction

Nudge: To push or poke gently, especially with the elbow, in order to get the attention of, or hint slyly. *Webster's New World Dictionary*

Who would have thought that nudge would become an important economic concept? Part of the purpose of this paper is to explain why the nudge concept has become important and is becoming more important. My concern here is with government nudging and its overall potential. This paper focuses on the ideal role of nudging in the economy: 1) how nudges can help people realize their potential well-being, and 2) how nudges can help society overcome its most difficult social problems, the ones that often thwart people from improving their well-being.

The paper begins by considering the basic elements of the nudge concept as well as the philosophy of libertarian paternalism. In addition to the early writings on nudge of Richard Thaler and Cass Sunstein, the paper considers the later nudge writings, notably those by Sunstein. Based on this important foundation, the paper develops a number of novel insights related to the nudge concept. First, it explains how nudging is related to the human capital concept. Second, it provides clarification regarding the purpose of nudges, i.e., that nudges are actions (interventions) that contribute to people's well-being. Third, it explains how nudges can be used to overcome societies' most difficult social problems. That is, it explains how nudges can be used to resolve or mitigate severe socio-economic dysfunctions, particularly the types that arise from the behavioral causes of market failure. The example of obesity is used to illustrate this. Finally, it explains how nudges might be used as a way: 1) to improve the functioning of market economies, 2) to improve overall societal functioning, and 3) to improve and clarify societal values.

Nudge basics

According to Richard Thaler and Cass Sunstein (2008, p. 6), a nudge occurs when a nudger changes "any aspect of the choice architecture that alters ... [the nudgee's] behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid." The classic example of a nudge is changing the way food is displayed at a school cafeteria in order to steer students toward making healthier food choices than they would otherwise make (pp. 1-2). The nudger is a "choice architect" who changes the context or the decision environment of the nudgee thereby leading the nudgee to make better choices (p. 3). Banning harmful food choices or using taxes and subsidies to influence food choice are not nudges. In Thaler and Sunstein's view, nudges are needed because people do not behave as the perfectly rational beings (Econs) depicted in neoclassical economic theory. In fact, real people are humans whose decision making and behavior are not only less than perfectly rational but

whose behavior is flawed in a predictable way. Nudges are designed to systematically improve humans' behavior, thereby making human nudgees' lives longer, healthier, and better (p. 5). Certainly this is paternalism. "It tries to influence choices in a way that will make choosers better off *as judged by themselves*" (p. 5). But as Thaler and Sunstein point out, it is libertarian paternalism because it is "a relatively weak, soft, and nonintrusive type of paternalism because choices are not blocked, fenced off, or significantly burdened" (p. 5; see also Thaler and Sunstein, 2003). The nudgees are not forced to change their behavior; they can opt out and choose whatever behavior they desire.

Let's consider the nature of human fallibility, and thus, why in today's world there is a need for nudges. The essence is that we are "busy people trying to cope in a complex world in which ... [we] cannot afford to think deeply about every choice ... [we] have to make" (Thaler and Sunstein, 2008, p. 37). As a result, in our decision making we cope by using sensible decision rules of thumb that can sometimes lead us astray. Because our decision-making behaviors are often deficient, we are nudge-able, i.e., it is possible to devise nudges that will improve our decision-making behavior. That nudges can improve decision making is not something that neoclassical economists would expect. After all if, as neoclassical economists assume, people are making perfectly rational decisions, how can they be improved upon.

Nudges work for different reasons (Sunstein, 2015, p. 511). "Some nudges work because they inform people; other nudges work because they make certain choices easier; still other nudges work because of the power of inertia and procrastination" (p. 511). A reminder nudge can help when people are inattentive. "Many nudges have the goal of *increasing navigability*—of making it easier for people to get to their own preferred destination" (p. 512). Certain types of nudges such as the use of a GPS can help when life (and travel) is hard to navigate.

Nudges can help in many kinds of situations. In general, there is a greater need for nudges in situations that are difficult and occur infrequently (Thaler and Sunstein, 2008, pp. 74-75). More particularly, nudges may be needed for situations involving investment goods in which the costs are experienced now but the benefits come later (exercising, dieting). Nudges can also be useful with respect to sinful goods (smoking, alcohol) in which pleasure is experienced now but unpleasant consequences may come later. Further, nudges may be useful in situations in which we lack self-control. One situation is when we have difficulty getting up and out of bed in time for the day's activity. Another is when we may have trouble resisting the impulse to gamble (pp. 47-49). In the former situation, self-nudges can work (using an alarm clock). In the latter situation, it might be helpful to restrain one's gambling impulse by getting one's name put on a list of people banned from casinos.

Nudges can be particularly helpful "when choices are fraught and when nudgers have expertise" (Thaler and Sunstein, 2008, pp. 250-251). The goal is to make life simpler, safer, easier or less costly (Sunstein, 2014, p. 584). "The most effective nudges tend to draw on the most valuable work in behavioral science (including behavioral economics) and hence reflect a realistic understanding of how people will respond to government initiatives" (p. 585).

To illustrate the growing range of activities that can be considered nudges, Sunstein (2014a, pp. 585-587) compiled a list of ten important nudges:

- 1) Establishing default rules,
- 2) Simplifying existing programs,

- 3) Using social norms to inform people about what others typically do,
- 4) Increasing the ease and convenience of activities,
- 5) Providing full disclosure regarding market and government activities,
- 6) Providing warnings regarding the risks of private and public activities,
- 7) Assist people to choose positive courses of action using precommitment strategies,
- 8) Providing reminders to people with a great deal on their minds,
- 9) Eliciting people's implementation intentions,
- 10) Informing people of the nature and consequences of their own past choices.

Nudges and human capital

Nudges create two kinds of human capital

The nudge concept, as Thaler and Sunstein (2008) defined it, follows from the insights of cognitive psychology concerning how human behavior is often systematically and predictably irrational. Given humans' irrationality, it makes sense to attempt to intervene in order to help those whose behavior is biased improve their behavior so that their lives go better as judged by themselves. The concept of human capital has not been part of this nudge story. This is true whether we are considering psychological or nonpsychological reasons for nudges. The human capital concept, however, is becoming part of the nudge explanation. Notably Sunstein (2017, pp. 3-4), and perhaps others, now recognize that there are both educative and noneducative nudges.

Educative nudges

Educative nudges, in contrast to noneducative ones, add to nudgees' knowledge, and thus, their capacities. In other words, educative nudges add to a nudgee's human capital endowment. The term educational nudge does not refer to formal education or classroom education that typically takes place in educational institutions. Examples of educative nudges include disclosure requirements, reminders, and warnings. Without the knowledge or information imparted by such nudges, the nudged people would be less capable of doing some of the things that they desire to do. Educative nudges can help people make better choices and improve their behavior by jogging people's memories, appealing to their highest goals and aspirations, and making relevant facts salient. Clearly educative nudges raise the resources in people who are nudged and thereby make them more capable of reaching their goals. Due to such educative nudges, nudgees are more capable of figuring things out and navigating through some of the difficulties of their lives (Sunstein, 2017, p. 3). Undoubtedly, the economy benefits from this kind of investment in human capital.

Noneducative nudges

Noneducative nudges, on the other hand, do not teach the nudgees anything (Sunstein, 2017, p. 3). Noneducational nudges certainly change the decision environment, but nudgees are not better informed or more capable. Despite the fact that noneducational nudges do not contribute to the human capital of individual nudgees, these kind of nudges arguably can add to the aggregate human capital of the economy. That is because these nudges can create a kind of human capital that becomes embodied not in individuals but in the choice architecture. If so, the favorable result is due to the addition of a kind of human capital known as organizational capital. This added human capital raises the capacity of the economy because

as a result of the investment, the relationships and patterns of activity within the economy are improved, leading to greater economic capacity. Included among the noneducational nudges are many default rules as well as decisions on how things are ordered such as on a menu. Noneducational nudges often redesign the world in a helpful way (p. 3). A well-designed airport, for example, contains many educational and noneducational nudges including signage and the design of paths through the airport that steer people in helpful directions.

The soft infrastructure

As indicated above, nudging adds to the economy's stock of human capital. It is useful to consider the human capital investments that are created by various types of nudges to be essential parts of the economy's soft infrastructure. That infrastructure is soft relative to roads, bridges, and other very tangible types of infrastructure. Despite its "softness," it may arguably be nearly as important as hard infrastructure to the economy's overall productivity.

Expressive nudges also contribute to productivity

Some educational nudges do not involve changes in choice architecture in the usual sense. As Sunstein (2015, p. 512) has explained, public officials cannot avoid nudging. Such officials may take actions in line with Constitutional law, actions that have an expressive function that influences and guides citizens and defines their social commitments even if the actions are not coercing. Because the "Constitution safeguards freedom of speech, private property, or human dignity, it will help create a kind of choice architecture, and it will nudge" (p. 512). Governments utilize many default rules that affect citizens' economic and noneconomic activity. Many "default rules are a product of traditions, customs, spontaneous orders, and invisible hands" (p. 512). These expressive types of nudges are inevitable; they contribute to the economy's human capital stock and its soft infrastructure.

Nudging and education are complementary

Gerd Gigerenzer (2015, pp. 363-364) has been a critic of nudging, but he is not strictly opposed to nudges. Essentially he argues that education, especially "educating people to become risk savvy" in their decision making, is a much better alternative than using nudges. Sunstein (2015, pp. 520-522), on the other hand, does not believe it makes sense to think of nudging and education as competitive alternatives. In his view, the two are complements; both are indispensable.

The purpose of nudges

What nudges ideally should do

As Thaler (2015, p. 345) points out, "nudges are merely tools" that can be used for good or bad. That is why Thaler uses the phrase "nudge for good" which means that nudges should be used to ensure that people's lives go well, i.e., making people's lives longer, healthier, and better. Note also that Thaler and Sunstein (2008, p. 5) said that nudges should be used to "help solve many of society's major problems." That second aspect will be dealt with in later sections of this paper.

Both educative and noneducative nudges can make it easier for individuals to navigate through difficulties and thereby obtain more of what they want, i.e., increase their satisfaction of their actual preferences (Tomer, 2008, pp. 1705-1707). This means that nudges can enable a nudgee to raise his welfare in the conventional sense. This may not, however, enable him to raise his *well-being* unless the nudge enables him to increase his satisfaction of his true preferences. An individual's well-being (or true well-being) is only raised if in his decision making he is fully informed and choosing in line with his true preferences, and thereby, able to obtain more of what is really right and best for him (p. 1707). The key to appreciating the true potential of nudging is understanding that the purpose of nudging should be to improve people's well-being, not just satisfy their wants. People want many things that are not really and truly good for them. Getting more of those things is what they may desire, but it is not what ultimately makes them better off. Ideally, nudging will raise people's well-being and makes them really better off.

Well-being

Buddhist teachings are very valuable in helping us to understand the nature of human well-being and how it can be enhanced. According to Payutto (1998, p. 33), "when our chosen efforts are founded on wisdom and intelligent reflection and not based on clinging to desires serving our self-interests, it leads us to choose truly beneficial outcomes," ones that contribute to our well-being (Tomer, 2017b, p. 145). Right consumption involves using goods that satisfy true values (or true preferences), whereas wrong consumption involves the use of goods satisfying artificial values (p. 146).

"If consumption involves indulging oneself in order to satisfy desires without consideration of its harmful effects [on oneself or others], that is, without consideration of whether it is consumed compulsively, whether the consumption is associated with pathologies, or whether the consumption is nutritious and otherwise physically and mentally healthy, then the consumption is not likely to contribute to our true well-being. In other words, unless the consumption is contributing in some significant way to our physical, mental, and spiritual health and welfare, and thereby, contributing positively to some aspects of our human development, it is not contributing to our true well-being" (Payutto, 1998, p. 42).

It follows that nudges should generally only be used in the attempt to raise well-being in situations where well-being is significantly below what it could be. A corollary is that nudges generally should not be used to try to raise the consumption of goods having only artificial value. The main point here, of course, is that nudges should only be used to improve people's well-being. Nudge for good, but only for the really good! Don't nudge to increase consumption of sweet desserts.

Nudging in markets?

Little or no need for nudging in mainstream type markets

Should nudges be used to try to improve the performance of markets? Mainstream economists might reply that there is little or no need for nudges in markets, at least in competitive markets. After all, profit seeking firms will be led to produce and sell what buyers

want. This will lead to an economically efficient outcome for the economy that maximizes the net benefits to society. That assumes, of course, that 1) the markets are sufficiently competitive, 2) there are no external effects of these transactions, 3) the relevant goods are not public goods, and 4) buyers are fully informed about the traded goods. If any of these four assumptions do not hold, that indicates market failure, which means that consumers wind up paying too much for products that do not contribute to their well-being. In other words, it means that consumers are not sovereign. But it is important to note that mainstream economists generally believe that with the appropriate kinds of economic intervention from governments, markets will be kept from failing. Therefore, from the standpoint of mainstream economics, consumer sovereignty seems like a reasonable expectation. Consequently, based on this mainstream thinking, there would appear to be little or no need for nudging in markets.

Markets with behavioral market failures

The above analysis of market failure, however, does not take behavioral considerations into account. Unfortunately, consumer sovereignty is not likely to exist unless the following behavioral assumptions hold: 1) consumers really know what provides them with well-being, 2) consumers communicate this to businesses via their market behavior, 3) consumers do not allow businesses to influence them to the contrary, and 4) businesses are strongly motivated, not just to make profits, but to supply goods that contribute to their customers well-being. There are, not surprisingly, strong reasons for believing that these behavioral assumptions about markets typically do not hold. First, consumers' purchases typically reflect what they actually prefer; they are often unaware of their true preferences and what provides them with true well-being. Second, as behavioral economists have learned, people are predictably irrational (Ariely, 2008), and in many situations they are biased in their consumer decision making (Akerlof and Shiller, 2015, p. xi; Tomer, 2017a, p. 79). As a consequence, businesses, whose behaviors all too often have a negatively opportunistic orientation, are likely to recognize and seize opportunities to gain at the expense of consumers, especially when business sellers sense that consumers are vulnerable due to their biases (p. 78).

As Akerlof and Shiller (2015) explain it, businesses are typically in a phishing mode; they are trying to get consumers, the target phishes, to do things that are in the interests of the selling businesses (the phishermen), but things which are not in the interests of the target consumers. For the businesses who are phishing, "it is about angling, about dropping an artificial lure into the water and sitting and waiting as wary fish swim by, make an error and get caught" (p. xi). As a result, many phools are caught. These phools are certainly not sovereign consumers, and their consumption very often does not contribute to their well-being. Obviously, for such consumers, the market has failed. These types of market failures are not the kind recognized by mainstream economists. They are instead *behavioral market failures* (Sunstein, 2014b, p. 16). It turns out that using nudging, perhaps along with other governmental interventions, to deal with these failures can make a lot of sense.

Business motivations in the case of behavioral market failures

Why don't businesses respond to market demand by producing and selling what really is right and best for their customers? There are two main answers to this question. The first answer is the one articulated by Akerlof and Shiller (2015, p. x). To begin, buyers in markets have weaknesses in knowing what they want. These weaknesses give businesses the incentive to take advantage of buyers' cognitive and other biases by learning about them, priming them, and then setting a trap for them (pp. xi-xii). According to Akerlof and Shiller, the key to

understanding the negatively opportunistic behavior of businesses is the combination of highly competitive markets and the very significant profits accruing to firms that exploit their customers' psychological, informational, and emotional weaknesses. These businesses have learned how to utilize manipulation, deception, and trickery and do so in ways that are generally in accord with the business norms prevailing in Western economies (Tomer 2017a). In the view of Akerlof and Shiller (2015), such businesses are simply unable to pass up these highly profitable exploitive opportunities that would otherwise be undertaken by competing companies.

The second answer that explains why businesses often are not oriented to serving the best interests of their customers, but at other times behave with much greater concern for their customers' well-being, is related to humans' two core underlying motivations, self-interest and other interest (or empathy). Paul MacLean's (1990) research on human brain physiology is an important starting point for understanding these core motivations. In MacLean's view, humans' self-interest motivation derives from the functioning of the innermost part of the human brain, our reptilian brain. In contrast, empathic motivation derives from the paleomammalian brain that is located above the reptilian brain and is associated with caring, parental, and other interested behaviors. This understanding of the relationship between brain physiology and motivation gave rise to dual motive theory, which incorporates the view that humans have two core motivations (self-interest and empathy). This dual motivation view is in sharp contrast to mainstream economics' view of humans as motivated solely by self-interest. Gerald Cory (see, for example, 2018) has developed and applied dual motive theory to economics (see Lynne, 2006 and Tomer, 2012 for related research). According to dual motive theory, humans in their economic activity may be motivated by self-interest, at times excessive self-interest, but they are also capable of empathetic behavior and behavior with a much better balance of self-interest and empathy. Arguably, Western business leaders are too often motivated by excessive self-interest and insufficient empathy, which leads to the negatively opportunistic behavioral pattern. On the opposite side of the coin, there is evidence that a significant and growing number of businesses are capable of socially responsible behavior that manifests a desirable balance of self-interest and empathy.

Examples of behavioral market failure and how nudging can help

Consider examples of behavioral market failure in which a seller takes advantage of a buyer, thereby increasing the seller's profitability in a way that lowers the well-being of the buyer. One interesting example of a behavioral market failure is the case of goods with "shrouded" attributes. The shrouded attributes of a good involve the good's extra costs that the consumer pays little attention to because they are not observable or salient. One particular example involves a person who wants to buy a new car and who attempts to understand the fuel economy of different car models in order to help her make a better car purchase decision (Sunstein, 2014, pp. 41-44). The buyer can, of course, consult the fuel economy and energy efficiency information provided by the seller. This conceivably can help the buyer make a good decision about what type of vehicle to buy. If the consumer gives sufficient attention to and understands this detailed fuel economy information, she could presumably save a substantial amount of money, not to mention time, over the life of the vehicle. Unfortunately, things are not so easy. The consumer's problem is that key information is often shrouded, i.e., it is not salient and not presented in a form that draws the consumer's attention to the difference in fuel costs between different vehicle models. And "many consumers are unwilling to make the energy-efficient investments [in understanding the information] even when those investments appear to pay off in the relatively short-term" (p. 44). As a result, car buyers tend

to buy vehicles that are not as energy efficient as they could be, vehicles that use significantly more fuel than makes sense for them given their auto preferences. The result is that consumers' well-being is significantly lower than what it could be. Can nudging help? In this situation, educative nudging in the form of improving the presentation of the fuel economy information to make it more easily understandable (a form of disclosure) can pay off. This kind of nudging not only should lead to better car purchase decisions but reduce the consumer decision bias that vehicle sellers can otherwise take advantage of.

Consider another example of a kind of behavioral market failure that involves a shrouded good (Akerlof and Shiller, 2015, pp. 167-169; Gabaix and Laibson, 2006). In typical shrouded goods, there is a base good and an add-on good. The price of the base good is explicit, known, and advertized, and sellers compete aggressively to sell it. But the selling company will typically hide (or shroud) the prices of the add-on goods and not compete to sell them. In the case of a hotel room, the base good is the room that has a listed price; the add-ons include such things as parking, telecommunications, room service, etc. for which the prices are hidden. The hotel can easily take advantage of unsophisticated customers who do not realize that the charges for the add-ons comprise a very significant part of the cost of their hotel stay. As a result, these unsophisticated hotel customers are easily tricked into paying much more for their hotel stay than they expected. This pattern clearly lowers the well-being of these hotel customers relative to what it would otherwise be. For such customers, the market is failing. What is needed is to nudge hotels toward giving full and clear disclosure to hotel guests of all the costs associated with staying in the hotel. According to Sunstein (2014, pp. 17, 164), in the case of this and other behavioral market failures, nudges typically in the form of disclosures, warnings, and default rules are the most appropriate responses to eliminating or lessening the market failure.

More on seller motivations in behavioral market failure

The behavioral market failures explained above are just a couple of examples (certainly not the worst examples) of business sellers taking advantage of unsophisticated or vulnerable consumer buyers in order to profit at their expense. These kinds of business sellers apparently have a negatively opportunistic orientation to their customers. Moreover, the sellers apparently have excessively self-interested motivation. From a dual motive perspective, these kinds of businesses would seem to be insufficiently motivated by empathy. Another way to put it is that their self-interested motivation is insufficiently balanced by empathic motivation. Perhaps as Akerlof and Shiller (2015) have suggested, these manipulative business decision makers believe that they have no choice but to behave in this manner if other firms in their market are behaving this way and if they want their firms to survive. In any case, businesses are too often drawn into adopting these negatively opportunistic behavior patterns, patterns that lower the well-being of the people who consume their products, and perhaps, those who work in their firms.

Toward higher level, broader nudging

Let's consider how nudging or nudge-like actions might be done at a higher level. To do this, it is important to generalize about the lower level nudges already considered. Lower level nudges are designed to help individuals navigate successfully through their lives. In particular, they generally help individuals act wisely to obtain more of the specific things that they expect will improve their well-being and less of the things that subtract from their well-being. For

example, they might help individuals get more healthy food and exercise and save more for retirement. They also might help individuals be less involved with tobacco products, addictive drugs, alcoholic beverages, and gambling activity. And lower level nudges might help individuals act wisely to get where they want to go, both locationally and with respect to their life's purpose. These lower level nudges are simply helping individuals engage in more wise activities and less unwise activities in order to increase their well-being.

Higher level nudges, on the other hand, are designed to foster wise actions on the part of groups of people and organizations who are dealing with difficult problems that create obstacles to the well-being of their fellow citizens who live in the particular communities, regions, societies, or nations involved. Such higher level nudges might be designed, for example, to counter the socio-economic forces contributing to the growth of chronic diseases in a country. In other cases, these higher level nudges might be designed to counter the dysfunction associated with large scale behavioral market failures. Rectifying such market dysfunctions arguably can make a very important contribution to the well-being of the people in a nation. In many situations, large scale nudging would make more sense than attempting to use many lower level, narrowly focused nudges, especially if the problem involves a complex negative behavioral pattern. Higher level nudges might conceivably become part of a nation's or a state's policy arsenal that is mobilized when certain types of human development are failing. Presumably, carrying out higher level nudges will require a higher degree of wisdom in order to achieve success.

Such nudging actions might to a significant degree involve "taming the free market." This would likely be true in cases where overly self-interested business actions are at the heart of the problem (see Sachs, 2012, p. 164). As Sunstein (2014, p. 10) points out, "free markets ... reward sellers who attempt to exploit human errors." When such exploitation is occurring, the policymakers (including nudgers) would have to learn how the excesses of the free market(s) are interfering with positive human development. Based on what is learned, a plan involving higher level nudges and other actions could be designed.

Kate Raworth (2017) in her book *Doughnut Economics* recognizes that nudges can play an important positive role. In her view, nudging can be very beneficial when "values, heuristics, norms and networks that currently shape behavior" are nurtured and nudged (p. 105). She provides valuable examples of environmental nudging. Further, she points out that effective "nudges ... often work because they tap into [people's] underlying norms and values—such as duty, respect and care" (p. 106). To some extent, using higher level nudging involves conceptualizing the good society and defining its important values. This is because higher level nudging is a key part of the process of improving society. Accordingly, nudges can help one's society eliminate some of the obstacles that are keeping it from becoming a society that its citizens aspire to be part of. Finally, the success of these higher level nudging efforts would be much more likely if the nation's goals were focused more on increasing the aggregate well-being (deriving from both tangible and intangible sources) of its citizens, rather than being focused on achieving largely material goals such as increasing national output and income. In the next section, an example relating to the obesity problem will be considered and analyzed.

Nudging to overcome socio-economic dysfunction: the case of obesity

Past research and the importance of the subject

My past research on obesity is pertinent to this section. My article entitled “What Causes Obesity? And Why Has It Grown So Much?” (Tomer, 2011) developed a socio-economic model that explains the causes and growth of obesity, particularly obesity in an advanced industrialized country like the U.S. My article entitled “Stemming the Tide of Obesity: What Needs to Happen” (Tomer, 2013) outlines the kind of policy efforts needed in order to eliminate or drastically reduce the social problem of obesity. This section of the paper uses these two earlier researches as a starting point. What is new here is explanation regarding how both lower and higher level types of nudging (especially the latter) have a great potential to be used in the battle against obesity. The analysis in this section provides not only an important example of how nudging can help to deal with a society’s obesity problem but how it can help to deal with other social problems and societal dysfunctions. Because a considerable number of socio-economic dysfunctions have underlying causes and patterns similar to obesity, much can be learned from the obesity example.

Obesity and health science

To understand the causes of obesity, it is important to start with health science. Consider the insights of Mark Hyman, a medical doctor and leading writer on the relationship between people’s health behaviors and the state of their health. According to Hyman (2006), the key dietary causes of obesity include: “1) diet high in refined, processed carbohydrates, 2) diet high in ‘bad’ fats, 3) diet low in fiber, and 4) diet low in antioxidants and high in oxidants. The problematic life behavioral patterns are: 1) overly rapid eating, 2) eating in the presence of stress ... 3) sleep deprivation, 4) lack of exercise, and 5) high exposure to toxins” (Tomer, 2011, p. 27). A person who chooses a poor diet and poor behavioral patterns is likely to experience poor intermediate health outcomes that are very likely to lead to obesity (Hyman, 2006).

On the other hand, healthy foods, the consumption of which tends to prevent obesity, are largely whole, unprocessed foods; they are full of fiber, antioxidants, vitamins, and minerals. Many are vegetables. Healthy foods are high in good fats, and they exclude refined grains, sugar, and sugary items. These foods have a high phytonutrient index, a measure of a food’s healing plant chemicals, and a low glycemic load, a measure of the response of a person’s blood sugar to a meal. The consumption of healthy foods contributes to people’s well-being; the opposite is true for unhealthy foods.

Essential elements of the model

To fully understand the causes of obesity, it is necessary to understand much more than the health science factors. Understanding the many external and internal factors that influence an individual’s choice of diet and life patterns is also crucial. The internal factors are the individual’s endowment of 1) personal capital, 2) social capital, 3) health capital, and 4) genes that determine an individual’s physical and psychological predispositions to obesity. The external factors are 1) the infrastructure of obesity, especially the behaviors of various suppliers of processed food; 2) technological change impacting on markets, causing changes in the prices of food and exercise; 3) socio-economic factors contributing to chronic stress in individuals; and 4) the advice about eating behavior from health professionals (Tomer, 2011,

pp. 30-31). The essence of the argument is that obesity tends to occur when vulnerable individuals who have low personal capital, low social capital, low health capital, and genes predisposing them to obesity encounter stressful situations, lower prices of unhealthy food and higher prices of exercise, poor advice from health practitioners, and the large and growing infrastructure of obesity (p. 31). For the purposes here, this paper will mainly focus on two key variables, personal capital (PC) and the infrastructure of obesity (IO), which are defined in the following paragraphs. In other words, the focus is on the motivations and behavior of IO businesses in relation to food consumers whose behavior reflects their PC endowments, particularly their biases and other vulnerabilities.

Personal capital is a kind of human capital embodied in individuals, but, unlike standard human capital, it is not generally associated with investment in education and training. PC is partly the product of one's genetic inheritance, partly the result of one's life-shaping events, and partly an outcome of one's efforts to mature and to grow in nonintellectual ways (Tomer, 2011, p.38). "PC is relevant here because an individual's accumulated PC will determine much about how she responds to the influences deriving from the infrastructure of obesity" (p. 38). PC reflects one's emotional intelligence. In particular, it relates to an individual's ability to be self-regulating, especially one's ability to control impulse, delay gratification, and keep distress from swamping one's ability to think.

The infrastructure of obesity refers to the features of the socio-economy that influence eating negatively and thus tend to contribute to food consumers' poor health and obesity (Tomer, 2011, p. 31). The IO includes the influences deriving from food suppliers, in particular the agricultural, food processing, food distribution, and food preparation industries. The IO businesses are the ones who are producing and selling unhealthy foods, foods that contribute to people's low well-being. David Kessler (2009) has emphasized the role that food processing companies play in making food unhealthy by adding sugar, fat, and salt, not to mention artificial flavoring.

"The food suppliers are not just supplying these unhealthy foods because they are being demanded by consumers. As Kessler (2009) explains, food suppliers are actively designing these foods to enhance their appeal. More specifically, they are creating foods with added sugar, fat, and salt 1) to make them hyperpalatable, 2) to make them override the body's satiety signals, which indicate when one is full, and 3) to make them more habit forming" (Tomer, 2011, pp. 32-33).

The IO food suppliers are creating customers who are "conditioned hypereaters" (Kessler, 2009, pp. 137-141). Such food suppliers are also aggressively using advertising and other marketing strategies to increase the sales of their products. In addition to the food supplying companies, the infrastructure of obesity encompasses powerful social and cultural forces that promote unhealthy diets and lifestyles (Tomer, 2011, p. 34). Food suppliers and their collaborators have set the trap, and they have caught a great many vulnerable, low PC consumers. The result is a high and rising rate of obesity and poor health, in other words, low well-being.

Implications for policy: nudging

Behavioral market failure requires policy actions

It is quite clear that the obesity situation described and analyzed above involves a major behavioral market failure. Food suppliers of many types are taking advantage of the biases, lack of knowledge, and other vulnerabilities of many food consumers. These actions are causing considerable harm and lowering the well-being of a considerable segment of the population in advanced industrialized nations. Because of the magnitude and negative impact of the socio-economic dysfunction, there is a great need for policy actions to rectify the problem.

Higher level nudging is needed

What needs to be done? As Sunstein (2014b, p. 17) has pointed out, in the case of behavioral market failures, concerted government action, particularly nudging, is needed. However, because of the scope of the obesity problem and the deeply embedded nature of the negative behavioral problems, simply using lower level nudging directed at individuals in various locations in a nation seems unlikely to put much of a dent in the socio-economic dysfunction involved. Higher level nudges are needed and may need to be invented. Moreover, already invented types of nudges will presumably need to be adapted to situations involving large scale behavioral market dysfunction.

Examples of anti-obesity nudging

Consider a few examples of nudging that apply to food consumers (see Sunstein, 2014a for a more general list):

- 1) Warnings about the dangers of unhealthy diets
- 2) Attempts to favorably influence food buyers using information about social norms relating to food consumption
- 3) Encouragements to food consumers to precommit to specific healthy types of eating
- 4) Provide reminders about healthy eating. Do this at times and places where its likely to have a favorable influence on eating decisions
- 5) Elicit people's intentions to eat more healthily
- 6) Elicit people's plans to improve the healthiness of their diets
- 7) Provide illustrations of the well-being deriving from healthy eating patterns and lifestyles
- 8) Provide examples of unwholesome, negative eating patterns to be avoided
- 9) Invite people to explore the extent to which they have become emotional or compulsive eaters who respond excessively to certain food stimuli
- 10) Invite people to explore other ways in which negative emotions trigger excessive, unhealthy eating patterns

Consider a few nudging examples that apply to food sellers:

- 1) Require disclosures by food sellers of the ingredients and processes used in preparing their food for sale
- 2) Invite sellers to consider how they could use more healthy ingredients or more healthy processes in their food

- 3) Provide information about how the unhealthy ingredients in and processes used in food preparation can have unhealthy consequences for their customers
- 4) Invite sellers to consider how they and their customers could be better off if their business acquired a socially responsible orientation
- 5) Use of healthy default rules relating to the preparation of foods that could be prepared in a number of different ways
- 6) Provide examples of socially responsible food businesses, how they operate and their relationship to their customers
- 7) Elicit food sellers' memory of how their businesses have in the past enabled specific healthy outcomes to be achieved by their customers

Why anti-obesity nudging can be successful

Anti-obesity nudges like the ones above can arguably be successful if they improve many people's eating patterns and substantially improve the healthiness of the food that businesses are supplying. This would conceivably do much to lessen a nation's obesity problem. In effect, nudges like these would be doing two main things. One, it would substantially lower the biases, vulnerabilities, and lack of information of food consumers, especially for people with low PC and low health capital. Second, it would raise the awareness of food business owners with respect to how their businesses could operate in a way that does not contribute to the obesity problem. It could also conceivably help the business owners make decisions based on a better motivational balance between self-interest and empathy. Certainly, if food business decision makers came to understand specifically how unhealthy foods can severely hurt the health of many consumers as well as hurt the health of the nation, food businesses would be able to make decisions with a much healthier dose of empathy. Such an outcome would do much to raise the well-being of all food consumers. Presumably with less obesity related socio-economic dysfunction in the economy, food markets would serve the public much better, and consumers would be more sovereign. It should be noted, however, that there is probably a significant group of food business decision makers who would not be influenced by nudges or other similar measures that attempt to make their methods of operation less exploitive. To that extent, the positive influence of the above kinds of nudging would not be as great.

For the purposes of socio-economic conceptual clarity, let's take a step back to ponder the essence of the above analysis. It is helpful to focus only on the food consumers and food suppliers in light of both the phishing for phools analysis and dual motive theory. What nudging (especially higher level nudging) has the potential to do is twofold. First, it might help food businesses transition away from their exploitive, negatively opportunistic patterns (in the food sphere at least). Such businesses could then transition toward socially responsible patterns, manifesting much more empathic decision making. Second, it might help food consumers be less biased, more informed, and otherwise less vulnerable. These food consumers would then be much less exploitable by food suppliers. Arguably, such an outcome will do much to rectify the socio-economic dysfunction related to obesity.

Nudging compared to other government policies

Governments do many things and do them in many different ways. The instruments of government policy include mandates, bans, economic incentives and disincentives (including subsidies, fees, and taxes), non-fiscal incentives and disincentives, and restricting choice

(Sunstein, 2014a, p. 1). One important thing done by governments is changing people's problematic behavior, for example, their obesity-related behavior. Doing this involves measures that inform, persuade, and promote. Nudges can do some of this work; however, nudges do not influence behavior by getting people to engage in effortful deliberation. As explained earlier, while nudges can be educative, they differ from standard forms of education that require more effort. According to Sunstein (2015) and others, it is useful to think of nudging as a complement to, not as a substitute for, the other instruments of government policy. Different governments combine nudges with standard policy measures in quite different ways. In Singapore, for example, policymakers have developed a uniquely successful approach that utilizes a mix of nudging and non-nudging instruments depending on the particular government program (Low, 2012). Governments need to compare the typical advantages and disadvantages of nudging to those of other government instruments. Nudging's advantages include: low cost, potential to promote economic and other goals, preserves freedom of choice, can deliver prompt results, can be effective and have a large impact, avoids coercion, and draws on valuable findings of behavioral science (Sunstein 2014a, pp. 1-2). Despite these advantages, nudges are not a panacea; particular nudges can and do fail. That is why Sunstein, Thaler and others strongly advocate the use of empirical tests including the use of randomized controlled trials prior to nudging to improve the effectiveness of nudging and avoid failures that are likely if government nudgers were to rely only on their intuitions and wishful thinking (p. 3).

The ethics of nudging and nudging's critics

Many critics have written to express opposition to nudging on the basis of ethical arguments. The most common of these criticisms of nudging involve the related concepts of autonomy and human agency. One definition of autonomy is "the capacity for an individual to determine and pursue her own conception of the good according to her own will" (Chris Mills as quoted in Sunstein (2015a, p. 516)). Human agency refers to an individual's ability to take whatever actions he or she decides on. At the heart of the various nudge criticisms is the view that when nudges have been instituted, their functioning serves to undermine a person's autonomy and either does not allow full human agency or puts it at risk. This seems to suggest that the presence of a nudge will imply or lead to a situation in which some kind of elite will gain the power to steer people in directions preferred by the elite, but not necessarily a direction preferred by nudgees or by citizens generally (Sunstein, 2015b, p. 210). Certainly it is conceivable that something like this could happen. Sunstein's reply, however, makes a lot of sense. He says that "in a nation that is committed to both individual liberty and social welfare, those [types of] nudges are unacceptable" (p. 210). Sunstein (2015a, p. 513) also points out that when nudges are in place, human agency is retained because individuals need not choose the action toward which they are being nudged. Their freedom of choice is not compromised; they can always opt-out and choose some other action.

Another set of criticisms of nudging are concerned with the concept of paternalism. A government action such as nudging would be considered paternalistic if its goal is to "influence the choices of affected parties in a way that will make those parties better off" (Thaler and Sunstein, 2003, p. 175). Critics especially object to paternalism if the policy is attempting to protect the affected individuals from themselves (Sunstein, 2014b, pp. 1-10). The critics argue that individuals (nudgees) are or should be in control over their own bodies and minds. Therefore, paternalistic actions are unnecessary interferences in individuals' lives (p. 7). Moreover, individuals know themselves better than any policymaker can know them.

Individuals, of course, make mistakes, but they should be free to be in charge of their lives and to learn from and correct their mistakes. Paternalists, on the other hand, challenge the above view (known as John Stuart Mill's Harm Principle (1859)). Sunstein in particular argues that there is a strong moral argument for paternalism and for nudges that are paternalistic (Sunstein, 2014b, pp. 4-5). The essence of the paternalistic argument is that "people are prone to error, and paternalistic interventions would make their lives go better" (pp. 4-5). Some of people's mistakes are extremely damaging. Also, individuals in "free markets" are "exposed to rampant exploitation by businesses." Buyers are "easily manipulated by sellers into making bad choices" (pp. 8-9) in part because people are myopic, impulsive, impatient, procrastinating, unrealistically optimistic, etc. For these reasons, Sunstein and others support sensible paternalistic nudges that provide people with needed protections while respecting their dignity and desire for freedom of choice.

A social movement is also needed

To deal with a major socio-economic dysfunction like obesity, relying only on specific policy interventions including nudging may not be sufficient. What also may be necessary is a social movement. In the case of obesity, Klein and Dietz (2010, p. 398) state that "the breadth of policy and environmental changes necessary to address obesity require changes on the scale of a social movement." Such a social movement would be characterized by the mobilization of many grass-roots groups who are strongly motivated by a perception of a common threat (Tomer, 2013, p. 92). "For example, the tobacco control social movement in the U.S. owes much of its success to the population's perception of a clear health threat (i.e., lung cancer)" (p. 92). With respect to obesity, although higher level nudges in conjunction with other policy initiatives can be extremely important, they may not be enough, even if well designed and implemented, to put a stop to the obesity epidemic. Stemming the tide of obesity might require a social movement involving a combination of business, community, and government actions. The purpose of such a social movement would be to create a powerful influence countering the cause(s) of the social problem. It would do this by mobilizing all available resources to effectively resolve or mitigate the problem. The upshot is that an antiobesity social movement will be necessary when conquering obesity requires the creation of a large scale socio-economic environment that is generally conducive to healthy eating, exercise, and lifestyle (p. 92).

Conclusion

The nudge concept developed by Richard Thaler and Cass Sunstein has turned out to be a very important one. An indication of its importance is that a study published in 2014 "reports that 136 countries around the world have incorporated behavioral sciences in some aspects of public policy" (Thaler, 2015, p. 344). Many of these policy initiatives have utilized nudges or nudge-like governmental interventions. This paper develops the nudge concept further building on the impressive foundation created by Thaler and Sunstein.

The purpose of nudges is to improve people's well-being. Such improvement requires efforts that are founded on wisdom and intelligent reflection, and therefore, lead to truly beneficial outcomes. Two kinds of nudges, educative and noneducative nudges, create the human capital that is an essential part of an economy's capacity. Nudges contribute to a nation's soft infrastructure that complements its hard infrastructure. Most nations suffer to some extent

from severe socio-economic dysfunctions that often derive from behavioral market failures and involve deeply embedded negative patterns. Advanced industrialized nations, for example, are particularly afflicted by high rates of obesity related to negative eating and lifestyle patterns associated with the advance of “civilization.” There is reason to believe that “higher level nudges” (along with more conventional policies) can play a key role in resolving and mitigating obesity as well as making an important contribution to overcoming other severe social problems and societal difficulties. Using a combination of lower and higher level nudges is arguably a very promising way to improve people’s well-being, but using them is not a trivial undertaking. Using nudges well requires wisdom about what really contributes to people’s well-being. It seems that to successfully manage a modern economy may require more than intelligence and knowledge; it may require us to become wiser and softer in our thinking. Utilizing lower and higher level nudges in various ways to improve people’s well-being would seem to be part of the process of gaining the requisite wisdom.

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SUGGESTED CITATION:

John F. Tomer, "Realizing nudging's potential: improving well-being and reducing socio-economic dysfunction", *real-world economics review*, issue no. 86, 10 December 2018, pp. 66-82,
<http://www.paecon.net/PAERReview/issue86/Tomer86.pdf>

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A comment on corporations

Peter Radford [Publisher and author]

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There is a continuum between the abstraction of economics theory and the practice of business. The two, after all, coexist in the same domain. The one seeks to explain phenomena which are consequences of the other. In the past few decades the highly stylized version of the firm that exists in economic theory has deeply influenced the way in which business is practiced. This is despite the detail excluded in theory, and the evident mis-characterization of the main vehicle of business – the corporation. Economics cannot theorize correctly about the firm until it absorbs the reality of the corporate form that dominates business.

Mainstream economics is very good at explaining what might happen with respect to economic transactions in an idealized world. That idealized world is created by expunging all manner of irritants that might make it difficult to model or teach. The entire resultant edifice is the tour de force of abstraction that has dominated economic theorizing for many decades. Unfortunately, it is the irritants, the very things removed in the process of abstraction, that are of most importance and interest to those of us trying to explain the real world. And amongst those the modern corporation stands out as a prime example.

The world of Adam Smith and David Ricardo had few, if any, of the large complex production processes that now dominate the economy. A world of small workshops and small farms it would have been familiar to many generations stretching back before their time. Agriculture was the primary activity, and the cycles of harvests provided the most apt metaphors used by writers of that age. The Physiocrats of France provide the iconic example of this pre-industrial thought process that Smith and Ricardo sought to amend to take into account the changes they observed around them.

Later, as economics responded to the challenge of the Marxist critique of early industrialization, it retained its agricultural analytical origins and ignored the increasingly complex production activity housed in the emergent industries of the mid 1800s. Instead it sought to project a more scientific image in the manner of the hard sciences each of which was producing astounding new ideas and creating an aura of inevitable advance and technical discipline. In economics this scientific turn took the form of what is now called the marginal revolution and the steady adoption of a more formal methodology.

Whilst it is easy to explain this evolution of economic thought as both an ideological and formalist project it is always surprising to recall how many major economic phenomena were left out of the discipline's progress. The organization of business, except for the primitive description given to its engagement with so-called markets, is largely ignored and has been set aside as the proper domain of organizational or business theory to be taught outside the core of economics. This is despite the very obvious dominance of large-scale business activity in our modern economies and the inextricable inter-relationships between firm activity and macro-economic results.

This is even true of what is now called micro-economics which is supposedly the more rigorously grounded aspect of the discipline and which forms the foundation upon which theories of the macro economy are supposed to sit. Like much of modern micro, the theorizing of the firm within the mainstream is more axiomatic, logically derived, and ideologically convenient than empirically grounded. That businesses routinely seek to disrupt the marketplace by adopting various strategies, trade combinations, restrictions on the flow of information, and other obvious actions inconsistent with what is taught, leaves economics with little available technique to engage in real-world discussion of the corporation. The standard toolkit of marginal analysis, equilibrium, rationality, and perfections of information stand in stark contrast to the routine uncertainty, limited information, and perpetual change that confronts business management. The attraction of the language of modern micro to our business and investment class is consequently its ideologically convenient cover for wealth accumulation and protection rather than for its explanatory power. Real business, especially the corporation, represents an impossible challenge to economic theory.

It wasn't until the apparent collapse of capitalism in the early decades of the 20th century that the problem of the firm became apparent. Urgent questions were then asked about the stability of the economic system itself and the behemoth businesses that bestrode the landscape. In the context of economics this problem was most clearly articulated by Ronald Coase who asked the simple question, why do firms exist?

In Coase's words:

“Within a firm these market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur coordinator, who directs production. It is clear that these are alternative methods of coordinating production. Yet, having regard to the fact that, if production is regulated by price movements, production could be carried on without any organization at all, well might we ask: Why is there any organization?”¹

That he even needed to ask such a question demonstrates how remote economic theory had become from the actual activities comprising a real economy. After all, if the naïve model of market supremacy was valid, and if its perfection as an allocative mechanism was supreme, why, Coase asked, do business firms appear to be the preferred option for production by the pragmatic minded business class? What was it that economic theory was missing? His words are telling in another way: note the reference to the “entrepreneur coordinator”. There is a need, tracing its origins back to the beginning of the discipline, to attribute business coordination to individuals rather than to systematic organization. The latter smacks too much of central planning. So much so that even Coase, asking the right question, refuses to engage fully with the realities of business.

It was because of this difficulty of engagement that the response within economics to the Coasian challenge was a long time emerging and, when it did, was still somewhat distant from reality. The nature of the firm has engaged a host of economists seeking to respond to Coase's challenge. There are proverbial shelves full of books and papers addressing

¹ R. H Coase, “The Nature of the Firm”, *Economica N. S.* 1937, 4:386-405, reproduced in R.H. Coase, *The Firm, The Market, and the Law*, Chicago, The University of Chicago Press, 1988.

organization. The compendium of papers edited by Oliver Williamson and Sidney Winter² is a good example of the genre. Nowhere, though, in the index is the corporation addressed in itself. The vehicle for the firm, its legal construction, somehow eludes analysis.

The most advanced response to Coase came in the form of what is called Transaction Cost Economics [TCE] which argues that there are sufficient costs to transacting in open markets that it is often more efficient to enclose sets of transactions in a contained space outside the market. These enclosed organized spaces are the business firms we observe around us. Indeed, so compelling is the need to enclose transactions within centrally managed firms that it is reasonable to argue that market style organization is the rare exception needing explanation rather than being the rule. This represents a considerable challenge to the modern mainstream position that harks back to pre-industrial times and posits that transacting in “free” markets by arms-length self-interested and rational agents will inevitably produce optimal allocations of resources. The contrast between real business organization and the fantasy of economic theory is nicely captured by Williamson, a primary architect of TCE in the title of his book “Markets and Hierarchies”³. Economic theory teaches the supremacy of decentralized markets. The business world stands firmly in the corner of centralized administration through hierarchy. Our modern CEO’s, despite their protestations of support for markets, are more comfortable with activities akin to a politburo than they are to the tumult of the pedagogical marketplace.

Even though TCE represents a well-articulated theory of the firm – e.g. see the summary by Ketokivi and Mahoney⁴ – it remains, at heart, an effort to reconcile business with the prior existing requirements of economic theory. A separation still exists between modern economic theory and common business practice which has unfortunate consequences. It implies an inability on the part of mainstream economics to engage in discussion about corporate activity. Modern theory requires economists to view business through the distorting lens of a binary choice: in their world activity takes place either in government or market spheres. Business simply disappears as a category of interest leaving a yawning gap that analysts of real economies are forced to engage by other means.

This disinterest in, and technical inability to comment on, business on the part of mainstream economists leaves economics on the sidelines. Vast swathes of economic activity sit outside the purview of economic theory. Nowhere is this more obvious than in the growing and lively post-crisis discussion of the role of corporations as causes of that crisis and as contributors to the malaise within the middles and working classes of our advanced western economies.

This is not to suggest that mainstream economics hasn’t had a great influence on business. It has. The issue is that its influence has been a consequence of the ideological content of mainstream theory rather than of its formal content.

Take, for example, Milton Friedman’s infamous 1970 *New York Times* article in which he articulated the right-wing argument that the proper purpose of management in business was to earn profits on behalf of the shareholders who own the firm. In Friedman’s telling any other

² Oliver E. Williamson and Sidney G. Winter, *The Nature of the Firm. Origins, Evolution, and Development*, Oxford, Oxford University Press, 1991.

³ Oliver E. Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications*, New York: The Free Press, 1975 .

⁴ Mikko Ketokivi and Joseph T. Mahoney, “Transaction Cost Economics as a Theory of the Firm, Management, and Governance”, Oxford Research Encyclopedia of Business and Management, Oxford University Press, 2018 [online Oct 2017].

activity, such as those often referred to in what is known as stakeholder theory, are at best a distraction and at worst a loss of wealth to society at large. Friedman, in his familiar patronizing tone, thrashed away at efforts by management to take the interest of non-shareholders into account as representing an incipient form of socialism. Social responsibility, which he invariably put in quote marks in order to highlight his contempt, would extend, in his words, “the scope of the political mechanism to every human activity”. How ironic, then, that the Chicago School of thought he was intimately associated with founding, does the opposite: it advocates extending the economic mechanism to every human activity regardless of its relevance.

Here is the final paragraph of that article:

“But the doctrine of ‘social responsibility’ taken seriously would extend the scope of the political mechanism to every human activity. It does not differ in philosophy from the most explicitly collective doctrine. It differs only by professing to believe that collectivist ends can be attained without collectivist means. That is why, in my book *Capitalism and Freedom*, I have called it a ‘fundamentally subversive doctrine’ in a free society, and have said that in such a society, ‘there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud’.”⁵

Friedman’s bluster had a very long lasting and pernicious effect on the economy. He helped launch the ideology undergirding the shareholder value version of business theory that takes his notion and raises it to iconic status. For the decades subsequent to his *New York Times* article Friedman’s influence has permeated management, business education, business law, and political dialog. It is now taken as axiomatic that managers of corporations must act on behalf of the firm’s shareholder owners.

This right-wing framing of the problem of management flows naturally from the need inherent in mainstream economics to reduce all problems to allocations of privately-owned property. Somebody *has* to own a firm in order for the rules of economics to kick in. Who else could it be but the shareholders? That this view, right or wrong, happily coincided with the political need of conservative business advocates made it a powerful and easily absorbed idea. In only a few years after Friedman’s article shareholder value theory had swept all before it and had been augmented by all sorts of technical support in the form of Jensen and Meckling’s articulation of agency theory⁶ in which shareholders are cast as “principals”; Prahalad and Hamel’s core competency theory⁷ in which managers are urged to rid the corporation of the clutter that might detract from shareholder value; and other importations of mainstream economic into business teaching. Forty odd years later and no one seriously challenges the notion that business ought to be conducted solely on behalf of shareholders.

⁵ Milton Friedman, “*The Social Responsibility of Business is to Increase its Profits*”, *The New York Times Magazine*, Sept. 13, 1970.

⁶ Michael C. Jensen & William H. Meckling, *Journal of Financial Economics*, October 1976, Vol. 3, No. 4, pp. 305-360.

⁷ Prahalad, C. K., & Hamel, G. “*The Core Competence of the Corporation*”, *Harvard Business Review*, Vol. 68, No. 3, 1990, pp. 79-91.

It is not clear, certainly not in the context of his 1970 polemic, whether Friedman even considered the law when asserting the priority of shareholders. It seems more likely he was driven by his own ideological priorities. Yet there was considerable legal discussion on the subject in the early 1930s. In particular there had been a strongly argued dialog between Alfred Berle and Merrick Dodd on the issue initiated by Berle, who argued forcibly along the same lines as Friedman did decades later. Berle's opening paragraph sums the argument up neatly:

"It is the thesis of this essay that all powers granted to a corporation or to the management of a corporation, or to any group within the corporation, whether derived from statute or charter or both, are necessarily and at all times exercisable only for the ratable benefit of all the shareholders as their interest appears."⁸

Dodd published his response a year later, pressing back hard against the notion that shareholders have such primacy. Instead he pointed out that management had been viewed historically as more of a public than a private activity and that, as a consequence, the public impact of a corporation had to be taken into account. In his paper he referred to the comments of the then CEO of General Electric who had asserted that he thought of himself more as a trustee of the institution than as an attorney for the investors.

This dialog was taking place a time of great economic distress, when the government appeared to have failed, and so both writers were searching for a locus of social responsibility. The corporation, and its management appeared to be such a place. But to make it so they needed it to be more than a private entity. It had to have a public responsibility also. Indeed, over the next few decades it was Dodd's perspective that prevailed as was recognized by Berle himself as late as 1954. So, Friedman was simply resurrecting a debate that had been settled twenty years earlier. He re-asserted what had been the losing side: that of shareholder primacy.

Except: there is no legal foundation to the reasoning that management needs to optimize profits for shareholders. As the legal scholar Lynn Stout argues:

"The notion that corporate law requires directors, executives, and employees to maximize shareholder wealth simply isn't true. There is no solid legal support for the claim that directors and executives in U.S. public corporations have an enforceable legal duty to maximize shareholder wealth. The idea is a fable. And it is a fable that can be traced in large part to the oversized effects of a single outdated and widely misunderstood judicial opinion, the Michigan Supreme Court's 1919 decision in *Dodge v. Ford Motor Company*."⁹

So, the naïve shareholder value perspective completely both ignores the history of the corporation which is an organizational form that long pre-dated industrialization and misrepresents legal opinion.

More to the point: corporations, far from being products of the free market, are actually franchises of the state. They are sub-contracted jurisdictions.

⁸ Alfred A. Berle, "Corporate Powers as Powers in Trust", *Harvard Law Review*, 44, 1049, (1931).

⁹ Lynn Stout, *The Shareholder Value Myth, How Putting Shareholders First Harms Investors, Corporations, and the Public*, San Francisco, Berrett-Koehler, 2012.

To be a corporation is to possess a charter from the state. That charter brings privileges not available to non-corporations. The most notable privilege is that the corporation is recognized as a distinct legal entity separate from any “natural” person who may be associated with it. And because the corporation is brought into existence prior to it being populated or animated by any natural person, it is not owned by any of them. It is unowned. In this sense it is akin to a nation state, the church, most universities, and, at least here in the US, most towns. It would be odd to describe any of those bodies as being owned by the people who animate them. Yet we routinely talk of firms being owned by stockholders. It is this misattribution of ownership that leads most economists astray in their theorizing.

The advantages that the privileges of being a corporation bring have long been recognized. The ancient Romans set up corporations for business purposes for exactly the same reasons we do nowadays: it makes the joint ownership and management of property for short term business purposes much more efficient than alternatives such as the traditional partnership. When a partner leaves a partnership, the remaining partners are obliged to pay out the leaving person’s share of the accumulated resources of the partnership. This can often strain the organization to breaking point. In a corporation, anyone withdrawing their financial support simply sells their share to someone else. It is not the responsibility of the corporation to pay out anything. The organization persists, and its shareholders are temporary. This is something that easily eludes mainstream economic theory, but is obviously attractive for any business activity that requires long term investment or complex financing.

Hence the sudden rise of corporations in the business sphere after industrialization. Prior to that, the corporate form was found most often in ecclesiastical or educational settings. Back in Medieval times it was mostly the church and then the universities who operated under a charter. A typical bishopric was chartered. It would be nonsensical to speak of the Bishop owning the bishopric. Each bishop was simply the temporary custodian of what was a long term, if not perpetual, entity.

David Ciepley nicely summarizes this crucial point thus:

“As is true of a town, a corporate firm’s assets are not owned by natural persons, but by an abstract legal entity – the ‘artificial person’ of the corporation, which assumes the legal position of sole proprietor. This fact should immediately explode the most insidious myth about the business corporation, that it is owned by its stockholders. The whole point of the legal form is to transfer ownership of the business assets to this legal entity, which in principle ‘never dies’. This prevents investors from pulling these assets out and liquidating the firm, and it allows economic liabilities generated by the firm to be shifted from natural persons to this entity. Since the legal entity owns the assets of the business corporation, the stockholders obviously do not.”¹⁰

It was this clear separation of the assets of the corporation from the people animating it that was the most advantageous aspect of a charter. The bishopric, university, or town could own, manage, and buy or sell property in its own name. They were all regarded as being legal “persons” for such property-owning purposes. This is the origin of the legal personhood that

¹⁰ David Ciepley, “The Corporate Contradictions of Neoliberalism”, *American Affairs* Vol. 1, No. 2, May 2017, pp. 58-71.

has become so controversial in our modern era. And those entities were all granted this privilege, and advantage, because they all were assumed to be producing a public benefit. A benefit that was normally stated in their founding charter as the reason for being given a charter in the first place.

So, the original corporations were a hybrid organizational form. Neither entirely public nor entirely private they were designed to produce public goods using private financing. The quid pro quo being that the private financiers could make a profit as long as the public good was provided as chartered.

It is because of this hybrid design that the theories of the firm found in mainstream economics textbooks miss the point. Or, rather, they start well along the chain of argument and take the corporation as a given. Capitalists adopted the corporate form because of its property-owning advantages over the partnership form. It was a more efficient vehicle for the concentration of the large amounts of cash needed to undertake the risky activities of long-distance trade or industrial production. Yes, the corporate form economizes on transaction costs, but that is a radical understatement: without the corporate form those transaction costs are *permanently* prohibitive to the activity. No sufficient amount of complex contracting – as found in the so-called “nexus of contracts” theory of the firm – is possible in a marketplace.

Not even in an information dense marketplace such we experience on the digital age. And within the walls of the corporation central planning dominates activity.

It is the market that is the anomaly for the organization of production, not the business firm. In particular not the business firm organized as a corporation.

It is also this dependence of the corporation on the state for its legitimacy that has been a source of friction throughout the industrial era and up to today. The tension between the state as contractor and the corporation as sub-contractor has ebbed and flowed with both sides claiming victory at different points in history.

The first big break for the corporation here in the US came as far back as 1819 when the original trustees of Dartmouth – which was then not the college we know it as today – challenged the state’s interference in its internal organization. The US Supreme Court ruled in favor of Dartmouth by asserting that the original charter was a contract and thus could not be violated by the state’s attempted legislation to upend it. This was the confirmation of corporations having the very property rights that was to be so attractive to later capitalists. Prior to this, and particularly in the UK, industrialization was still taking place in either family run or partnership-run organizations. After the Dartmouth decision the corporate form was dusted off from its Medieval shelf and re-purposed for industry. With its property rights settled and on a firm footing the corporation became the obvious vehicle for business.

Recent controversy is less about these property rights than it is about civil rights. The most contentious examples being the frequent use of the Fourteenth Amendment to extend the rights of business. This is the Constitutional amendment designed to protect former slaves from discrimination, but its overwhelming use in the Supreme Court has been to extend the civil rights of business. It is this much more fractious attribution of “personhood” to corporations that has gained so much attention, especially since the Citizens United case a few years back. By granting corporations freedom of speech, which was surely never on the minds of the Founders writing the Constitution, the Supreme Court carried the notion of civil

rights further than ever before and, by extension, twisted the American electoral system even further away from any pretense of democracy.

The Founders were all intimately aware of the corporate form of organization because most of the original colonies were established under corporate charters from the state in England. Indeed, when they were searching for a basis for their new nation, they adopted the chartered corporation as their model, with “we the people” being the sovereign conferring legitimacy on the charter, now called a constitution, and all the usual trappings of corporate existence – bylaws, methods for limiting the charter, etc. simply transferred over. The US is itself a giant corporation in this view.

The Citizen’s United case, and the subsequent Holly Lobby case a few years later, the latter extending religious freedoms to corporations, demonstrate the confusion the law has with corporations.

On the one hand the law states that the corporation is its own entity, unowned but with ownership rights separate from those people animating it. This is the property rights tradition of law. On the other hand, at its convenience, the law has looked past that separate entity and attributed the rights of the people within the firm to the firm itself. This is the civil rights tradition of law. All the modern controversy extends from this latter tradition.

The Supreme Court oscillates between these two traditions. Sometimes treating corporations as mere associations of people, in which case it attributes personal rights to the aggregate of those people i.e. the corporation, and other times protecting that same association from the downside of personal property problems stemming from corporate failure i.e. by creating and then extending limited liability rights that natural persons do not have.

So, the tension between the state and its offshoot corporations persists and is magnified by troubling inconsistencies in the attribution of which rights belong with the privileges that corporations are given in their charters.

If corporations want the privileges that give them their transaction cost advantage, then they ought to sacrifice their appetite for civil rights. Or the other way around. Until they do, they will incur the anger and hostility of many more commentators than otherwise.

The aggressive assertion of corporate rights, especially those that allow business to interfere in the legislative process, is detrimental to democracy. Those of us who seek to defend democracy from the oligarchs need to remind ourselves of the franchisee status of corporations. They exist to provide public goods – even if those goods are produced with private means they are public because they flow from the corporate form of organization. Regulating business to this end is entirely legitimate and not at all an interference in the so-called free market. Corporations are sub-contractors of state authority. They have franchised privileges that give them advantages over other types of organizations. The regulatory “cost” of adhering to their chartered course is actually not a burden: it is the price for those advantages. It is the market price for their very legitimacy.

And the contradictions between reality and theory will continue to befuddle economists of all ideological sorts.

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SUGGESTED CITATION:

Peter Radford, "A comment on corporations", *real-world economics review*, issue no. 86, 10 December 2018, pp. 83-91, <http://www.paecon.net/PAEReview/issue86/Radford86.pdf>

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The enigmatization of economic growth

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Abstract

In virtually every material science, the process of growth is not only well understood, it has been systematically reduced to its thermodynamic and/or kinetic equivalent. That is, growth is a function of resource and energy availability, whether it be within a stationary or non-stationary environment. This begs the question, why is economics the outlier, the exception? Why are models of economic growth decoupled from the basic science of material processes? This paper attempts to answer this question by focusing on the formalization of growth. It will be argued that for a number of reasons, the economics profession has enigmatized material processes, introducing concepts that were orthogonal to the laws found in the material sciences, leading to the current situation where a whole new generation of enigmatic approaches (quality ladders, institutions, etc.) has emerged to understand previous enigmas.

Keywords economic growth, mainstream models, enigmas, consilience

JEL Codes O40, O47, O57, Q43.

1. Introduction

In virtually every material process-based field/discipline, the process of growth is not only well understood, it has been and is systematically reduced to its thermodynamic and/or kinetic equivalent (biology, ecology, demography). In short, growth is either a function of growth in energy availability/use – whether it be within a stationary or non-stationary environment – or an increase in second-law efficiency. The quintessential example is photosynthesis where the growth of biomass is a function of solar radiation, the latter being the force that acts on carbon dioxide and water to produce carbohydrates/sugars. This begs the question, why is economics the outlier, the exception? This paper attempts to answer this question by focusing on the very way in which the profession has formalized material processes. It will be argued that for a number of reasons, the economics profession, by enigmatized a simple energy-based material process, has generated findings (i.e. the Solow residual) which have prompted/led to the increased enigmatization of the growth process.

The paper is organized as follows. To begin with, we present a consilient approach to modeling material processes in general, namely the energy-organization approach according to which output is increasing in terms of two universal factor inputs, namely broadly-defined energy and broadly-defined organization. This will then provide the basis for a comprehensive review of the literature organized around two themes, namely steady-state growth and non-steady state growth (technology shocks). This will be followed by a discussion of consilient approaches to growth – that is, approaches that incorporate elements or aspects of physics. We end with a set of external – read: scientific – guidelines for future work on growth.

Table 1 Material processes, energy and organization

Material Process	Energy Input	Organizational Inputs
Chemical Processes	Heat	Kettles, Ladles
Manufacturing Processes	Kinetic Energy	Simple and Complex Tools
Photosynthesis	Solar Radiation	Molecular Structure of the Raw Materials
Mitochondria	Glucose	Molecular Structure of Raw Materials

2. Consilient formalizations of growth

While this may come as a surprise to some, economics is not the only scientific discipline in which growth and the growth process are integral parts. In fact, essentially all material sciences focus on growth and hence have developed analytical frameworks to describe and understand it. Take, for example, biology, specifically plant biology which has modeled growth in terms of photosynthesis, where solar radiation powers a series of chemical reactions which result in the production of glucose. As in all other material sciences, energy is the essential factor input. Unlike material processes as studied by engineers, there are no tools (simple or complex) involved. Similarly, unlike cell growth where the set of instructions is contained in the organism’s RNA or DNA, there is no specific set of instructions nor of supervision. Table 1 presents a list of material processes and the work-energy- and non work-energy-based factor inputs.

Beaudreau (1998) provided a consilient approach to understanding material processes and growth in general – that is, across disciplines. The energy-organization (hereafter EO) approach models material processes in terms of two universal factor inputs, namely broadly-defined energy and broadly defined organization, the former being physically productive, while the latter being organizational. In keeping with basic mechanics and thermodynamics, energy and energy alone can accomplish work, the implication being that all other factors are organizational in nature.

$$W(t) = \eta[T(t), S(t), I(t)]E(t) \tag{1}$$

The latter, in turn, is a function of $S(t)$ the supervisory input, $T(t)$, tools, and $I(t)$ information. In keeping with basic physics, the latter three factor inputs are not physically productive, but rather are organizational in nature, affecting second-law efficiency.¹ Better tools (i.e. Watt’s external condenser, the Boulton-Watt dual-action steam engine, electric unit drive) increase energy efficiency by minimizing losses. As η is bounded from above, it stands to reason that organizational innovations will have limited effect on output and output growth (Beaudreau and Lightfoot, 2015). Equation 1 provides a simple description of the EO approach to material processes, with $E(t)$ being the energy input and η being the thermodynamic concept of second-law efficiency. This can be seen as a measure of energy productivity, which in this case, is a function of the relevant organizational variables, including tools ($T(t)$), supervision

¹ One could argue that they are organizationally productive in the sense that they affect the “quality” of the material process which has a bearing on second-law efficiency – that is, the productivity of energy.

$S(t)$, and information $(I(t))$.² Beaudreau (1998) maintained that this simple model was universal in scope, being applicable to all material processes.

The EO approach to growth is straightforward, namely that growth of the output is an increasing function of growth of the energy input as well as growth/innovations in η , second-law efficiency. The key as far as we are concerned is the universality of Equation 1. Any and all growth processes in the material sciences is/are predicated on growth in the energy input, and, the case that concerns us here, growth in the organizational context. For example, in the case of economic material processes, growth requires an increase in energy as well as an equivalent increase in tools and supervision – conventional capital and labor.³

This raises the question of productivity or, put differently, the contribution of factor inputs to output and growth. In keeping with basic mechanics and thermodynamics, the only physically productive factor input is energy/force. All others are organizational inputs, which together define the material process, but are not productive in the traditional sense.⁴ Put differently, they increase with output, but are not the ultimate cause.⁵ Frederick Soddy captured the essence of material processes – animate and inanimate – in the following parable.

“At the risk of being redundant, let me illustrate what we mean by the question ‘How do men live?’ by asking what makes a railroad train go. In one sense or another, credit for the achievement may be claimed by the so-called ‘engine-driver,’ the guard, the signalman, the manager, the capitalist, the share-holder,-or again, by the scientific pioneers who discover the nature of fire, by the inventors who harnessed it, by labour which built the railroad and the train. The fact remains that all of them, by their collective effort could not drive the train. The real engine-driver is the coal. So, in the present state of science, the answer to the question how men live or how anything lives, or how inanimate nature lives, in the sense in which we speak of the life of a waterfall or of another manifestation of continued liveliness, is, with few and unimportant exception, ‘By sunshine.’ Switch off the sun and a world would result lifeless, not only in the sense of animate life, but also in respect of by far the greater part of the life of inanimate nature” (Soddy, 1924, p. 4).

3. Literature review: steady-state growth models

In this section, we review the steady-state growth literature, focusing on the underlying microfoundations – that is, the implied formalizations of material processes, with the EO approach as our guide.

For the most part, this literature consists of models/approaches that are based on neoclassical production theory where the emphasis is on labor and capital, and in more

² While all are ultimately energy based, the corresponding energy has no bearing on output. For example, labor or supervision is energy-based (workers or control devices). Information, specifically information transmission, storage and retrieval, is also energy based.

³ In artisanal material processes, the energy input is provided by human beings, specifically by human muscles. See Beaudreau (1998) for a detailed taxonomy of material processes and energy inputs.

⁴ For more on the role of tools in material processes, see Alting (1994) and Beiser (1983).

⁵ In most material processes, organizational inputs are minimal (e.g. photosynthesis).

recent cases, other factor inputs such as materials, services and energy (Berndt and Wood, 1975).

The Harrod-Domar (HD) and Solow-Swan (SS) models are steady-state neoclassical growth models, as both focus on labor and capital, and both derive the equilibrium steady-state growth rate. As such, both see labor and capital as being physically productive. Where they differ is in terms of factor substitution with HD being based on fixed proportions and thus no possibility of labor-capital substitution, and SS allowing for unlimited substitution. Ultimately, the steady-state growth rate is defined as the sum of the rate of growth of the labor input and the rate of technological change. Technological change is incorporated in both, but not modeled explicitly (i.e. exogenous). In short, technological change is of the manna-from-heaven type, with no specific structure. It is fair to say that the HD and SS approaches to growth are the *de facto* gold standards of the growth literature as virtually all subsequent work is a variant of these models.⁶

The enigmatization of growth that is inherent in these models, we maintain, owes in large measure to the enigmatization of the underlying material processes, which in turn can be traced back to the earliest attempts on the part of moral philosophers and political economists to understand wealth and its creation. For example, in Chapter 1 of Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations*, industrial material processes are modeled as being labor based, with labor productivity (a scaler) being a function of (i) worker learning (ii) reduced down time, and (iii) the introduction of machinery. Ironically, while labor had been reduced to a marginal factor input, overseeing steam-powered machines, Smith put it at the center of his analysis, a decision that would be heavy in consequences. For roughly a century, labor was front and center, while the steam engine was couched in a parameter.

Table 2 Neoclassical and other enigmas

Enigma	Violation
Capital is physically productive	Principles of basic mechanics
Labor is physically productive requires both, yet worker-less factories exist	Machine operatives production
Physically productive labor and capital can be substituted	Neither is physically productive
Energy/force is ignored	
Production functions exist	
Solow residual	

As it turned out, this became the central theme of Karl Marx's labor theory of value, namely that labor was the only productive factor input and as such was entitled to the entirety of the product. Ironically, throughout Marx's life, labor was little more than an organizational factor input, overseeing the workings of machines. Its brawn no longer powered the material processes of the industrial revolution, yet it remained at the center of the discourse.

The resulting crisis in classical economics (after all, Marx should be considered to be a *de facto* classical economist), led eventually to the neoclassical rejoinder, one that evacuated the

⁶ The Harrod-Domar model has made a comeback of late, being the basis of Thomas Piketty's work on capital in the 21st century.

problem of (unearned) profits by simply decreeing capital to be physically productive. No justification was, nor could be given based on the role of tools in classical mechanics and applied physics. While a stop-gap measure intended to calm the waters, it would go on to muddle them even further. By the end of the century, material processes in economics were defined in terms of two, organizational, non-physically productive factor inputs, namely labor (supervisors) and capital (non-productive tools).⁷

While both are necessary factor inputs, the problems stemmed from and continue to stem from the underlying implications, namely that both are assumed to be physically productive with an average and marginal product. Ironically, neoclassical stalwart Alfred Marshall, in his 1890 magnum opus, *Principles of Political Economy*, referred to workers as “machine operatives,” yet continued to view them as being physically productive. The list of associated enigmas is provided in Table 1, where we see that unlike elsewhere the material sciences, organizational inputs (i.e. tools) are assumed to be physically productive. Similarly, labor or what is essentially a supervisory factor input is also assumed to be physically productive. Together, these two assumptions are the metaphorical equivalent of a fuel-less or energy-less automobile complete with driver – or glucose-free mitochondria. Another interesting enigma is the concept of labor- capital substitution and the resulting implications, namely that output can be maintained by giving up one and getting one of the other. How this came to being is a mystery given that neither is physically productive – hence the enigma.

However, the greatest enigma is and will always remain the Solow residual.⁸ Ironically, the neoclassical approach to understanding material processes spawned, in the post-WWII period, the greatest enigma of all times. In short, using an inappropriate accounting framework (Divisia and Tornquist, indexes), roughly half of the observed growth was attributed to capital and labor, leaving the other half as a residual.⁹ Put differently, half of the observed levels of growth was attributed to non-productive, organizational units, and the rest was a mystery. One could argue that this is a second-order enigma, having been born of the first, more basic enigma, namely neoclassical production theory.¹⁰

When growth rates plummeted in the 1970s and 1980s, the standard pat response was that the rate of technological change had, for all intents and purposes, fallen to zero. As little was known of the underlying dynamics and causes of the residual in the post-WWII period, myriad hypotheses were advanced, ranging from the welfare state, to fiscal policy, to import substitution, to the OPEC-induced energy crisis, to unionization, etc.

Unfortunately, all of these were little more than hastily-crafted, often times, ideologically-inspired ex-post rationalizations, with little-to-no basis in science. The proof is that some four decades later, not one of these hypotheses has been confirmed empirically.¹¹ In time however, the profession responded with a veritable flurry of activity aimed at modeling the residual, understanding the productivity slowdown and ultimately affecting the policy debate

⁷ For more on the nature of tools (capital) as seen by engineers, see Beiser (1983) and Alting (1994).

⁸ Interestingly and to a certain extent very telling, economics is the only material science in which roughly half of growth consists of a residual. That is, in all other material sciences, the residual is negligible and often attributed to measurement issues.

⁹ See Denison (1962, 1985) for an early attempt at understanding the growth residual.

¹⁰ This is not particularly surprising as if the base is mis-specified, anything that follows will also be.

¹¹ Interestingly, this did not prevent successive governments from taking action on virtually all policy fronts, with the disappointing results that are there for everyone to see.

(i.e. increasing growth). The result has since become known as New Growth Theory, which we now examine.

3.1 Endogenous or new growth theory

The birth of the residual in the post-WWII period gave rise to yet another series/generation of enigmatic approaches to understanding material processes and growth, also known as New Growth Theory (NGT). Not surprisingly, these approaches were orthogonal to the science of material processes and their growth, owing in large measure to the enigmas referred to in Table 2. In essence, the profession set out to understand the enigma that was the Solow residual with what turned out to be a new generation of enigmas, including notions such as creative destruction, AK models, and institutional economics.¹²

In this section, we choose not to review the many contributions to this literature since Romer's path-breaking work in the 1980s. Rather, our focus will be on its implications and more importantly, on its success or lack thereof of NGT in shedding light on the processes underlying economic growth. With this in mind, we start with its implications. In short, there are three basic implications, namely that in so far as growth is concerned, history matters, institutions matter and geography matters. By the latter, it should be understood that time and place are integral components of technological change, and as such, growth. In this regard, it has much in common with the field of evolutionary economics pioneered by Nelson and Winter (1973). Within this framework, NGT maintains that markets in general underinvest in knowledge (Romer, 1986), that monopolistic competition is more conducive to innovation and that multiple equilibria are not only possible, but likely. In short, it sees innovation as a succession of monopolistically competitive technologies, instigated by existing and new firms (sometimes referred to as quality ladders).

Given the paucity of knowledge about the Solow residual, NGT was a welcomed addition to the literature. After all, it sought to shed light on the greatest enigma of the 20th century, in addition to providing a framework for understanding the process of growth in general. The problems, however, were many. As far as we are concerned, it unwillingly or unknowingly contributed to further enigmatizing the question of economic growth. It did so by increasing the dimensionality of the problem in a number of directions. For example, instead of focusing on the Solow residual which is a material process-based residual, it couched the discussion in the larger question of innovation in general – that is, innovation involving processes, products and institutions. In fact, much of the discussion and examples found in the theoretical and empirical literature are taken from the realm of product innovation, not process innovation. While there is nothing intrinsically wrong with this, it detracts from the question/problem at hand, namely understanding output growth. Put differently, quality ladders add little to our understanding of material process-based growth.

While the original NGT framework defined a whole new world for innovation and technological change, there was no subsequent attempt to narrow the focus to material process innovation.

This has made for a situation in which process and product innovation are used interchangeably, when in actual fact, the latter has little to no bearing on growth (i.e. of the underlying material process). A good example of this is the R&D literature where process and

¹² See Krugman (2013) for an in-depth critique of NGT.

product innovation are lumped into one, overriding variable, namely R&D. Clearly, product innovation cannot and will not increase the growth of output.

4. Literature review: non-steady state models (shocks)

This sub-field of the growth literature is as enigmatic as its steady-state counterparts. In essence, it attempts to identify the factors that contributed to the first (18th century) and second industrial revolutions (late 19th/early 20th century), what most agree were singular occurrences. Unlike the steady-state literature, work in this field is shock specific, with virtually no attempt to provide a general theory of industrial revolutions – that is, a general theory of industrial revolutions.¹³

McCloskey (2004) pointed to what have been two approaches to industrial revolutions (mostly the first), namely material and non-material. The former refers to the various known and documented technological advances that led to first industrial revolution, while the latter refers to the institutions – including culture – that spawned these changes. In this regard, non-material approaches have much in common with NGT where institutions are front and center.

In general, material approaches have focused, for the most part, on the process-based innovations that led to the well-documented increase in output in the early 19th century (Boulton-Watt double-acting steam engine, Paul's power carding and spinning machines, Arkwright's spinning frame). Surprisingly, this literature is decidedly neoclassical in nature, with the various technological innovations being seen as affecting the technology (A) scaler. The underlying mechanics are, for the most part, not specified. As such, subsequent developments such as the development in the 1840s of high-pressure steam engines, and the development in the 1880s of the steam turbine, both of which paved the way for greater machine speeds and productivity, are ignored.

While these models or theories of industrial revolutions are enigmatic with regard to the basic neoclassical production function (i.e. they affect A), they are, in essence, consistent with the underlying principles of the material sciences. This owes in large measure to the emphasis placed on the role of energy in the various aspects / dimensions of first industrial revolution. For example, the Watt atmospheric steam engine (with external condenser) in coal mines, the Boulton-Watt dual-action, reciprocating engine in spinning, carding and weaving material processes. In short, the first industrial revolution witnessed a massive increase in energy use/consumption, resulting in an equally massive increase in wealth. In other words, they are consistent with the laws of physics / mechanics / thermodynamics. What could be regarded as an important advance in the understanding of economic growth was, however, lost in the ensuing analysis of its effect on productivity and output. Specifically, it was seen as increasing both labor and capital productivity, two inert factor inputs. In short, the steam engine was modeled as a scaler affecting, in a one-shot manner, capital and labor productivity.

Dissatisfaction with material approaches to industrial revolutions led, in the 1980s and 1990s, to a new approach, namely non-material where the emphasis was on the institutional and cultural underpinnings of the technological and institutional change that characterized the industrial revolution eras. Drawing largely from institutional economics, it sought to identify the exact set of circumstances or causes. Among the leading non-material approaches is Joel

¹³ A recent exception is Beaudreau (2018) which develops a pull-push theory of industrial revolutions.

Moykr's *Republic of Letters* according to which the enlightenment in England – what he refers to as the Baconian programme – combined with a growing interest in practical knowledge, led to the industrial revolution (Moykr, 2016). A good example of this, he argued, is the Birmingham Lunar Society where men of science rubbed shoulders with entrepreneurs / practical men. Another is Deirdre McCloskey's notion of "Bourgeois Dignity," according to which societal values towards business in general and endeavouring to make a return on one's investment, laid the ground for the industrial revolution (McCloskey, 2010). In both cases, non-economic factors were responsible for the cataclysmic change that was the first industrial revolution.

From a scientific point of view, these approaches only serve to further muddy the waters for the simple reason that they are virtually not testable. In short, the data set is limited to a single observation, thus eliminating any possibility of testing for regularity. Both Moykr and McCloskey are aware of this, and have responded with a barrage of anecdotes filling volumes. For example, McCloskey develops her thesis in a trilogy of works, including *Bourgeois Dignity*, *Bourgeois Values* and *Bourgeois Equity*. The sheer volume, however, does not take away from the fact that her theory is not testable.¹⁴

4.1 Policy implications

As the endogenous growth literature (steady state and episodic shocks) has grown in size and scope, the list of possible causes has exploded, as has the breadth of the enigma. Instead of providing specific answers to specific episodes of growth, it has increased the dimensionality and potentiality of the various causes of growth.

Nowhere is this more apparent than in the policy implications or lack thereof. Take, for example, Moykr's notion of the "Republic of Letters" or McCloskey's notion of "Bourgeois Dignity." The obvious question is what are associated policy implications, if any? The last century has witnessed an unprecedented increase in useful knowledge, yet no industrial revolutions have occurred. The same holds for bourgeois dignity. Presently, the world is spending upwards of \$1.135 trillion per year on research and development, yet growth rates remain low – compared to the post-WWII period.¹⁵

It is our view that this is not surprising in the least bit, in light of the enigmatization described here. In short, policy measures are set against enigmas that are intended to explain enigmas that themselves, had resulted from the original enigmatic representation of material processes. Is it any wonder that the results have been and continue to be less than ideal? One could argue that, despite the efforts of the past forty years, the profession is further today from understanding growth than it ever was, owing to the continued divergence from the physics of material processes, or what we refer to here as enigmatization. While growth is understood to the point of no longer being an issue/question of concern in the other material sciences, it remains more of a mystery in economics than ever.

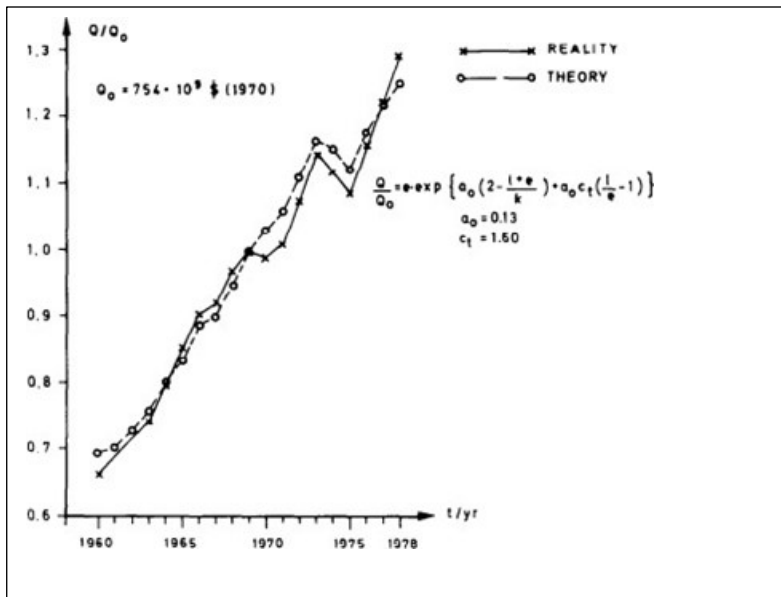
¹⁴ In fact, numerous problems have been noted in the case of both of these theories. Seventeenth and eighteenth century Great Britain was not the first society to witness an explosion of bourgeois values. As for the Republic of Letters, critics point out that similar conditions existed throughout Europe at the time, leaving unanswered the question of why Great Britain?

¹⁵ See Beaudreau and Lightfoot (2015).

5. Consilient approaches

In this section, the discussion will be limited to two approaches, namely LINEX (Kummel 1982, Kummel et al 1998, Lindenberger and Kummel 2002) and Energy-Organization EO (Beaudreau 1998). Other approaches such as the ecological approach and the biophysical approach, while relevant, are not considered for lack of a complete theory of material processes by which it should be understood, an approach that considers the role of all factor inputs (i.e. capital and labor), not just energy.

Figure 1 Actual and predicted growth of U.S. GDP 1960-1978



Source: Kummel (1982)

Let us begin with the question of post-WWII growth. A consilient approach would attribute the high rate of growth to a high rate of growth of energy use / consumption. As it turns out, the LINEX and EO approaches corroborate this result. Referring to Figure 1, we see that manufacturing output in the U.S. tracks almost perfectly energy use/consumption, with a dip in the 1970s. According to Kummel (1982), this corresponds to the productivity slowdown, where energy use decreased. The EO approach also attributes post-WWII economic growth to energy use/consumption. Table 3 shows how growth in manufacturing output in the U.S., Germany and Japan (USVA, GERVA, and JAPVA, respectively) tracks energy use/consumption (USEP, GEREP, and JAPEP, respectively) – specifically how output and energy growth both fell precipitously from 1973 onwards. Both approaches maintain that the record growth in labor and multifactor productivity owed to an increase in energy-use intensity – that is, the increase in energy use/consumption per unit of labor/capital. Implicitly, the enigma that is the Solow residual is resolved, with productivity growth being attributed to greater energy use per unit of labor/capital.

This brings us to the question of the productivity slowdown. In keeping with the laws of classical mechanics, both attribute it to the fall in the rate of growth of energy use/consumption, itself the result of the OPEC-induced price increases. In other words, higher energy prices and the specter of even higher future prices, reduced the rate of growth of

energy use/consumption. Once again, the enigma of the productivity slowdown is resolved, being attributed to the decrease in the rate of growth of energy use/consumption.

Table 3 Output and input growth rates: U.S., German and Japanese manufacturing

U.S.			
	1950–1984	1950–1973	1974–1984
<i>USV A</i>	2.684	3.469	0.121
<i>USAI*</i>	2.674	3.472	0.310
<i>USEP</i>	4.052	5.371	0.246
<i>USN</i>	0.662	0.900	-0.091
<i>USK</i>	3.694	3.614	3.4008
Germany			
	1963–1988	1962–1973	1974–1988
<i>GERV A</i>	2.462	6.522	1.486
<i>GERAI*</i>	2.433	5.190	1.080
<i>GEREP</i>	2.894	5.883	1.366
<i>GERN</i>	-0.785	0.592	-0.938
<i>GERK</i>	2.945	5.620	1.406
Japan			
	1965–1988	1965–1973	1974–1988
<i>JAPV A</i>	3.826	8.844	3.099
<i>JAPAI*</i>	3.566	9.856	1.538
<i>JAPEP</i>	3.559	11.320	0.965
<i>JAPN</i>	-0.082	2.297	-0.367
<i>JAPK</i>	7.520	13.536	5.182

* $\hat{\beta}_1 \frac{ep(t)}{ep(t)} + \hat{\beta}_2 \frac{l(t)}{l(t)} + \hat{\beta}_3 \frac{k(t)}{k(t)}$, where $\hat{\beta}$ the estimated output elasticities, are taken from Beaudreau (1995)

In more recent work, Beaudreau (2017) re-examined the underlying hypothesis, namely higher energy prices leading to a lower rate of growth of energy use/consumption. Specifically, he showed that while fossil-fuel prices increased in the mid-1970s, the price of electricity (primary source of energy in manufacturing) remained relatively constant and moreover, the real price of energy (and electricity) had, by the 1980s, returned to its pre-OPEC crisis level, yet the rate of energy use/consumption did not rebound. Drawing from his work on the economies of speed, he invoked the laws of kinetics to attribute the decrease in energy use/consumption to the problems inherent in speeding up material processes.¹⁶ More to the point, he argued that maximum machine speed had, by the late 1960s/early 1970s, been reached in most industries, making for a slowdown in the rate of increase of machine speeds and consequently in productivity.¹⁷

To recapitulate, over two centuries ago, political economists approached the question of understanding the steam-engine powered industrial revolution, by enigmatizing the process for the first time, attributing physical productivity properties to capital and labor, two organizational, non-energy-based factor inputs. This then resulted in a second round of

¹⁶ In essence, he argued that increased energy intensity manifested and manifests itself in greater machine speed (Beaudreau, 2017). LINEX and EO leave unspecified the mechanics by which increased energy intensity increases output.

¹⁷ In essence, he argued that the productivity slowdown was a manifestation of a larger phenomenon, namely the end of the “Age of Speed.” In other words, machine speeds, like all other speeds, had reached their upper limits.

enigmas in the form of the Solow residual, where the brunt of post-WWII growth was attributed to what Moses Abramovitz referred to as our “our measure of ignorance.” By then, waist deep in enigmas, the profession set out to understand the enigma caused by enigmas with yet another round of enigmas that included Romer’s AK model, Schumpeterian quality ladders, etc. – in short, New Growth Theory. This has made for the current situation where the profession now finds itself inundated with enigmas when the answer, according to material scientists, is as simple as the basic principles of mechanics and thermodynamics. This has resulted in a situation in which the study of material processes in economics is a virtual island onto itself, with enigmatic notions and concepts, and with two centuries of growth still to be explained.

Table 4 Incursions into the material sciences: missed opportunities

Adam Smith (1776)	Fire Power
Robert Owen (1820)	Scientific Power
Karl Marx (1867)	Classical Mechanics
William Stanley Jevons (1865)	Coal is the mainspring of modern material civilization
Alfred Marshall (1890)	Labor “as Machine Operatives”
Thorstein Veblen (1921)	Power resources
Frederick Soddy (1922)	Cartesian Economics

6. The exceptions: mainstream incursions into the material sciences

In this paper, we have argued that the many formalizations of material processes and their growth throughout the 19th and 20th centuries have led to a series of enigmas, the sum total of which has left the profession with an understanding of material processes that is orthogonal to the laws and principles that govern all other material sciences. We would, however, be remiss to maintain that there were no exceptions. After all, the 19th century witnessed important developments in the science behind the steam engine, namely thermodynamics. As it turns out, a number of ranking political economists did make incursions into the material sciences.¹⁸ However, most of these were either (i) in direct contradiction with their more fundamental contributions, or (ii) of secondary interest or concern.

Table 5 provides a non-exhaustive list of these references to elements of material sciences, mostly regarding the role of energy in production. Take, for example, Adam Smith whose magnum opus, the *Wealth of Nations*, was inspired by Matthew Boulton’s experience with steam power at his Hockley Brook factory. In 1776, the science of steam or fire was inexistent, prompting him to refer to it in primitive terms, namely as fire power. Why he chose to see it as increasing labor productivity is a question open for debate. Was it to assuage/reassure labor, or was it a vestige of a bygone era when labor was not only the source of energy/power (i.e. brawn). Perhaps the most perspicacious of these writers in so far as references to the material sciences is concerned was German economist Karl Marx, whose 1867 *Das Kapital* contains a surprising account of the basic elements of process engineering, complete with references to the role of power and force as the ultimate drivers of

¹⁸ One could argue that 19th century political economists were more attuned to these developments given a common/similar focus, namely understanding the steam engine. Physicists strove to understand the laws governing heat, while political economists strove to understand the laws governing production with machinery.

material processes (Chapter 15 entitled On Machines and Machinery). What is astounding is its orthogonality to Chapters 1-7 where he develops the labor theory of value (surplus value) based in large measure on classical production theory.

Another surprise is neoclassical pioneer William Stanley Jevons who in *The Coal Question*, published in 1865, trumpeted the essential role of coal in material civilization, going as far as arguing that it constituted the “mainspring”. Contrast this with what would become the neoclassical theory found in his 1874 classic *The Theory of Political Economy* where coal/energy is entirely absent (Jevons, 1874). What is also surprising is the fact that by then, the laws of thermodynamics were well established.

7. Summary and conclusions

One could argue that the history of economics or the science of wealth is the story of a profession which in spite of itself, has attempted to understand material processes in what is was and an intellectual vacuum, choosing to ignore developments in related material sciences – and in science in general. The result has been a series of enigmas which as we have shown have engendered subsequent rounds of enigmas, with the result that today, the question of growth is more misunderstood than ever. Over the course of its history, notions of capital and labor (physical) productivity were advanced, while the energy input, the cornerstone of the science of material processes, was ignored completely. Instead, enigmatic, oftentimes orthogonal rationalizations were advanced, resulting in even more enigmas that not surprisingly engendered a whole new generation of enigmas to explain them.

In this paper, a roadmap to the enigmatization of economic growth was provided, one that goes a long way explaining why, as Paul Krugman remarked in a 2013 *New York Times* editorial, the promise of New Growth Theory has fizzled out. Our starting point was that material processes are well understood outside of economics, where there has been and continues to be no need for arcane notions like the Solow residual, or other “measures of our ignorance.” In keeping with basic mechanics, all work is ultimately the result of the use of force/energy. More importantly, there can be no exceptions, nor violations to the laws of physics. The notion that generic technological change can miraculously increase output is an affront to basic scientific knowledge, one that borders on the sublime.

It is our view that economics in general and growth theory in particular have suffered as a result. For one, economics is the only material process-based discipline where growth is largely not understood, and what is assumed to be understood (i.e. the role of labor and capital) is, in reality, an illusion, an enigma. Second, despite four decades of what was a concerted attempt to understand growth, the verdict is one of complete and utter failure – or what Krugman refers to as “fizzle”.

Lastly, it is our view that the blame for what we refer to as the enigmatization of economic growth lies squarely on the shoulders of the profession. While the problem of growth in the other material process sciences has been resolved, it remains very much an open issue in economics. And the reason is clear, namely the concatenation and multiplication of enigmas. When one tells a lie, one is often times forced to tell another or others to cover it up. The enigmatization of basic material processes in the 19th century led to more enigmas and even more to attempt to understand them.

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SUGGESTED CITATION:

Bernard C. Beaudreau, "The enigmatization of economic growth", *real-world economics review*, issue no. 86, 10 December 2018, pp. 92-105, <http://www.paecon.net/PAEReview/issue86/Beaudreau86.pdf>

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Lest they be forgotten: inequality in non-capitalist economies during the 20th century¹

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Abstract

Capitalism generates major inequalities which have important economic, social and political consequences. The transition to capitalism in the former USSR and Eastern Europe led to widespread impoverishment and an increase in inequality. The transition to capitalism in China and Vietnam also increased inequality. These facts have created the widespread impression that the state socialist system was more equal than capitalism. This paper examines whether this is really true. It draws attention to extreme forms of inequality in the Stalinist and Maoist periods. It also draws attention to important *intrasystem* differences in inequality, and important changes over time. It also points out that the data used in the existing academic literature is frequently incomplete (excluding part of the population, part of money incomes, non-monetary incomes, and does not take account of the impact of shortages). It also draws attention to the inequality created by position in the political hierarchy, and the caste-like system created in Maoist China. It concludes that revolutionary social change aiming to eliminate the role of money and the market economy may well fail to eliminate inequality but simply change its causes from ownership of wealth to position in the political and bureaucratic hierarchies and/or the need to manage complex economic systems effectively.

Keywords Inequality, socialism, USSR, income distribution

Introduction

“it is worth stressing that... measures of monetary inequality... obviously neglect non-monetary dimensions of inequality, which may bias comparisons of inequality over time and across societies... Summarizing such inequalities with a single monetary indicator is clearly an over-simplification of a complex set of power relations and social domination, and [this] should be kept in mind when making historical and international comparisons” Novokmet, Piketty & Zucman (2018: 31-32).

Piketty’s *Capital in the Twenty-First Century* and the work of Gabriel Zucman in conjunction with the many researchers for the World Inequality Database has done a great deal to draw attention to the problem of wealth and income inequality. Much of this has focussed on the track record of capitalism and what capitalist states might do (individually and collectively) to

¹ This paper results from a conference in Berlin in October 2017 organised by the Research Institute of the Dialogue of Civilizations institute (DOC-RI), on the theme “Inequality, Economic Models, and Russian October 1917 Revolution in Historical Perspective”, where a first draft was presented. I am grateful to the DOC-RI for agreement to its publication. I am also grateful to P. Ellman, G. Khanin, V. Kontorovich, D. Lane, J. Morgan, and B. Milanovic for helpful comments on the draft. The author alone is responsible for any errors of fact, and for the argument. This paper only considers the countries that described themselves as socialist and were referred to in the West as Communist and does not consider other types of non-capitalist economies. A small part of the material in this paper is taken from Ellman (2014).

² Author of *Socialist Planning* 3rd ed and co-editor, with Vladimir Kontorovich, of *The destruction of the Soviet economic system*

address inequality. (There has been some attention to the USSR but it has paid too little attention to the system-specific aspects of inequality in the USSR.) Furthermore, it is well known that the initial results of the collapse of state socialism and the transition to capitalism in the former USSR and Eastern Europe were widespread impoverishment and an increase in inequality (Milanovic, 1998; Ellman, 2000). However, in making inter-system comparisons it is important to keep the *full* historical experience of Soviet-type socialist states in the 20th century in mind (states typically referred to in the West as Communist). Inequality and its adverse consequences come in many forms. Though it is well known that reduction of the role of the market and increase of that of the state (e.g. in labour relations, medical care, education, housing, transfer payments) can reduce inequality in capitalist countries, it does not follow that revolutionary change aiming to eliminate capitalism will eliminate inequality.

Many people were surprised and disillusioned by the existence and importance of inequality under 20th century state socialism. However, 17 years before the USSR was established, the fact that inequality would persist under socialism was foreseen by the Polish revolutionary Machajski (1905). He argued that socialism would not bring equality and the rule of the workers, but would establish the rule of a group of socialist intellectuals, and that inequality and a ruling class would persist under socialism. This echoed some of the arguments of Bakunin and his critique of Marx. Lenin was aware of Machajski's work and was naturally hostile to it. In 1902-3, in an overview of the political-ideological situation in Russia, he included Machajski's followers as one of the 'non- Social-Democratic revolutionary and opposition trends'. In 1921 he criticised the Workers' Opposition (an opposition group within the Communist Party) for being a Makhaevist deviation from the Party line.³ The experience of the twentieth century showed that some of Lenin's goals were utopian and some of Machajski's criticisms of socialism were accurate (consider also the well-known books of Orwell, 1946 and Djilas, 1957).

With the above in mind, it seems worth considering some important examples of *non-market* inequalities and adverse outcomes resulting from socialist experiments in the 20th century (even though some forms of inequality narrowed). The range is extensive: famine, political disenfranchisement, caste-like inequalities, and the role of non-market incomes and opportunities (e.g. privileged access to goods and services) and of non-state sources of income.

Famine resulting from political prioritisation

A striking and not much known example of inequality in a non-capitalist economy is the famine in Kazakhstan in 1931-34.⁴ It seems that it caused about 1.4 million deaths (Davies & Wheatcroft 2004: 415). This was about 36% of the Kazakh people, a much higher proportion of the population than that in the much-publicised Ukrainian famine of 1932-33. This disaster was *not* the result of a deliberate intention to kill a large part of the Kazakh population. It was a by-product of the political system. The leadership in Moscow launched a plan "to liquidate the kulaks as a class", and to collectivise agriculture, which was aimed at the grain-growing regions that produced the main wage good in the USSR (bread) and the main export item

³ See Lenin (1959, 1963). Makhaev was the Russian version of Machajski.

⁴ Overviews of this famine can be found in Pianciola (2004) and Pianciola (2016). For a useful brief collection of documents about it, see Aldazhumanov et al. (1998). For the first two volumes of a more detailed document collection, see *Tragediya* (2013, 2018).

(grain). A large and continuous supply of grain to the towns and the army was essential for the implementation of the industrial and military plans of the leaders and to pay for the import of technology. The centre urged the local leaders all over the country to implement collectivisation quickly and meet the state's grain delivery targets. In Kazakhstan grain-growing was largely confined to Russian settlers. The indigenous Kazakhs (who comprised most of the population) were a pastoral people who predominantly practised transhumant – nomadic animal herding.

The leadership in Kazakhstan, eager to show their loyalty to Moscow, requisitioned animals from the Kazakhs (this was the local version of dekulakisation). This reduced the herders' means of subsistence. The local leadership also tried to organise large collective livestock farms, but, without fodder, water for the animals, and adequate veterinary services, and with inadequate food for the new collective farmers, this was a failure. In addition, the local leadership insisted on procuring grain from the Kazakhs, which forced herders to sell animals to buy the grain demanded. The requisitioning of animals from the herders was intensified by a Politburo decision of 15 July 1930 to respond to the meat shortages in Moscow and other cities (largely caused by the national decline in livestock numbers resulting from collectivisation and the peasant reaction to it) by stepping up livestock requisitioning in Kazakhstan (and some other rural areas). The purpose was to supply livestock products to the politically and economically crucial cities of Moscow and Leningrad, regardless of the consequences for the herders whose animals were requisitioned.⁵

The result of implementing these central policies of grain and livestock requisitioning was widespread extreme shortages of food for the herders. Food shortages led to mass flight from Kazakhstan to Siberia, European Russia, other Soviet republics such as Kyrgyzstan, and also across the border into China. The migrants were generally unwelcome and suffered from disease, unemployment, and starvation. Those who remained also suffered from disease, loss of income, and starvation.

This chain of events was a catastrophe for the affected population but did have an advantage for the state. Whereas previously the herders had consumed part of the grain produced in Kazakhstan (mostly by Russian peasants from whom the herders had obtained it by purchase or barter of animal products), after the famine that part of the grain harvest previously consumed by the now dead herders could be delivered to the state. The inequality resulting from the famine – between the living and the dead – was an extreme example of inequality. However, it did not result from a difference in money incomes, which were irrelevant, but from a difference in position within the political hierarchy.

The Kazakh famine was just part of the demographic disaster which resulted from the collectivisation of agriculture. It has been estimated (Nefedov 2017: 351) that the population of the USSR at the beginning of 1935 was 18 million less than it would have been had the

⁵ For a telegram of 22 July 1930 from a national leader (Central Committee Secretary Postyshev) to the regions (including Kazakhstan) which refers to this decision and instructs the localities to speed up their deliveries, see *Golod* (2011): 258. The same volume also includes, on pages 620-621, a telegram of 28 September 1931 co-signed by the head of the Soviet government (Molotov) containing monthly plans for the delivery of meat to Moscow and Leningrad by various regions, with the plans for deliveries by Kazakhstan being the largest. In the months preceding the 15 July 1930 decision, the leadership received numerous reports from the OGPU (the state security service) about dissatisfaction and unrest among industrial workers all over the country as a result of the poor state of food supplies (*Sovershenno* 2008: 110-386). For the leadership, minimising dissatisfaction among workers in the two main cities was much more important than saving the lives of "backward" herders.

New Economic Policy of the 1920s been continued (about two-thirds of this demographic loss resulted from the decline in the birth rate.) The disaster of 1930-34 was not the only example of a famine in a non-capitalist economy. The USSR itself experienced another (much smaller) famine in 1947. However, the largest famine (by number of victims) in the world in the 20th century was that in China in 1958-62 (with a peak in 1960). Its ultimate cause was the extreme inequality which resulted from the rule of the Communist party and collectivisation of agriculture. One man at the head of the ruling party was able to enforce policies which damaged agriculture and the welfare of the rural population and reject sensible criticism. The inequality between the living and the dead was not caused by differences in money income but was due to the victims and survivors occupying different roles in the politically-determined national hierarchy.

Position in the political system

A similar, but less extreme, case of inequality resulting from the political system is that of the *lishentsy* (a Russian word which describes people who are deprived of something – in this case of the right to vote). This was a group of several million people who from the 1920s down to 1936 were excluded from the Soviet political community (symbolised by their not having the right to vote and thus the possibility of demonstrating their loyalty to Soviet power – Soviet elections were not about deciding who was going to rule, but about demonstrating political loyalty). This could have serious repercussions, such as the loss of housing or of a job, and being excluded from the rationing system when food was rationed.⁶ The difference between the *lishentsy* and the rest of the population was not caused by differences in money incomes (although job losses may have led to them), but was the result of a difference in position in the political hierarchy which had many of the consequences that in a capitalist economy would be caused by differences in money income.

If one looks at the situation in the USSR under late Stalinism, there was great inequality between different layers of the population, but the inequality was not primarily a matter of money incomes but of position in the political system. At the bottom were the Gulag prisoners (about 2.5 million at the time of Stalin's death), followed by the "special settlers" (almost 3 million), whose situation, while not good, was better than that of the Gulag inmates, since they could live in family groups and could often determine their own work, but who were confined to rather inhospitable areas and supervised by state security officials. Then followed the collective farmers, who comprised a large but declining proportion of the total population. In 1940 collective farmers comprised 44% of the working population and in 1960 they still comprised 30% (*Narkhoz* 1987:411⁷). Collective farmers were, in principle, tied to their native villages (they did not have internal passports and required permission to move away) and had low living standards. The inequality between them and the better-off groups in society was partly monetary (they had very low money incomes) but mainly socio-political (their inherited status, the restrictions on their mobility, the poor amenities of their villages, their low consumption levels, the taxes they had to pay, and the work they were compelled to do for

⁶ For a survey of the situation of the *lishentsy* in one province, see Belyakov (2017): 192-201. For a monograph about the situation in the whole country, see Alexopoulos (2003).

⁷ This source gives two somewhat different figures (one explicit and one implicit) for both years. This seems to result from definitional differences (e.g. collective farmers by birth and place of permanent residence who did some work for their collective farm but actually mainly worked for state forestry, mining or manufacturing enterprises could be counted either as collective farmers or as workers). The figures in the text are the explicit figures from the table at the top of page 411.

the collective farms for little reward, were all a result of the political system).⁸ The next layer was the mass of the urban population. This was divided by location.

There was a hierarchy of supply and amenities, with Moscow at the top, followed by Leningrad and the capital cities of the Union republics, with peripheral cities, small towns and rural areas lagging behind. A dramatic example of the importance of this hierarchy of supply was the Kazakh famine mentioned in the previous section, in which the lives of Kazakhs were sacrificed to facilitate the meat consumption needs of Moscow and Leningrad. The urban population was also divided by housing (much of the urban population lived in communal apartments, but some in worse conditions and some in better). Other divisions concerned access to the distribution of goods at the place of work and money income. Despite these significant inequalities, the inequality of the urban population was not large by the standards of capitalist countries at the stage of early industrialisation. At the top of the hierarchy were the elite, i.e. the senior figures in the Party, state security, the military, industrial management, and intellectual institutions such as the Academy of Sciences and Union of Writers. They often enjoyed state-provided dachas, domestic servants, and access to better quality food and other consumer goods than most urban inhabitants, and both higher salaries and, in some cases, bonuses (known in the USSR as 'packets' since they were paid in cash in packets filled with notes). Their higher real incomes were partly monetary and partly non-monetary. However, their living standards were modest compared with those of millionaires in capitalist countries.

However, in the post-Stalin period there was a sharp decline in inequality in the USSR. The Gulag was closed down (although imprisonment for criminals and some political dissenters naturally remained), and the system of 'special settlements' was ended. The position of the collective farmers was greatly improved by: the abolition of taxes on the output of their household plots; the issue of passports to them; improved facilities in rural areas; higher incomes; and eligibility for state old age pensions. Nevertheless, the differentiation of the mass of the urban population (by location, housing, access to closed distribution⁹, and income) remained. However, it was reduced by the (re)introduction of a minimum wage, and increases to it. Another equalising factor was the development of a pension system. Another was the reduction in piecework. Yet another was the growth in food subsidies (to the extent that food was actually available at the subsidised prices.) The elite (senior Party officials, senior military and state security officers, large-enterprise managers, and senior intellectuals)¹⁰ enjoyed state-provided dachas, relatively good housing, better consumer goods than those available to the rest of the urban population (provided at place of work or in special shops or parts thereof), and access to better quality clinics, hospitals, and holiday resorts. They also had privileged access to the best schools and higher education institutions. Although much better-off than the mass of the population, they were not well-off compared with Western millionaires of that period. As Wiles (1974: 25) long ago pointed out: "the statistical record since Stalin is a very good one indeed. I doubt if any other country can show

⁸ For a description of the position of the collective farmers in the late Stalin period, see Popov (2002) chapters 3 & 4. Curiously, although Novokmet, Piketty & Zucman (2018: 31-32, 36) are aware of the importance of the limited rights of the rural poor in increasing inequality in Tsarist Russia, they ignore the same phenomenon in the Soviet period. For some critical comments on the 2017 version of the analysis of Soviet income distribution in Novokmet, Piketty & Zucman (2018), see Harrison (2017).

⁹ By "closed distribution" is meant distribution to restricted categories of the population. Examples are the sale of goods at the place of work, or sales in special shops or parts thereof only accessible to members of the elite.

¹⁰ This group was estimated at about 250,000 by Matthews (1975: 13). That was about 0.2% of the working population.

a more rapid and sweeping progress towards equality.” Later data showed that this reduction in inequality did not persist indefinitely. Atkinson & Micklewright (1992: 88 & 132-33) estimated that Soviet earnings inequality increased in 1968-76 and in the 1980s, and that income inequality increased in the 1980s. It should be noted that the growth of the informal sector during the 1970s and 1980s probably also had the effect of increasing income inequality.

“Castes” and the social hierarchy

While the USSR in the 1950s, 1960s and 1970s gradually expanded access to consumer goods (one-family apartments, refrigerators, televisions) and increased welfare provision (minimum wages and old age pensions), China moved in a different direction. Maoist China developed what was essentially a caste system. There were five red castes and eight black castes. The five red castes were: workers; poor and middle peasants; soldiers; cadres (i.e. officials); and relatives of revolutionary martyrs. The eight black castes were landlords; rich peasants; counter-revolutionaries; bad elements; Rightists; renegades; enemy agents; and capitalist roaders. In 1966-76 there was an additional black caste, the “stinking ninth” (i.e. intellectuals). Those born into a black category were discriminated against from birth, and the person’s spouse, family and children were similarly affected. An example of what this meant has been given by Lee (1978: 39).

“A friend of ours was staying at a farm in northern Guangdong for six years. He met a man by the name of Chan there. This young man was by nature taciturn and clumsy, and smiles and talks little. He was conveniently classified as ‘backward’ for his father was a schoolteacher, an intellectual. His parents were struggled against and denounced in the Cultural Revolution. But he remained quiet, kind, solitary and ‘backward’. And he developed secret sentiments towards a girl in the herding brigade. When he could contain himself no longer, he wrote a fiery letter of love to this girl. The girl was a ‘poor peasant’ and therefore of impeccable family history. She was startled and scared and immediately showed the letter to her brigade (all girls). Their leader arranged for her to shame Chan in public, and the incident spread. All the farm marvelled at his recklessness. A man in his position daring to touch the daughter of a poor peasant family! The local party branch secretary saw fit to warn him in person, this was a grave violation indeed.”

The idea that an intellectual (i.e. the son of a school teacher) could marry a poor peasant (i.e. the daughter of a poor peasant) was an unacceptable breach of the socialist caste system. The differences in social position that determined possible choice of marriage partners was not one of money income but of position in the politically-determined social hierarchy.

Differences in non-monetary income

It can be seen from the above that money income, although important, was less important in determining inequality in state socialist economies (especially in the Stalinist and Maoist

periods) than in capitalist economies.¹¹ That is entirely understandable, since one of the goals of the socialist movement was precisely to reduce the role of money and increase that of non-monetary social provision. In a society in which housing, education, medical care and much public transport are provided free or at heavily subsidised prices, money plays a lesser role than in one in which the costs (in full or in part) of housing, education, medical care, and public transport have to be paid for out of personal incomes. In such a society money income is only a part of total income which also includes social income such as the goods and services provided free or at heavily subsidised prices. Hence the data for average incomes published in some issues of the Soviet annual statistical handbook included social income.

Furthermore, the role of money was also reduced by the importance of shortages. Even for people with money, goods were often unobtainable in ordinary state retail trade. Hence, access to place of work distribution, or special shops or parts thereof, theft from state enterprises, and personal contacts, were often more important than money income. Therefore, trying to compare the distribution of welfare in capitalist and state socialist economies using just data on the distribution of official money income, as is sometimes done, raises serious problems because of the importance both of unofficial incomes and of non-monetary factors in determining inequality in the latter. As a result, calculations based only on figures for the distribution of official money incomes are likely to give a misleading impression if used for inter-system comparisons.¹²

Despite these complications, a number of economists have attempted to incorporate estimates of non-monetary income into total income and to compare total income between capitalist and state socialist economies. This was long ago done for the 1970s by Morrison (1984). His calculations showed a mixed picture. Just taking Gini coefficients, Czechoslovakia – a state socialist country – appeared to be the most equal of the countries considered, and the USA – a capitalist country – was the most unequal. However, both the USSR and Poland had higher Gini coefficients than the UK or Sweden. The USSR and Poland also had a higher share of income going to the top decile than all the capitalist countries considered (which included the USA). On the other hand, the relative position of the lowest four deciles was relatively favourable in the state socialist economies. Morrison's paper is interesting, but it was just an initial study of a complex issue. Nevertheless, one important issue to which it drew attention was the difference in inequality *between* state socialist countries. This complicates the comparison of inequality between state socialism and capitalism. Bergson (1984) drew attention to the fluctuations in Soviet inequality over time, so that the outcome of comparisons of inequality between the USSR and capitalist countries depends very much on which periods are chosen for comparison.

A later comparison of inequality under state socialism and capitalism is Redor (1992). He compared the distribution of earnings (for full-time employees paid the full rate, i.e. excluding apprentices) and that of disposable income, in 1980, in Belgium, Denmark, the United States, France, West Germany, and the UK, on the one hand, and Hungary, Poland, East Germany, Czechoslovakia and the USSR, on the other. As far as official earnings are concerned, he found large *intrasystem* differences in the dispersion of earnings but no clear *intersystem* difference. He did, however, find that workers in the mining and steel industries were relatively well paid in the state socialist countries. He also found that the differential between manual workers and non-manual workers was lower in the state socialist countries than in the

¹¹ This was less the case in East European countries such as Yugoslavia, Hungary and Poland in the 1970s and 1980s.

¹² For an example of this, see Ellman (2014: 274).

capitalist ones. Earnings in some service sectors (such as education and health) were also relatively low in the state socialist countries. He ascribed the similarity between the wage differentials in the two systems to the analogous processes (efficiency wages, internal labour markets) for managing the labour force in the two systems. He also considered the effect of including income from secondary activities and benefits in kind, and concluded that, while these increased inequality, the increase was quite small. However, it did change the relative position of some occupational groups, such as employees in trade (who were able to sell goods at market prices which they had bought at the lower state prices or simply stolen) and doctors (who in some countries benefitted from substantial “gifts”).

A classic comparison of income inequality under state socialism and capitalism is that of Atkinson & Micklewright (1992). This is marked by detailed attention to the sources. For example, it suggests (p.125) that Morrison’s data for the UK were misleading, and that actually inequality there was greater than Morrison had estimated. It also recognises the importance of subsidies, transfers, elite benefits, and shortages. However, its earnings estimates exclude collective farmers¹³ so that a significant part of the population, with low money incomes, is not taken into account and nor are Collier’s (1985; 1986) estimates of the cost of shortages. Collier came to the conclusion that in 1977 shortages reduced the real income of East German families by 13%. This is a striking result when one bears in mind that the extent of shortages in East Germany in 1977 was considerably less than in the USSR in the 1970s and 1980s, or in Poland in the 1980s. It gives an indication of the kind of adjustment to the incomes of different layers of the population, according to the extent to which they were subject to shortages, that would be necessary to take full account of shortages. In addition to the differences in shortages between members of the *nomenklatura*¹⁴ and ordinary citizens, and between the inhabitants of Moscow and provincial cities and small towns, there were also differences between those who owned hard currencies and those who did not. (In the USSR in 1931-36 there were special shops where consumer goods such as bread were readily available to those with gold or foreign currency. Such shops were reintroduced – with a wider range of goods — for those with foreign currency in the USSR and Eastern Europe in the post-Stalin period.) Atkinson & Micklewright (1992) do draw attention to the diversity between countries, the high level of equality in Czechoslovakia, the big differences between the Soviet republics, and the importance of changes over time (such as the reduction in inequality in the USSR in the post-Stalin period). They note (p.104) that, because of the diversity between countries and over time, it is ‘not easy to draw clear-cut conclusions about the comparison of earnings inequality under capitalism and Communism’. As for the *meaning* of the data on the distribution of incomes, they end their analysis of this (p.177) with the traditional academic conclusion that more research is required to reach a satisfactory result.

That conclusion is confirmed by the fact that even the adjustments to the published official data made by Redor and Atkinson & Micklewright fail to capture important inequalities in state socialist economies that do not exist in market economies. For example, in the USSR, travel to capitalist countries was restricted to people whom the authorities regarded as

¹³ Atkinson & Micklewright: 264. As noted on the same page: “Those employed by ‘social organisations’, usually taken to mean the Communist Party and its close affiliates, were also excluded.” Atkinson & Micklewright: 266-268 also point out that their data on incomes mainly comes from a source (the family budget survey) which was unrepresentative of the Soviet population. In addition (ibid, pp. 268-269), there are problems with its income concept, which includes the value of benefits in kind from employers, such as meals and transport, and values agricultural production for self-consumption at state prices rather than collective-farm or market prices.

¹⁴ For a pre-perestroika discussion of the role of the *nomenklatura* in the USSR, see Voslensky (1984).

reliable. People regarded as actually or potentially unreliable were unable to travel to capitalist countries. This contrasts with the situation in capitalist economies where international travel is normally available to anyone with the money to pay for it. This kind of inequality (between those permitted, and those not permitted, to travel abroad) is an important inter-system institutional difference in welfare between groups but one which is not captured by income distribution statistics.

Differences in non-state money income

Besides non-monetary income, there was also money income earned from non-state sources. Recently, the Central Bank of Russia has published archival estimates for this income (derived from the records of Gosbank, the former state bank of the USSR) for the whole Soviet period (*Denezhnoe* 2010:19-83). These estimates show that this non-state income (which was not taken account of in most Western analyses of Soviet income distribution since they lacked data for it) existed throughout this period but that its relative importance fluctuated sharply. Some data from this source is set out in Table 1.

Table 1 Non-state income of the Soviet population as a percentage of income from state sources, according to Gosbank

Year	Income ^a from state sources ^b	Income ^a from non-state sources ^c	Income from non-state sources as a percentage of income from state sources
1929	18.9	5.2.	27.5
1930	23.9	6.1	25.5
1931	36.0	9.9	27.5
1932	51.9	15.4	29.7
1933	58.2	13.2	22.7
1934	71.1	11.4	16.0
1941	198.2	19.0	9.6
1942	153.9	86.2	56.0
1943	184.7	238.8	129.3
1944	236.3	303.2	128.3
1945	271.9	212.2	78.0
1946	315.6	187.5	59.4
1947	393.2	175.6	44.7
1952	521.6	45.0	8.6
1960-64			<3.0 p.a.
1965-89			<2.0 p.a.

Source: *Denezhnoe* (2010):19-20.

Notes:

- The income figures for 1929 to 1947 are in billions of 1924 roubles, and for 1952 in billions of 1947 roubles.
- This consists mainly of wages, but also of payments to collective farmers, payments for the sale of food to state agencies, pensions and other transfer payments, and prizes from, and repayments of, state loans.
- This mainly consists of market sales of food products by the rural population.

Table 1 shows that income from non-state sources was particularly important before agriculture was fully collectivised (1929-33) and in World War II and immediately after it (this resulted from the extreme food shortages then and the resulting very high market prices of food). In 1943 and 1944 income from non-state sources even exceeded income provided by the state. Two years after the war, in 1947, it still amounted, according to these Central Bank estimates, to 45% of income from the state. However, from 1960 onwards, according to these estimates, it was not very significant, being less than 3% of annual income from the state for the rest of the Soviet period, and less than 2% from 1965. By far the largest item in these estimates of non-state income is income earned by the rural population by sales of food products at the legal urban markets.

For the last decades of Soviet power, the Gosbank estimates are not the only estimates of non-state incomes. For total non-state incomes in the last decades of Soviet power, there are a variety of unofficial estimates (Grossman 1987; Ofer & Vinokur 1992; Kim 2003). Kim, using data from official but unpublished family budget surveys, estimated average non-state income as a percentage of total household income in the years 1969 to 1990 at 16.3% (based on income data) or 22.9% (based on expenditure data). The majority of the non-state incomes estimated by Kim consisted of the value of own-consumption of self-produced food products (this seems to be excluded from the Gosbank estimates) plus the income from market sales of food products. However, the share of “other” (i.e. non-agricultural) income showed a steady increase from 3.2% to 4.9% of total incomes on the income measure and from 8.2% to 9.6% on the expenditure measure.

Since the data in the family budget surveys were derived from information provided by (an unrepresentative sample of) households to official bodies, they are unlikely to have included income from the wide range of non-state activities that in the USSR were regarded as illegal, and which are often referred to by Western economists as “informal sector” earnings. However, estimates for these incomes were published by Goskomstat (the official statistical body) for 1989 and 1990.

Table 2 Informal income^a in relation to legal labour income^b

	1989	1990
Total legal labour income	406.8	464.3
Estimated informal income	59.0	99.8
...of which from production and sale of samogon ^c	23.0	35.0
Informal income as percentage of legal incomes	14.5%	21.5%
...of which from production and sale of samogon	5.7%	7.5%

Source: *Narodnoe khozyaistvo SSSR v 1990g* (Moscow: Finansy i Statistika, 1991): 36 & 50.

Notes:

a) Referred to in the source as “shadow economy income” (*dokhody tenevoi ekonomiki*).

b) All income figures are in billions of roubles. By “legal labour income” is meant wages and salaries paid by state institutions, the incomes paid by cooperatives and the income received by collective farmers from their collective farm.

c) Samogon is illegally distilled vodka. It is the largest single item in the estimate of informal incomes.

The Gosbank, Kim, and Goskomstat estimates measure different things (income from the sale of food products at the legal urban markets, the value of own-consumption of self-produced food products, income from informal activities), and hence their quantitative differences are understandable, but taken together they make it plain that non-state incomes were important in the USSR. Naturally, the exclusion of non-state incomes from the various published Western estimates of Soviet income distribution undermines their accuracy. Their exclusion also undermines their comparability with income distribution data for countries without a large informal sector (income distribution statistics for other countries also often exclude part or all of informal incomes and are therefore also misleading).

The distribution of wealth in the two systems differed substantially. A characteristic feature of capitalism is that it produces a small number of very rich people with large amounts of legitimate wealth.¹⁵ These people have extensive economic and political influence. The absence of this group under state socialism was a major difference between the systems. (There were millionaires under state socialism, chiefly corrupt officials and second-economy operators, but their wealth was usually not legitimate, not in the form of means of production, and liable to confiscation with a change in the political situation.) However, control over the means of production, analogous to the control exercised by wealthy capitalists under capitalism, was exercised under state socialism by senior Party and state officials and the directors of large enterprises. The relative position of tenants and owner-occupiers also differed. Whereas in the capitalist world the latter are generally better-off than the former, in the state socialist world the situation was reversed. For example, in the USSR the majority of houses in private ownership were traditional-style houses without modern amenities. The high income groups lived predominantly in flats (and dachas) with good facilities and low rents which were the property of the state.¹⁶

Considering inequality under state socialism from a sociological point of view, which is wider than just concentrating on the distribution of money income, Lane (1982:159) concluded that:

“In a relational sense there is inequality of control over wealth, inequality of political power, and in a distributional sense, there is inequality of income and inequality of status. The origins of such social stratification lie in the bureaucratic nature of political power, in the role structure created by the division of labour sanctioned by the educational system and perpetuated by the family. Such structural features give rise to a hierarchy in which some groups of men (and a few women) have power, prestige and privilege while others lack them. Politically, and not without internal conflict, the privileged acquire the means to help maintain and justify ideologically their advantage.”

Conclusion

Because of institutional differences, existing estimates of income distribution in state socialist countries are frequently incomplete (excluding part of the population, part of money incomes, non-monetary incomes, and the effect of shortages and starvation), and are often not comparable between systems. This applies especially to the Stalinist and Maoist periods. Furthermore, there are important *intrasystem* differences, and important changes over time,

¹⁵ For some data on this, see Goda (2018).

¹⁶ This paragraph is an edited version of a paragraph on p.278 of Ellman (2014).

which complicate *intersystem* comparisons. Nevertheless, it is clear that reducing the role of the market and increasing that of the state (for example, in labour relations, medical care, education, housing, or by introducing or increasing transfer payments) can reduce inequality in capitalist economies. Furthermore, major initial results of the transition from state socialism to capitalism in the former USSR and the former Eastern Europe were widespread impoverishment and an increase in inequality. However, experience also shows that revolutionary social change aiming to eliminate the role of money and the market may well fail to eliminate inequality but simply change its causes from ownership of wealth to position in the political and bureaucratic hierarchies and/or the need to manage complex economic systems effectively.

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SUGGESTED CITATION:

Michael Ellman, "Lest they be forgotten: inequality in non-capitalist economies during the 20th century", *real-world economics review*, issue no. 86, 10 December 2018, pp. 106-118,
<http://www.paecon.net/PAERReview/issue86/Ellman86.pdf>

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BOOK REVIEW

The Public Economy in Crisis: A Call for a New Public Economics by June Sekera, Springer International Publishing, 2016.

128pp. pbk. ISBN 978-3-319-40486-8

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With the Trump tax cuts of 2017, the disconnect in popular discourse between government spending and taxing became more or less complete. Rate (and revenue) cuts were considered politically appealing, independent of any imagined social goal that might require public financing. It constituted an end to the debate over the government spending required to attain social goals and the analysis of the tax rates and regulations needed to finance this spending. Whether or not the 2017 tax cuts were merited from a macroeconomic stimulus perspective (they were not), it is important to note that not once in the recent debate over tax cuts did the issue of social protection and public spending become part of the discussion. In the US at the moment, there is little possibility for meaningful discussion of the public good, and specifically of infrastructure needs, educational improvements, broadening access to health insurance, expanding retirement pensions, reducing poverty or even assisting those injured by the introduction of new technologies or foreign competition.

How could such an economically-advanced and financially-sophisticated culture be so completely clueless when it comes to knowing even how to talk about the role of government and the benefit of government programs?

A very compelling answer to this question – and an urgent appeal for change – comes from June Sekera, in her book *The Public Economy in Crisis: A Call for a New Public Economics*, which arrives at a crucial and opportune moment. Sekera argues that the reason the public does not connect taxes to expenditure and does not even know how to discuss the benefits of government spending, is that the economists themselves do not have the conceptual framework to deal with the issue. How could the public be expected to do so if the experts cannot? For Sekera, this absence of a theory of public spending and taxation has had real consequences, “degrading” our appreciation for government production and weakening our democratic practices. In this slim, lively and accessible book, June Sekera makes that case for a new economics to account for the public sector. The aim is ambitious: to reinvent the concept of “public economy” and even of “public” (p. 94) and to go beyond economics to engage the political process. Sekera has been thinking about these issues for decades, and it is an important contribution that this thinking is brought together, combining theoretical critique, history of economic thought, contemporary literature review and original theorization into a single volume.

Sekera spends little time on the dark side of public spending: capture. Recent journalistic accounts show that a significant amount of private wealth is put into influencing public decisions (Mayer, 2015), and that in the era of *Citizens United* this is only likely to increase.

But ideas, and even social theory, matter. Keynes famously noted that “I am sure that the power of vested interest is vastly exaggerated compared with the gradual encroachment of ideas.” In this same passage, Keynes writes that “Practical men, who believe themselves to

be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.” (1964, p. 383). Sekera brings this point home powerfully, writing that “Market economics and Marketization have broken government.” This takes the argument beyond the view that the politics of market fundamentalism have been an economic failure because an underlying theory that does not account for inequity and instability that unregulated market forces inevitably bring (for example, as illustrated in great detail by Kozul-Wright and Rayment, 2007). The 2008 financial crisis brought this issue of deregulation and instability again to the forefront of public debate and led to new financial regulations and consumer protections. And the monopolistic tendencies represented by the FAANGs have led to some calls for reinvigoration of anti-trust policy. But Sekera takes the discussion further than what has driven these positive developments, arguing that the treatment of all production and consumption as if it occurred within a pure market, driven by independent forces of supply and demand, not only mischaracterizes much of what happens in the economy, but distorts how we are able to think about social well-being. Importing the market model to the conceptualization and management of the non-market realms has diminished our capacities to act in socially responsible ways, what Sekera describes as a “de-democratization” (p. 41).

In the field of public finance, Sekera argues, even the defunct economists do not offer much guidance. The neoclassical reduction of capitalism to market analysis has reduced the theory of the state to the special case where markets “fail”. While there are alternative intellectual traditions regarding the analysis of the capitalist state (more below), these have never successfully captured the imagination of the politicians or the public. This has left a void in our discourse, leaving the cynical perspective of “starve the beast” as the main analytical lens in which policy makers view the connection between taxing and spending. But starve the beast is not only deeply cynical, it is simply a strategic approach to expenditure reduction. It does not constitute a *theory* of public finance.

The widening conceptual divide between government revenue and spending is not just an outgrowth of the emergence of the alt-right. The progressive left in the US has suggested radical shifts in the role of the state, with proposals for universal income guarantees and universal job guarantees (see, for example, Darity et al., 2018, Dantas et al., 2018, and Hughes, 2018). These proposals have been criticized as too expensive or as impractical.

Implementation is difficult (which jobs in the case of the employment guarantee?) and often the financing plan is unrealistic, relying on a financial transactions tax, a wealth tax, or a carbon tax, all of which are well-intentioned and would potentially raise considerable revenue, but which would require a huge political lift in the current political context. Moreover, these proposals are aimed at addressing income inequality, which has traditionally not been a central concern of public economics.

For Sekera, capitalist economies are divided into two “environments”, market and non-market. The non-market realm itself has two parts: the “core economy”, mainly comprised of households and the care and social reproduction done there, and the “public economy”, which is the state. Much of the book is a critique of how economists have conceptualized the state in the realm of the public economy. There are two components to her argument. The first is that economic thought is inherently about markets and thus is ill-equipped to deal with the nonmarket portion of the economy. Or, as Sekera writes in the introduction, “Economic theory today lacks any cogent theory of this non-market environment” (p. xiii). Supply and demand may be one of the great inventions in the history of the social sciences but, Sekera argues,

the non-market realm is fundamentally different from a market – there are no buyers, no sellers, and no exchange.

The second part of the argument is that economic thinking – bringing market analysis to bear on the non-market sphere – has fed a political bias in contemporary capitalism against the allocation of resources toward this realm, or as Sekera writes “Contemporary mainstream economics has been a prime factor in the degradation of the public governing capacity in the United States and other western democracies” (p. 1). The consequence of this degradation is a “ravaging of government” and the elevation of private firm profits above considerations of social returns on resource use. In the very powerful opening chapter of the book, Sekera writes that the “entrenched creed of market superiority” (p. 3) has hidden cases of government contributions to social welfare.

Sekera’s punch is aimed most forcefully at the neoclassical economists who, in her view, see everything in terms of markets and thus who find the state to be necessary only where markets fail. But public goods theory, the author argues, is far too narrow and conceptually limiting. Sekera raises a number of issues in this regard. For starters, the Samuelsonian tradition in public economics provides no sense of what Sekera terms (borrowing from sociologist Claus Offe, e.g. Offe, 2014) “shared social responsibility”. Collective choice, which determines demand in the public economy, is driven in democratic countries by elections. This is a simple but important point, since it immediately implies that politics are at the heart of public sector decisions.

Such “politics” are badly modeled from the perspective of individual rational choice. For one, choice theory typically reduces government role to the demand for goods. Sekera here leans on Richard Musgrave, who wrote that “A political process must be substituted for the market mechanism” (p. 59). The process is a collective endeavor. And as we know from Kenneth Arrow, such a choice is impossible when it is understood as entirely driven by rational individual choice. Nonetheless, and perhaps because economics has a marginal utility-based notion of demand and thus sees every problem as one of optimization on the margin, economists have continued to tweak the Arrow model rather than find another paradigm. Sekera argues that this pursuit has been a dead end: “The driver in the public domain is not profit maximization; rather it is the meeting of identified public needs, expressed through electoral collective choice” (p. 31). Instead, she argues, votes should be viewed as an “input to production” (p. 65). Sekera argues that we need to acknowledge that in a democratic nation, “the public products originated with the polity and that accountability is at the ballot box” (p. 80).

Another problem with Samuelson’s public goods approach is that it limits the type of goods under consideration, since each good must be non-rival in consumption. What about schooling? Sekera adds to this example a long list of processes, obligations and provisions of financial security that are crucial for a good society but very difficult to shoehorn into the Samuelson approach (see Sekera’s very useful chart on p. 69). Public goods don’t have “buyers” in the sense of consumers seeking to satisfy their own self-interest. Public goods are purchased by an “agent” who is seeking to meet public need (p. 73). Moreover, we have no definition of efficiency for the non-market realm, and in fact much of the benefit coming from the use of public goods is “invisible”. Sekera cites Suzanne Mettler’s research that “although virtually all Americans have participated in government programs, most deny it”. Sekera’s argument that economics has degraded the role of the public sector with real and negative consequences – is based mostly on the conceptual case rather than any empirical evidence.

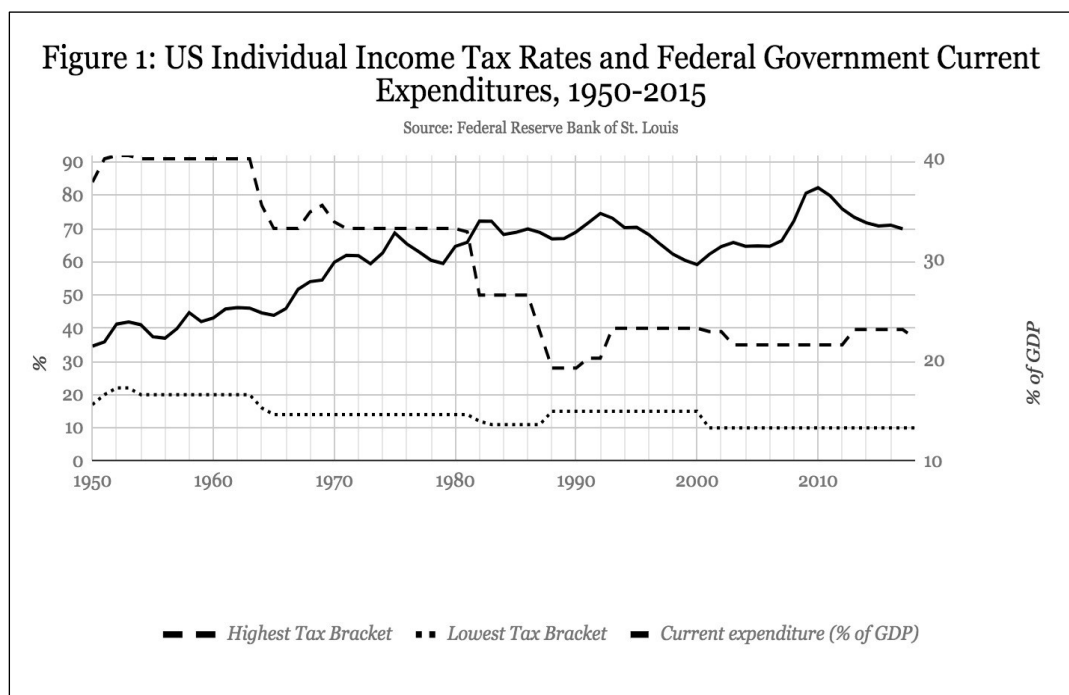
To an extent, this lack of empirical support is precisely the author's argument: that it is hard to measure the efficiency of non-market expenditure. Success in the public realm is difficult to assess. Public choice theory – that government actors don't abide by votes but by self-interest – is also rejected for a lack of empirical support. Sekera writes that "Public choice is not economic theory: it is political ideology hiding behind economic dogma" (p. 90).

Economics today has not advanced beyond the 1950s and the Samuelson-Arrow and Buchanan perspective on public goods and public choice. Sekera's book is a plea for change, to rejuvenate society's appreciation for, and analysis of, the role of government in providing for economic well-being and economic development. Sekera's ambitions are very high:

"We still lack a fully-drawn theory of how goods and services originate through collective choice in a democratic nation-state. We need an economic theory that accounts for the public nonmarket mechanism by which the citizenry choose and pay collectively. We need a theory that recognizes the centrality of the election of representative who legislate goods and services into being and which lays out the forces that drive and constrain nonmarket production..." p. 43

Sekera's treatment harks back to a heterodox tradition of public finance in which the analysis of the finances of the state cannot be detached from the functioning of markets. This is the German tradition of Adolph Wagner and of Gerhard Colm, which sought to "integrate fiscal phenomena with the totality of social and economic conditions" (Colm, 1930, p. 320). Colm not only made the case for taxes and social goals to be interlinked, he also connected the fiscal realm to the overall macroeconomic picture and to the attainment of "the public interest". It was the determination of this public interest that Colm viewed as the essence of the democratic process, and it brought Colm to be a great defender of the democratic underpinnings of economic planning (Milberg, 2017). Colm's view that social goals can be identified in a democratic political process was elaborated by Adolph Lowe, whose notion of "political economics" was precisely to foreground the determination of social goals and then to understand structural economic forces need to achieve the goals (Lowe, 1965). This European tradition carried into American economic thought through the New Deal economists' thinking about planning (to which Colm was an important contributor). It was carried forward in the heterodox writings of Galbraith and Heilbroner, for whom the public and private realms – state and market – are closely connected. Galbraith critically noted the unethical disconnect between private wealth and public squalor. Heilbroner saw the connection as a basic structural feature of capitalism, in which the market realm could not exist without its public counterpart (see Galbraith, 1958 and Heilbroner, 1985). Heilbroner noted that often the state's role is invisible. Benefits are dispersed and thus undervalued, tax expenditures are not even recognized as benefits, and public investment that raises the private rate of return is often ignored. Mazzucato (2013) pushed this idea a step further in emphasizing the innovative role of the state, the benefits of which are often not shared equitably with the public that provided the tax funding. Following Heilbroner, Mazzucato (2018) argues that the value of public sector production is often simply ignored.

The growing disconnect between taxes and government spending in the public eye is a problem because it weakens democratic participation. Since 1950, US federal government spending grew from 21% of gdp to 34% of gdp and the tax rate on the highest-income Americans fell from 90% to 37% (see Figure 1). During most of this period around 40% of eligible voters did not vote in Presidential elections.



The Public Economy in Crisis fills a growing void in economics and public policy: the need for an economic theory of the state. The Trumpian turn aims at a complete retrenchment of the state in promoting social welfare. A moment will arrive when this view is widely considered impoverished, cynical, scientifically simplistic and ethically blind, uncaring, racist and classist. But as Sekera notes, neither Marxists, feminists, behaviorists or institutionalists have provided a useful alternative conception. If Sekera’s “Call for a New Public Economics” is ever met, it may entail a new economics entirely. One cannot reformulate the theory of the production and consumption of the state without also considering the inherent reliance of markets on the functioning of this state.

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SUGGESTED CITATION:

W. Milberg, "Book review: *The Public Economy in Crisis: A Call for a New Public Economics* by June Sekera", *real-world economics review*, issue no. 86, 10 December 2018, pp. 119-124, <http://www.paecon.net/PAEReview/issue86/Milberg86.pdf>

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BOOK REVIEW

Technology and Isolation: Clive Lawson on the impact of technology on the economy and society

Clive Lawson, *Technology and Isolation*, Cambridge, Cambridge University Press, 2017, 228pp. ppk. ISBN: 978 1 316 63235 2

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Introduction

Advances in machine learning, artificial intelligence (AI), robotics, 3-D printing etc. are now a mainstay of the popular press, and organizations such as the World Economic Forum argue that we are at the beginning of a fourth industrial revolution, one that will radically alter society and work. And yet, what technology is and how it relates to society more generally are questions that are still relatively poorly understood, partly because there are so many different (possibly incompatible) things referred to as technology, creating different inferences regarding the role of technology: is it neutral, determining, materially defined, a mere social construct, instrumental, alienating etc. Answers to such questions, in turn, affect how one conceives of technology. In this context, Clive Lawson's book *Technology and Isolation* (Cambridge University Press, 2017) provides a timely and innovative study of the influence of technology on society. Lawson brings a sense of perspective and clarity, based on wide-ranging reading of the many ways that technology has been considered. He does so from a philosophical, point of view. Whilst many contemporary economists might be sceptical of such an approach, it is valuable in so far as it asks important fundamental questions that tend to be omitted because of the way economists are now socialised to think and research. *Technology and Isolation* rewards careful reading and deserves to become a standard point of reference.

Primarily, Lawson provides an ontological account of technology which he clarifies, and puts to work, by considering a range of currently topical themes within the domain of technology studies. Given his concern to avoid any form of determinism, he carefully elaborates certain tendencies that are likely to be present as technology comes to play an ever-larger role in our lives. For example, a central aspect of previous critiques of the role of technology in society is the way in which technical activity leads to an instrumental attitude centred on means and ends, where this instrumental attitude starts to expand to other spheres of human life, colonising social activity.

Lawson's book can also be understood as one concerned with making connections, especially between different disciplines. Most explicitly, Lawson attempts to connect the philosophy of technology with recent developments in social ontology, especially as set out by the Cambridge Social Ontology Group. But Lawson is concerned also with the connections between various social sciences in their study of technology. Lawson is an economist by training, and it is clear that many of his motivations and concerns are prompted from economic questions. Moreover, Lawson draws upon several economists who addressed the broader connections between technology and society in their work. But Lawson's intention is to provide a broader picture of those connections, one that is relevant for all the social sciences, the philosophy of social sciences, and the philosophy of technology, as well as

even for accounts of social ontology. I shall here try to provide a broad outline of the topics addressed in this fascinating book, starting with the relevance it has for economics in particular, but also situating this relevance in the broader scenario set out in the book.

Technology, economics and determinism

Technology is a topic that has been discussed by economists of various traditions and in various ways. Karl Marx believed it to be central for understanding human societies, noting how “Technology discloses man’s mode of dealing with Nature, the process of production by which, he sustains his life, and thereby also lays bare the mode of formation of his social relations, and of the mental conceptions that flow from them” (Marx, 1999[1867], p. 487). Technology is also central for the institutionalist tradition stemming from Thorstein Veblen. Indeed, the idea of instrumental valuing that many see as central to institutionalist thought, is primarily concerned with the nature of technology and its relationship to other kinds of social phenomena, especially social institutions (Ayres, 1978[1944]; Tool, 1987).

In addition to the Marxian and institutionalist tradition, technology is also often mentioned within mainstream economics, for example when discussing economic growth, where technology is either taken to be exogenously given (Solow, 1956) or endogenously determined (Romer, 1986), but a key determinant in any case. Inequality, a topic much discussed recently, is also often seen as a consequence of technological change, which increases the marginal productivity of skilled workers while maintaining or even reducing the marginal productivity of unskilled workers (Goldin and Katz, 2008).

But despite the common recurrence to the word “technology” and the importance rightly or wrongly attributed to it in shaping various social and economic outcomes, its meaning is rarely discussed within economics, especially outside the traditions associated with Marx and Veblen. As Lawson (2017, p. xi) notes, in mainstream economics “anything that changes the relationship between inputs and outputs of some production process is referred to as technology”. Technology is merely mentioned as something that changes the mathematical form of the production functions employed. Here, the problem is clearly a tendency for mathematical formalism regardless of the underlying content.

Even amongst those less inclined toward mathematical formalism, technology figures less prominently in social analysis than one would expect given the impact of technology on society. A reason for this neglect is the fact that earlier contributions seemed to go too far in their assessment of the influence of technology in society. This is especially the case regarding the current of thought often termed “technological determinism” (Lawson, 2007; 2017). Lawson argues, however, that rejecting these older contributions to the study of technology on the basis of their supposed technological determinism, tends to mean that more recent accounts have felt justified in ignoring crucial issues that these older contributions were addressing. Lawson, instead, attempts to engage with these (supposedly deterministic) accounts. Part of his reasoning seems to be that such accounts do not, when looked at in any detail, actually constitute a thorough-going form of determinism (Lawson (2007, pp. 33-35). But also because, Lawson argues, such accounts are far too interesting and important to ignore. To understand how Lawson accommodates their insights, whilst still avoiding determinism himself, it is necessary to consider the ontological account of technology he develops.

Lawson's ontology of technology

A central problem for the study of technology, as is often noted, is to clarify what the term technology might actually refer to. In this regard Lawson distinguishes between definition and ontology, where the former is essentially a matter of convention and the latter one of discovery. As regards to the former, Lawson provides a historical account of the development of the term, focusing in particular upon the point at which the term technology becomes significant in academic and public discourse. Lawson argues that this happens in the early 20th century, especially in the United States. The crucial point that he makes is that in this period the term shifted its meaning from the etymologically more accurate "study of craft" to refer instead to an object of study itself, namely, the material results of science and other forms of study. Lawson then provides an ontological account of such material results over several chapters where he attempts to accommodate a variety of characteristics usually associated with technology, so understood.

Central to the account developed is a distinction between three moments of the process in which technology comes into existence, these being: the moment of isolation, where mechanisms, aspects, or elements of the world are isolated or separated from the domain in which they are found; the moment of recombination, where these isolated elements are recombined to produce essentially new objects with new characteristics and properties; and the moment of enrolment, where such objects are positioned within the social world.

This tripartite distinction underlies much of the material Lawson covers in *Technology and Isolation*, especially in the second half of his book. For example, it is easy to see how Lawson addresses questions of technology's influence on society without falling foul of the determinism he criticises. Essentially, the first two moments, concerned with isolation and recombination are responsible for the general properties or tendencies that have been associated with technology, whilst the moment of enrolment captures the recent contributions of constructivists and others, who emphasise the way that technology is shaped by human activity. Although Lawson develops and utilises all three of these moments extensively within the book, I shall limit myself to a focus upon the first and third of these moments in this short review.

The first point to make is that it is perhaps the latter moment, of enrolment, that draws most heavily upon the social ontology literature. Enrolment involves the act of embedding or positioning artefacts in our daily lives, investing them with meaning and functions, and associating rights and obligations to their use. As with Lawson's earlier contributions (such as Lawson, 2007) it is clear that he is heavily influenced by Roy Bhaskar's early account of critical realism, and in particular his transformational model of social activity. However, Lawson's (2017) new conception has been developed together with recent elaborations on social ontology associated with the Cambridge Social Ontology Group, and the notion of social positioning in particular – see Stephen Pratten (2015) for various contributions that capture the essence of the project associated with the Cambridge Social Ontology Group. These ideas about social positioning, which remain rather undeveloped in Bhaskar's work, have become a central component of the Cambridge group's contributions, especially in their engagement with a variety of other thinkers, such as as John Searle, with whom they share otherwise very similar social ontologies.

Lawson's (2017) book is much more, however, than an elaboration of the ontological theses advanced within the Cambridge Social Ontology Group. For example, Lawson captures a

range of different aspects of technological activity within what he terms a “transformational model of technical activity”, where technological artefacts act as the material condition and consequence of certain human activities, but also where the values and ideas of human beings become ‘materialised’ in artefacts. In Lawson’s terms, technical activity involves harnessing the capacities of material artefacts in order to extend human capabilities. Similarly, Lawson concludes that the most adequate way to conceptualize technology is as artefacts that extend human capabilities. These ideas of course overlap in that this extension of human capabilities is part of the process by which technology enables human activity in certain directions, while constraining it in others.

The significance of isolation

To return to Lawson’s tripartite distinction, it is clear, given the title of Lawson’s book, that the moment of “isolation” plays a central role. However, the role played by the idea of isolation is not perhaps the most obvious, i.e. Lawson is not primarily concerned with the idea that a society with more technology in it is one where people are more isolated from each other (although this may be the case). Rather, Lawson is concerned with the way that different ideas of isolation recur throughout the technology literature and attempts to give some grounding for this.

It is important to see that this focus on isolation also draws heavily on existing work in ontology, especially on Bhaskar’s account of science and his identification of the conditions of experimental activity as requiring conditions of closure. Of course, for Bhaskar the aim is to distinguish the basis of differences between the different (experimental and non-experimental) sciences. But for Lawson, the moment of isolation is important in distinguishing technological artefacts from other social phenomena. In particular, something like closed systems must exist for technological components and other elements to be so isolated as to be recombineable in the form of new technological artefacts (which can then be enrolled in different ways).

Lawson’s analysis of technology and isolation is also relevant for understanding how different human beings may see their well-being affected in different ways by a tendency towards a more instrumental attitude, which undermines the status quo. In fact, there have been divergent perspectives on the instrumental attitude brought about by technological change, which is seen in positive terms by some authors such as Clarence Ayres (and Veblen if we accept Ayres’ interpretation of Veblen), and in negative terms by authors such as Martin Heidegger, who criticises modernity for bringing an impoverished or trivialised lifeworld, as Lawson (2017, pp. 177-201) notes. Lawson (2017, p. 9) also notes that despite many differences, there are also striking similarities between Heidegger’s critique and that provided by Jürgen Habermas, since both emphasise how instrumental attitudes leads to a concern with relating means and ends that drains the lifeworld of its meaning. This happens because the tendency to isolation is transferred to non-technological activities as well, with personal and emotional involvement being significantly reduced.

While Lawson (2017, pp. 8-9) refers to philosophers like Martin Heidegger and Jürgen Habermas when addressing the colonisation of the lifeworld by this instrumental attitude within modernity, the general idea of colonisation of the lifeworld by an instrumental attitude was a central one in economics in the past, not least for the German Historical School, within the work of authors like Werner Sombart and Max Weber. For Sombart and Weber, capitalism

was characterised by a calculative attitude, where all human life is assessed in terms of means and ends. And even Joseph Schumpeter's (1942) analysis of capitalism draws on the same idea, while stressing how the expansion of this calculative attitude leads to the destruction of human values that sustain capitalism.

The expansion of this calculative attitude can also be clearly seen in economic theorising, leading mainstream economics to become ever more formalised while taking human rationality in a merely instrumental sense. Of all social sciences, economics has perhaps been the one most often associated with a conception of the human agent where the latter has a purely instrumental attitude toward the world. Understanding how technology contributes to such an instrumental attitude, which colonises various spheres of human life, can help explaining this state of affairs. Drawing on Lawson's conceptualisation of the role of technology in society, the tendency for a merely technical analysis within economics (while characterising human agents in terms of a merely instrumental attitude) can then be seen as a symptom of a more general problem in society. Lawson delivers a broader analysis of this social problem, which is enabled by his development of a sophisticated ontological account of technology.

Lawson (2017) does not discuss these links to the state of modern economics, or the role of the German Historical School in emphasising the calculative attitude within capitalism, but develops important connections between the calculative attitude and the use of technology, while also drawing on contributions from Veblen, who received important influence from the German Historical School (especially from Gustav von Schmoller and Werner Sombart). But according to Ayres, Veblen saw such an instrumental attitude in more positive terms, as noted above, since it would lead to the destruction of ceremonial aspects of life that Veblen saw as detrimental to human well-being, within what Ayres saw as a Veblenian dichotomy between instrumental attitudes and the ceremonial aspects of life. What Ayres defends, however, is not an extremely calculative attitude such as the one depicted in modern mainstream economics and its conception of human beings, but rather a practical concern with engaging with the world while going beyond the ceremonial repetition of often repressive human practices.

Lawson (2017, pp. 82-98, 168-176) develops Ayres' ideas on technology in great detail, focusing on Ayres' distinction between tools and icons, where tools are artefacts used for merely instrumental purposes, while icons are associated with various ceremonial aspects. Lawson also draws heavily on Ayres' notion of recombination which is, as noted above, seen by Lawson as the second central moment in the diachronic understanding of technology.

This notion of recombination, together with the moments of isolation and enrolment highlighted above, enable Lawson to address another important influence of technology on society. In addition to a supposed impoverishment of the lifeworld, the speed and rhythm in contemporary societies is often pointed out as a reason for loss of meaning in social interaction. Distinguishing moments of isolation, recombination and enrolment enables Lawson to provide an explanation of social acceleration (a topic addressed also by James Gleick and others) which goes a long way to explaining this process.

Lawson (2017) explains this process noting how, as more components are isolated, the number of possibilities for recombination increases. This leads to the emergence of technological devices through recombination, which is associated with the idea that technological change is accelerating. However, in order for such devices to enter use they must be enrolled which implies harnessing the capacities of technical objects for human use.

As noted, artefacts function in society only when enrolled in particular networks of social relations. But, Lawson argues, this enrolment always takes time, especially if it is to incorporate lessons learned by different communities about what a good life might involve.

But as further isolation and recombination lead to greater technological progress, technological devices arrive at a speed that makes meaningful enrolment difficult or even impossible. Thus, there is the tendency for superficial forms of enrolment to take place, and this tendency leads to a normalization of superficial enrolment, thus explaining why modernity is often perceived as an epoch where human life is experienced as more superficial, as human activities lose much of their meaning. Lawson's (2017) account enables an explanation of this normalization of superficial enrolment, which captures a much debated phenomenon which is, however, seldom explained so clearly.

A great contribution of the book is, indeed, the way in which it provides a clear but balanced explanation of many problems posed by technology to society, without focusing too much on one side of the problem and losing sight of other relevant aspects, as often happens in contributions which tend to emphasise either the negative or positive aspects of technology almost exclusively. Even the reader who disagrees with Lawson's thesis will find abundant resources in the book for developing alternative positions drawing on Lawson's excellent synthesis of competing views on technology.

Social ontologies and the philosophy of technology

The main emphasis, throughout Lawson's book, is upon ontology. He both describes various problems in ontological terms and attempts to give ontological answers. And as noted, it is because of his attention to ontological matters that he avoids errors often found within the technological literature, such as technological determinism. Thus, it may perhaps be useful to conclude this review by saying a little more about the social ontology that informs Lawson's analysis, the different ways in which technology can be conceptualised under such as social ontology, and the relevance of social ontology for understanding contemporary problems.

As noted above, Lawson takes much from the Cambridge Social Ontology Group. For example, the idea of social positioning plays a central role in Lawson's conception of technology, since an essential feature for material objects to become technology is to become positioned. It is not only human beings, but also material artefacts that can be positioned, so that enrolment can take place. More generally, the social ontology that Lawson brings for his analysis of technology is a (critical realist) structured social ontology, where powers, mechanisms and tendencies may be out of phase with actual events, and the social realm is defined as the part of reality which necessarily depends upon human beings.

This structured ontology stands in contrast with other ontological accounts that Lawson discusses in the book, such as Bruno Latour's, according to which it is in practice not possible to distinguish the social and the non-social, and the world is characterised by "flat happenings", where a range of actants cause and are caused, giving the social scientist little else to do other than trace (describe/collect) the nature of their associations." (Lawson, 2017, p. 47). This leads to a conception where there are no social forces or powers (Lawson, p. 48), and in fact the world is reduced to events. Thus Lawson (2017, p. 49) quotes Harman's remark that "Latour is proudly guilty of what Bhaskar and DeLanda call "actualism"", while

arguing against such a conception, noting how “certain systems are so organised as to have powers that did not exist before the organisation came into being” (Lawson, 2017, p. 48).

While this social ontology is certainly behind much of the analysis of the book, its application to the problems posed by technology also raises problems for the ontological conception adopted, leading to its revision regarding certain aspects. As a consequence, the perspective adopted by Lawson (2017) regarding the study of technology departs from other perspectives advanced within the Cambridge Social Ontology Group in important ways, some of which were noted above. Particularly significant in this respect is the fact that for Lawson (2017) the social position of an artefact depends not only on the way in which a given community positions it, but also on the way its material components are organised.

This means that for Lawson (2017) a photocopier, for example, is a photocopier not only because it is so positioned by a given community, but also because its material components are organised in a way that enables any community to infer from it that it was designed to be used as a photocopier. In Tony Lawson’s (2012) perspective, in contrast, it would seem that the identity of an object depends fully on how an artefact is socially positioned. So, if the photocopier is positioned as a table by some community, it is a table, regardless of whether it is possible to infer from its material components what it was designed for.

Other authors within the Cambridge Social Ontology Group, such as Phil Faulkner and Jochen Runde, also possess a different conception of technology and identity, that Lawson (2017) also discusses. For Faulkner and Runde (2013), a technical object is a structured continuant with a function and is positioned in a social structure. The function is an agentive function, a term used by Searle to denote a function that depends upon the material causal powers of an object. This seems to bring us closer to Lawson’s (2017) idea that the intrinsic material properties of an object are central to its identity. But for Faulkner and Runde (2013) this means that non-material technical objects, such as a bitstring, or even human beings, can be understood as technical objects, since they also are structured continuants with a form and function. However, given Lawson’s concern with technology’s special place and role in human societies, he conceives of technology in narrower terms. Thus, people are not technological objects because they do not consist of elements that were isolated and recombined in order to extend human capabilities. And neither even are non-material objects, such as computer code, technology. While “it is certainly possible to imagine code as disembodied”, it is also the case that “code and software are important examples of technology” only when “they are realised in particular material devices and artefacts”, and “to the extent that such things can ever exist as disembodied in any real sense... they are not technology” Lawson (2017, p. 94).

At root here, is a deep ontological problem that goes back to Plato and Aristotle, of whether forms (or universals, to use medieval terminology) exist independently of their material embodiment, as Plato seems to have argued, or only in conjunction with their material embodiment, as in Aristotle’s hylomorphic theory. It is an ontological problem that, when applied to code and software, for example, has very important implications as computer programming becomes ever more relevant for the economy and society, given the scope of human activities that are increasingly performed through computer programs, leading to a continuing expansion of the role of technology into human activity. These are very relevant issues for contemporary discussions on the fourth industrial revolution, and its potential impact in the economy and society.

In the past, the service sector was seen as the last stand for human interaction, as technology replaced human labour in agriculture and industry. While in agriculture and industry a product is delivered to the customer in a finished form, in services the customer co-produces whatever service is being provided, by interacting with the provider of the service. In fact, a service is sometimes defined in terms of whether it is co-produced with the customer (Sampson and Froehle, 2006), rather than in terms of intangibility. But as the internet enables services to be performed through ever more sophisticated computer programs, we reach toward an economy and society where the mode of production tends to be less characterised by human interaction than ever before. So in addition to the ontological question of whether technology must be embodied in tangible materials or not, we must also address the challenges brought by this ever greater role of technology in human societies.

John Maynard Keynes thought that technological change would enable a world where humans would find the problem of production already solved, thus allowing time for much more enriching human interaction than ever before. Marx had warned, however, that as long as the economic system remains a capitalist one, technology will be used to extract more surplus value from labour, while decreasing the well-being of human beings who become elements of a machinery driven by a motor mechanism that controls the rhythm of human life. And a motor mechanism need not be necessarily a steam engine or an internal combustion engine. E-mail systems or social network feeds, in which information arrives at a certain speed while requiring some response by the humans who receive it, are an example of another motor mechanism that shapes the rhythm of human life, at a speed high enough for preventing meaningful enrolment, leading to what is widely perceived as an increasing superficiality in human life. We are yet to learn how to put technology into good use, not only for the sake of human well-being, but also for ecological purposes. As E.F. Schumacher (1972) noted a long time ago, as long as technologies are not compatible with a balanced ecology, the problem of production remains unsolved.

In order to avoid falling into discussions of merely epiphenomenal aspects as it often happens when addressing these issues, we need first to understand the nature of technology and its relation to society. This is why ontologically informed accounts such as Lawson's, which drive us into the nature of social phenomena, are crucial for a deeper understanding of the contemporary world. However, the different social ontologies discussed above also show how ontological analysis cannot be merely a top-down approach, but must also be revised as the analysis of technology raises further challenges for the ontological conception adopted. Thus, Lawson (2017, pp. 34-36) stresses that he is not doing ontology of social science, but rather ontology *for* social science (Latsis *et al*, 2007), one that is relevant for understanding the problems of contemporary societies discussed across the various social sciences. In this regard, Lawson's book constitutes a great advance in our understanding of technology, and it deserves to be read widely.

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SUGGESTED CITATION:

Nuno Ornelas Martins, "Book review: *Technology and Isolation*: Clive Lawson on the impact of technology on the economy and society", *real-world economics review*, issue no. 86, 10 December 2018, pp. 125-133, <http://www.paecon.net/PAEReview/issue86/Martins86.pdf>

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INTERVIEW

Heterodox economics and economic methodology: an interview with John Davis

Jamie Morgan [Leeds Beckett University, UK]

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John Davis is a well-respected and prolific heterodox economist, historian of economics, and philosopher/methodologist of economics. Over the years, his main critical interest has been the individual identity conception in economics (for example, Davis 2003, 2011). However, he has also written extensively on the relationship between heterodoxy and mainstream economics, pluralism, philosophy and methodology of economics, economics imperialism, the change in recent economics, Keynes, Sraffa, Ricardo, social economics, capabilities, and health economics.

John was previously editor of the *Review of Social Economy* from 1987 to 2005, and has been co-editor with Wade Hands of the *Journal of Economic Methodology* since 2005. His role at the *Journal of Economic Methodology* combined with his many and varied scholastic interests mean John is ideally placed to have observed (and so comment on) changes in thinking about the nature and perceived role of economic methodology in economics since the Global Financial Crisis, as well as, by extension, change and evolution beyond the core of mainstream economics.

Many of John's works can be accessed via his website: <https://www.johnbryandavis.net>. He is an emeritus professor of economics at Marquette University and an emeritus professor of economics at University of Amsterdam, John.davis@marquette.edu.

He is interviewed by Jamie Morgan for RWER...

Jamie: John, over the last decade or so you have written extensively on the diversity of contemporary economics, the characteristics of that diversity, its scope, limits and potential. Would you say your position on these matters has evolved during that time?

John: Yes, it has but that has mostly been to deepen the views I expressed in my 2008 *Cambridge Journal of Economics* paper, "The change in recent economics and the return of orthodoxy," (Davis 2008; see also Davis, 2006). There I attributed a core-periphery structure to economics based on the orthodoxy-heterodoxy divide, and looked at the impact of the last 30 years of reverse imperialisms on economics' core and neoclassicism in particular. Contrary to some responses to that paper, I don't believe new research programs like behavioral economics are heterodox in the way heterodoxy has long been understood, though I suggested that as long as they co-occupy economics' periphery they constitute a type of heterodoxy – probably an inapt thing to say, but consistent with a core-periphery view of the organization of economics. The "return of orthodoxy" part of the title was meant to suggest that a new core would eventually emerge, on the grounds that that structuring has endured in economics, but that it would differ from neoclassicism, which might even become heterodox, though not obviously in the traditional sense of heterodox.¹ But I also left open that

¹ John and various others consider aspects of this in Morgan, 2015.

the core-periphery structure of economics might go away in the long run – perhaps signaling a fundamental shift in the nature of economics as a discipline.

So, I think there are subtle issues associated with the core-periphery hypothesis (see Davis, 2018). One is what happens to other-science imports into economics associated with reverse imperialisms. I label this the “domestication” issue, and note that there can be full and incomplete domestication. The former case is the pessimistic one. Things go on as always. The latter case is more interesting because then you must ask what the effects are of introducing “alien” other-science content into economics. If you’re trying to understand the development of disciplines over time in a world in which disciplines influence one another, and also the fact that in the history of economics dominant programs have changed over time, then the incomplete domestication view is a useful starting point.

Another issue is what happens to economics’ traditional insularity and boundaries with other disciplines when there is increased interdisciplinarity in science – for some, a characteristic of current and perhaps future science. A lot of new science, then, ignores past science boundaries – e.g., bioengineering. In economics, now we have behavioral economics, complexity economics, neuroeconomics, econophysics, ecological economics, and bioeconomics. What’s going on? Why should economics be different? I think this whole issue of science boundaries and economics’ boundaries needs further investigation, and that this has been generally overlooked in economics’ history of inward-looking self-evaluation.

Related to this, another issue is whether science-wide developments may change economics. One development I’ve written about is increasing specialization in science, including economics (Davis, 2019). The argument I’ve tried to make is that a “more trees, less forest” development brought about by increasing specialization obscures theory, leads to more informal commitments to it, and potentially weakens the core-periphery structure of economics. In my own experience, I’ve seen heterodox people successfully interact with neoclassical people when issues were cast as specialized types of investigations. People may still disagree strongly about theoretical underpinnings, but if these don’t come up in that interaction, a less polarized professional collegiality is possible that perhaps helps protect heterodox people.

A further issue concerns the evolution of economics’ own practices. I know people are unhappy about the increasing dominance of formal modeling, but there may be a silver lining here also. Formal modeling typically has a weak link to underlying theory because all attention is focused on the highly self-contained character of the model. Dani Rodrik in *Economics Rules* also argues that current modelling practice ties models closely to their applications, so that every new application means a new model. Again, the “forest” is hard to see. Similarly (and relatedly), the much commented on “empirical turn” in economics suggests old dividing lines in economics can play a lesser role than in the past.

These sorts of changes in practice might be “technology-driven” in that the sense that advances in computational capacities and the emergence of big data presumably are driving them, at least in part. Though there is also the sociology of publishing. In any case, these kinds of issues are what continue to interest me in connection with my preferred approach, what I refer to as “the change in recent economics.” As you say, it concerns how we understand diversity in economic thinking, but in this instance diversity approached in a descriptive way, a matter separate from but tied to thinking about diversity prescriptively, where we talk about pluralism in economics.

Jamie: If diversity, at least of some kinds, under some descriptions is growing, does this suggest a growing practical onus for the methodologist to act as an anchor or center of gravity for the field?

John: I believe that economic methodologists indeed have an important role in addressing division and partisanship in economics, but I wouldn't go so far as to say they can constitute an uncontested centre of gravity for economics. On the contrary, it seems to me they can identify and emphasize methodological controversies that sustain the core-periphery division in economics, and perhaps assist those defending pluralism in adopting strategies for combatting this division. Let me explain this by making an important distinction between two types of assumptions in economics: substantive and methodological.

Substantive assumptions concern fundamental beliefs about the nature of the economy and economics. For example, mainstream economists tend to believe that social relationships are fully explainable as economic relationships, and in particular as exchange or market relationships, whereas heterodox economists generally believe the opposite, that economic relationships are explained by social relationships. That is, the difference is whether the society is subsumed within the market or the market is subsumed within society. One way in which this difference is expressed has to do with the equilibrium assumption in economics. Mainstream economists believe markets have a "natural" equilibrium logic; (old) institutionalist economists believe that to the extent that markets exhibit equilibrium adjustments this is due to their institutional and historical social organization.

My view, then, is that differences in substantive assumptions between economists generally cannot be reconciled. They are ideological in nature, and debates between those who disagree about them are usually fruitless. In contrast, methodological assumptions operate in a different space from substantive assumptions – they concern how economics is done in light of its epistemological requirements – and while significant differences exist between the mainstream and heterodoxy on this terrain, the terrain itself is negotiable and appears more as a spectrum of views with both extremes and intermediate positions. Accordingly, this space can be contested, and this makes methodology an important domain within economics. To be specific, I identify four areas in which debates over methodology are relatively open, though they each still possess a spectrum of views with polar extremes.

Those areas are: quantitative vs. qualitative reasoning, the basis of assumptions, the role of modelling, and pluralism. The first should be clear. The second concerns the extent to which economics relies on abstract reasoning and/or empirical investigation. The third concerns how models work as intermediate steps between theory and evidence. The fourth concerns how economics supports innovation and diversity in views.

My argument, then, is that while the mainstream and heterodoxy tend to opposite ends of the spectrum on these (and other methodological) areas of thinking, there is considerable vagueness in views and regions of overlap between them such that dialogue and a development that hybridizes different views is possible. I do not have the space here to defend this idea (but see Davis 2018). My general view, however, is that engagement on this level is possible, whereas it is usually not possible with regard to substantive/ideological differences. I don't say harmony between mainstream and heterodox economists will ensue. Rather, I suggest that a common space of discussion exists in economic methodology that accommodates both, and, especially, gives opportunities to heterodoxy. I recognize that if you think in terms of extreme positions on these four divides, you will disagree with me, probably

strongly. My reply is that younger heterodox people, who are more methodologically opportunist and less entrenched than older heterodox individuals in economics are likely to successfully inhabit intermediate spaces in economics methodology, and – here is the important conclusion – sustain their substantive assumptions despite the larger ideological divide in economics.

I don't mean heterodox economists should give up development of their substantive commitments! Yet given the current polarized nature of economics, to insist on debates on this level is to invite suppression and continued neglect. I have two motivations then. One is strategic. In recent decades heterodoxy has been at risk, and I think its potential suppression should always be a part of heterodox economists' calculations. The other is my hopefulness about change in economics. I think it is quite possible that the orthodox/heterodox divide in economics will dissipate as the world and economics become more complicated and complex. In such a scenario, I imagine increased influence for heterodox thinking. To return to your question, I see this as involving creative extension of heterodox thinking across multiple methodological fronts.

Jamie: That seems clear. Strategy is important, but it does presuppose goals and my previous question could be posed with the intention of prompting some combination of these two ways of thinking. Consider my question based on a slightly different underlying meaning prompted by the GFC. I wasn't thinking directly about heterodox and orthodox divides and thus the degree or boundaries of the mainstream in a sociological sense as the context in which one might interpret this onus. I was thinking more specifically about what the purpose of methodology is as a learned or induced response. Is it descriptive, evaluative, critical, unifying? It could, of course, involve any or all of these. Where do you think the emphasis has been whilst you have been at the *Journal of Economic Methodology* and what difference to you think the GFC has made to this? David Colander (2013), for example, made the point in the *Journal* that methodology has been overly descriptive of what economists have done. Do you think methodologists have any special or unique position, standpoint, insight or perhaps particular responsibility in terms of addressing the field as it becomes more diverse in some ways, including in highlighting what *may be* limits or problems with the collective nature of what is otherwise diverse? What does this presuppose?

John: Interesting questions. Let me begin by saying a little about the experience Wade Hands and I have had at the *Journal of Economic Methodology*, and then move to larger matters. First, then, what determines what appears in the *Journal* is very much a matter of what is submitted to it, while what has been submitted to it reflects what people involved in economic methodology think the issues are. In my view, many of these people are indeed interested in larger matters such as the direction and nature of economics, but see the key arguments as turning on specific problems and topics – as you would expect from a specialized research community. So yes, the content of what gets published in the journal is ostensibly descriptive, but as I tried to argue above this often has as an unspoken backdrop deeper concerns that methodologists have about the state of economics.

Indeed, most of the people I know in the field are quite critical of current economics. They bring a set of standards to the table that transcend economics' ordinary practice; that is, reasoning in economic methodology asks whether what economics produces measures up to reasonable epistemological requirements regarding what counts as knowledge. So, if David Colander would like economic methodology to be more prescriptive, I am sympathetic, but at

the same time think that it is often more, at least implicitly, prescriptive than it may seem. At the same time, the people involved in methodology of economics come from a large diverse set of orientations towards economics. What people regard as problematic about economics varies considerably, and so it would be inappropriate, unrealistic, and unpluralistic of Wade Hands and I to try to limit this.

I characterized economic methodology, then, in epistemological terms because this is its most prominent dimension. I personally would prefer there be greater attention to the ontological dimensions of economics in methodological reasoning, as my work on what individuals are reflects. Yet this is not the way our submission flows have gone. There are important contributors to ontological thinking in economics – Tony Lawson has done exceptional work in this regard. Also, feminist thinking about gender is ontological. Julie Nelson and others question not only how our conceptual categories reflect gender but also the role of gender as an economic structure. Marxists and political economists who emphasize class and social stratification also clearly make ontological arguments.

So I agree that methodologists have an important responsibility regarding the direction and development of economics, and I can see why some, such as David, are impatient with the role methodology has played thus far. The GFC was an existential crisis for the neoliberal view of markets, conventional macroeconomics, and economics in general. But its effects on methodology and economics have been modest at best. One area where there has been some impact in methodology, which in fact is emphasized by David, is the emergence of complexity reasoning. In fact, we ran a special issue of the *Journal* on George Soros' thinking, "Reflexivity and Economics" (vol. 20, no. 4, 2013) and a special symposium on Big Data and complexity (vol. 24, no. 4, 2017) in hopes that this would stimulate a submission flow of new papers, but have been largely disappointed. I note that complexity reasoning also challenges ontological commitments in economics. So maybe the limits you ask about are ultimately the inability of the field to formulate and emphasize the central role ontological reasoning plays in methodological argument. Why this might be is a good question.

As a practical matter, one having to do with the demographics of the methodology community, what past decades have shown is an increasing share of research being done by people trained in philosophy rather than economics. This is due to the fact that the history of economics was largely driven out of PhD training in most places and that economic methodology was an offshoot of the history of economics. For example, at University of Amsterdam, for example, we had a program in the history and methodology of economics which maintained that these were inseparable aspects of one investigation. Unfortunately that program was suppressed and closed.

What has prospered, then, are philosophy programs in the philosophy of science specialized in the philosophy of economics (such as the stellar program at Erasmus) – in part most likely due to the extension of the former to the latter. However, while people trained in these programs do excellent research, they usually have minimal training in the history of economics. Perhaps even more important is that they rarely have to teach standard economics. I taught microeconomics and macroeconomics for many years and it refined my thinking about what I think is wrong about economics. So, people who not only do not have this experience, but also who need to publish primarily in philosophy types of journals, just do not develop the same sensitivities to what economics is all about.

Specifically, they don't seem to have the same worries about what I referred to above as substantive assumptions. For people trained in economics, and particularly the history of economics, substantive assumptions such as "equilibria exist" set off all sorts of thoughts about the nature of economics – much of it ontological in nature. If economic methodology is dominated by epistemological reasoning, then this seems in part due to how the field has developed in terms of the training people increasingly receive. I am not opposed to people being trained in philosophy (indeed I was trained in both fields). The quality of much methodological research is higher today than in the past partly because of this expansion of the field. I think the vitality of the field is also increased by people with different intellectual horizons.

That said, I worry about the decrease in people in economic methodology trained in economics, especially the history of economics, and continuously involved in an up close and personal way in teaching economics. This development is the result of the systematic exclusion of history (and methodology) of economics from PhD programs over the last several decades that began in the US. It used to be that there were many people from these fields from the US but they are now a dwindling number, and we must look for this increasingly to Europe for the future. Mainstream economists are responsible for this development, though they usually deny it. One measure of what happened is the change in thinking of famous historian and methodologist of economics Mark Blaug. Over much of his career he was sympathetic to neoclassicism and the post-war development of economics, but later in his career he became bitter and contemptuous about it, in part because of the suppression of those fields it promoted (Blaug, 2003).

Jamie: So, the methodology of economics, at least as you have observed it, is being increasingly colonised by those trained mainly in philosophy rather than economics? As you say, I suppose that makes sense in terms of the way education and training in economics has developed, but it had not occurred to me before (the focus of sociology of knowledge is typically what is shed rather than who is attracted to the fields that are peripheralised, though it is just as important). You also mention ontology, and then an "inability" for this to be assimilated. How much weight would you put on this? Ontology has become an attractive orientation for quite a few working beyond the core of the mainstream, thanks in different ways to Tony Lawson (the Cambridge Social Ontology Group; for example, Pratten, 2015; Fullbrook, 2009), Sheila Dow, Uskali Mäki (for example, 2001) and various others. There is a strategic issue here also. How effective strategically do you think a focus on ontology can be in creating dialogue and change in economics? I read a lot of philosophy and it is fairly well acknowledged that it is not dominated by "ontology" and philosophy in some ways exhibits some of the same tendencies that more critical methodologists' critique in economics (an abstruse fascination with method and form). Does economics attract trained philosophers who are more "ontological" than is typical in philosophy? Is too much expected of philosophy? Lawson, for example, differentiates himself from Mäki in part based on the degree to which he wants to criticise the fundamental metaphysics of the mainstream (see Lawson, 2009: pp. 109-110).

John: Yes, the sociology of economics perspective I take involves both "births" and "deaths" determining the evolution of the landscape of different research communities. But in addition to the changing compositions in types of research communities over time, we should also think about the concurrent change in the content of ideas of those communities, so there are

two ways in which economics' sociology changes: not just who's out there in terms of different research communities (the different species of approaches) but also how the thinking within those communities is changing. Borrowing another term from natural science, we might think in terms of the "half-lives" of kinds of ideas within approaches, or the degree to which they survive as debates within them go on, their survivability over time, and how this then affects the composition of different types of approaches in economics as a whole. That is, internal change within relatively autonomous communities influences the relations between communities, which in turn then affects their internal development, and so on and so on, producing a continually changing the landscape of economics. This internal-external dynamic was set out by Herbert Simon as one type of complexity analysis (Simon, 1962). It gives us a long view of the history of economics as an evolving process, but not one that should be explained in Darwinian terms. I think Brian Arthur's (2009; cf. Davis, 2019) explanation of how technologies evolve is a better model of this sort of interaction. Let me suggest two examples. If we had two main groups of mainstream decision theorists circa 2000 – traditional neoclassicals and Kahneman-Tversky type behavioral theorists – now the shares of these two groups in the whole of mainstream decision theory have changed (in favour of the latter) as a result of how the arguments each have mounted to contest the other have evolved. Also circa 2000 we had a debate among Post-Keynesians over whether Sraffian thinking was part of Post-Keynesianism or an altogether different approach. Now that debate seems to be over – most Post-Keynesians pay little attention to Sraffa (sadly I would say). The debate between proponents of the two views drove each to emphasize what they thought important, leading to a sort of evolution within each, that produced change in the overall Post-Keynesian landscape.

The sociology of economics, then, involves a conceptual analysis of research strategies, how they evolve, and affect their juxtapositions, all framed, let us not forget, in terms of who has jobs, can remain active, and contribute to training of new people. I suppose this was more than you wanted to hear on this subject, but my intention was to segue to the main question you ask: "How effective strategically do you think a focus on ontology can be in creating dialogue and change in economics?" So I have two reactions to this derived from my sociology comment.

First, in a more critical vein, it concerns me that the ontology initiative you summarize has had relatively limited impact on methodology as a whole. (This applies no less to my own ontology of the individual work.). Why? In sociology of economics terms, this research strategy competed with others in the philosophy of economics, and that competition produced a deepening in its arguments that in my view seems to have left it more isolated and perhaps less influential than before. That is, in terms of the evolution of the philosophy of economics landscape, ontology has not gained space as a result of its own internal evolution and competition with other approaches. It continues in my view to *per se* be important, but importance also depends on influence, especially vis-à-vis other research strategies.

You suggest on the basis of your reading of philosophy that ontological investigation in economics may have become increasingly "abstruse" and thus decreasingly useful. If you are right about this, then the internal evolution of the ontology initiative, as it has competed with other research strategies in philosophy of economics, may be at least partly at fault. For comparison, another research strategy with important methodological commitments, the extension of institutionalist thinking associated with the *Journal of Institutional Economics* under the leadership of Geoff Hodgson, has developed and evolved with multiple cross-approach links, and done so without strong reliance on ontological reasoning. Another more

recent comparison could be made with complexity thinking, though the story there is still unfolding. Will it become increasingly “abstruse” and thus decreasingly useful in its internal development, or will it develop in such a way as to make it possible for other research strategies to adopt or share its methodological commitments?

Second, in a more positive light (and showing my personal preferences), I regard ontological thinking in economics as inescapable and necessary. Our claims regarding what there is, or what exists, underlie theory and accordingly underlie epistemological argument in economics methodology. It would take more space than I can use here to justify especially the latter claim. That theory presupposes ontology ought to be obvious. The *Homo economicus* idea and the “equilibrium” idea involve massive ontological arguments, and in my view their status in economics ultimately depends on these arguments being accepted, or rejected.

Going back to a distinction I made earlier above, the difference between methodological assumptions and substantive assumptions, ontological claims involve substantive assumptions. I tried to argue above that these involve irreconcilable, ideological differences between researchers, whereas conciliation is possible in regard to methodological assumptions. This does not imply people should give up work on substantive/ontological reasoning! It is at the heart of what we do in terms of how we understand the world, and defines us as researchers and thinkers. It is a characteristically human investigation and underlies our vision of a pluralistic, open, and democratic world and future. My sociology side just tells me, along with years of defeats I’ve observed and experienced, that being strategic is important, so how the ontology initiative in heterodox thinking is seen also depends on whether it has put itself in a position to reproduce itself as a research initiative competing for space with other philosophy of economics research initiatives. In my opinion, this is one of the main challenges in economic methodology.

Jamie: Yes, a major challenge seemingly. To briefly return to your Lawson point; to some degree it rather depends on who is influenced and how. Lawson’s work is widely read outside of mainstream economics – by sociologists, social theorists, and others. When they think of the scope and importance of “progress” in economics I expect quite a few are influenced by him (one need merely visit his ResearchGate page –which rather like yours is well trafficked; and his citations exceeds that of most of the current mainstream economists at Cambridge). So, perhaps that matters, in so far as the study of economy is not restricted to economists – though when one turns to influence on the mainstream his central themes seem unlikely to have much traction as things stand. The difference might illustrate something about the way the mainstream changes through time. What do you see as the most dominant mechanisms to which mainstream theory and empirical work currently responds and what would you see as influences/criteria/considerations that might be more appropriate? For example, what is the basis of, or at least limits to realism and realisticness and how would you make sense of responsiveness to explanatory failure/success? I am conscious here that this line of questioning presupposes a degree of underlying unity in the mainstream that is itself a matter of contention...

John: I like how you pose the issue of influence. I know Tony’s work is influential outside economics. So optimism about its influence inside economics rides on the hypothesis that economics will be increasingly influenced by other disciplines outside economics, however this might come about. As you know, then, one characteristic of economics since Robbins is

its firewalling itself off from other social disciplines, one consequence of which is its systematic neglect of heterodoxy which with its broader vision of economics draws on these other disciplines. As I've recently emphasized (Davis, 2018), central to the identity of economics is its insularity as a discipline – which we should not forget is instrumental to a neoliberal interpretation of the economic world as well. Not surprisingly, then, critics of mainstream economics (and the neoliberal vision of the world) attack this insularity, which relies in part on Cartesian, axiomatic foundations defining individuals, by saying that mainstream theory fails because it is not realistic and ignores the issue of realism.

But do these complaints, however merited and well-done, such as in Tony's impressive work, have any effect on the evolution of economics? Supposing that they might, particularly through the influence of other social disciplines on economics, means this hypothesis about other social disciplines' influence on economics is embedded in further hypotheses about the overall development of economics, social science, and social research that appear to have little basis in the past. To say economics will be affected through this channel goes against a century or more of its past historical development, as well as the increasing compartmentalization of all these investigative domains, as associated with their professionalization as separate domains. One can argue, as I have tried to do in regard to the history of recent economics, that economics, social science, and social research are changing and that things may now be different and in the future. Unfortunately, it's still a hypothesis with not a great deal of evidence yet supporting it.

My differentiation of substantive and methodological assumptions, then, attempts a finesse on this past and possible future by avoiding where the firewalling has been successful – substantive (and ontological) assumptions – and pushing on where I think the boundaries are permeable and negotiable – methodological assumptions. What I suggest is that specialization, emphasis on modelling, and the empirical turn in the mainstream, as central to the overall professional development of social thinking, allow for communication and common ground that runs counter to economics' historical insularity. And then my hope is that this allows other social disciplines' substantive assumptions to come into economics, implicitly and not in a recognized way at first, thus ultimately in the long run hopefully breaking down the closed ontological character of the mainstream key to its insularity.

So on to your question: what are “the most dominant mechanisms to which mainstream theory and empirical work currently responds and what would you see as influences/criteria/considerations that might be more appropriate?” How I've framed this is in terms of the professionalization and sociology of economics research. But let me not be completely reductionist about this and refer also to what is going on in science terms, or what underlies the sociology of any discipline in regard to advancing science. While the degree to which econometric and mathematical research that is carried out in economics today seems to many excessive, the science impulse behind this is still to get the evidence that we have to tell us as much as possible about how the world works – obviously a realist ambition.

Let's call this, in your words, “the most dominant mechanisms to which mainstream theory and empirical work currently responds.” As to, then, again in your words, the “influences / criteria / considerations that might be more appropriate” I note that empirical “results” always require interpretation and theorization. So what empirical economics is generating is always also being mapped out and framed theoretically. I make two points about how this may be happening currently.

First, it seems to me that the empirical turn in the mainstream has been accompanied by a flight from theory often expressed in an agnostic posture, which mainstream economists seem to defend as a sign of professionalism. In my view, what is going on in the current time is rather than people are unsure about theory, and have thus retreated to viable professional lives of empirical research (albeit with local, low-grade theoretical claims). You don't need to go so far as to jump to the idea that we are on the threshold of a Kuhnian paradigm change. It could instead be that economics is simply becoming more diverse (the specialization factor), and this makes theory formulation more tentative.

Second, at the same time, some critics of the mainstream, with their good realist instincts, seem to me to be ignoring what empirical mainstream economics is generating, on the grounds that it is tainted as a product of an unacceptable theoretical framework. There is certainly truth to this view of origins. But it also means heterodox economists in some cases are not part of the debate in economics about how the world works. Post-Keynesians have long been an important exception to this, and institutionalists, radical political economists, social economists, and others have become more active in debating what the evidence is we have about the world. For example, at the intersection of these groups and in regard to the GFC, heterodox research on the financialization of the economy strikes me as a key development in macroeconomics driven by a need to get the evidence straight on how the economy actually works – research which in my view may ultimately change not only our understanding of the macroeconomy but also economics itself.

So to me the empirical turn in economics potentially creates an opening in economics that may be an important lever for change. Again, debating what the evidence tells us is a methodological matter, specifically an epistemological argument. However, if I am right about theory commitments being implicit in empirical arguments, ontological and substantive claims come in their wake when theories begin to stabilize and begin to become evident to everyone (Hegel's late flight of the owl of Minerva). What exists counts as a deeper type of methodological claim, more difficult to achieve, but ultimately fundamental to what theories prevail.

Jamie: Yes, what exists and the empirical orientation of economics is clearly a matter of convergent interest. But equally, and as some of what you suggest and your own work makes clear, social reality is not just about what *exists* but *how* it exists based on the properties or powers of what exists. We are reflexive ethical beings and our economy as an artifice would not be possible without a whole set of ideational frameworks and explicit and implicit valuations. As such, social reality is fundamentally normative because values are inherent in the basic constituents of social forms – what we think and do, what we are encouraged to think and do (and not to think and do), how we live, how we choose to live, what we must live with, what is good for us, what is harmful for us and for our environment. These are loaded terms, they require extensive deliberation, though perhaps that is the point – given the direction of travel of economics, the progress it makes as “science”. What I mean here is that there is a further issue that bears on your own interest in the social individual and on ethics (Davis, 2009, 2010, 2013) and perhaps refers us back to the issues of explanation, realism and responsibility of economists. By this I mean, different futures are possible and only some outcomes follow from some ways in which economies are constructed. These are substantive issues for methodology one might think but they are deeply important and it would be rather neglectful if we left the inadvertent

impression that progress is not possible on these – the world turns irrespective of whether economics comes to terms with these in any adequate way. However, in the end methodology, as with economics in general, is merely a subset of a socio-political system – economics and methodology may contribute to this wider world and be influenced by it; in what sense progress is made in economics is also mediated by this (otherwise there would be no economic history and no meaningful history of ideas in economics). Your mention of financialisation strikes me as a central one these days, in so far as it raises issues of how economics has tended to naturalise processes that lead to extreme inequality, but if one wanted an ultimate example then there is (as the last IPCC report makes clear) the profound problem of ecological harm and perhaps disaster built into the very way we conceive of an economy and how we conceptualise economics (work by Julie Nelson and a few others notwithstanding). It strikes me that an empirical turn without a normative renewal and integration of ethics into economic reasoning remains a source of problems for humanity rather than solutions (and this ethical integration can be considered realism if one accepts that it represents aspects of a more realistically posed human in a more realistically conceived, constituted and evolving human system – which is by no means a judgement that there is only one true ethical position as a disguised politics to juxtapose to, arguably, the one we have now). This sounds rather soapbox and I don't expect you to solve the problems of the world in a paragraph, but as a means to start to draw together the threads of the discussion, what would you suggest about the confluence of issues that arise – the substantive and the ethical in the context of actually arising problems in the world that (some tendencies in) economics has not just described or empirically is interested in but may well have helped to create? Have economists been subtly subverted by the way professionalism has developed? Are improvements a struggle against the prevailing tendencies?

John: Great questions, Jamie. Thank you for bringing things back down to earth and reminding me of my social economics political economy roots. Yes, social science and economics are inescapably value-laden, because as humans attempting to explain the world we inhabit we are driven by our values and those values then necessarily underlie our explanations of the world. There is no god-like “objective” view from nowhere in social theory and social science, and I agree that, as you wonderfully put it, “an empirical turn without a normative renewal and integration of ethics into economic reasoning remains a source of problems for humanity.” And I also very much like your inference – “ethical integration can be considered realism if one accepts that it represents aspects of a more realistically posed human in a more realistically conceived, constituted and evolving human system.” Yes, realism and realistic accounts of the world presuppose that our explanations both derive from our values and exhibit them. They are not value-free.

This said, it is unclear why this understanding does not prevail in economics where the contemporary empirical turn is tied so firmly to positivism and the naïve illusion that science can be built around some sort of set of “brute facts”. Oddly, I think that mainstream economists in informal, non-adversarial discussions ultimately agree that facts incorporate values, and that our investigations are value-laden. If nothing is on the line, they can also be intellectually intrigued by how complicated explaining this can be. At the same time, when they get their professional partisan hats back on and return to defending economics' social science insularity, it is hard to deny that positivism is foundational to who they are. So we have a paradox that takes the form of a methodological issue that can't be joined in the

divided world of economics – contrary to my claim that methodological issues are generally negotiable. So what is the way forward?

On one front, empirical research done by heterodox economists can begin to make clear that facts and values are intertwined. Take financialisation and the GFC again. Clearly the banks undertook strategies to deregulate banking laws and extend their sway over the macroeconomy that worked to construct a financialised economy that produced fortunes for a few. So it can be shown that how the economy works has less to do with market processes than the accumulation of power. We judge the incredible suffering and costs this imposed on so many people as a result of the GFC and economic downturn as morally reprehensible, so our explanations and documentation of what happened are tied to our values. A fact is indeed still a fact, but it is necessarily framed by the values we bring to its determination.

Or take empirical research on the heuristics and biases of choice that has generated an extensive literature on nudges. What as a matter of fact apparently drives choice behaviour of course needs to be determined through careful research. Yet a strong motivation for behavioral economics research is whether people can be nudged to socially preferred outcomes. Nudging, to be clear, is an alternative to the conventional view that everything people do is ultimately self-interested response to price changes. Rather than see people as automatons controlled by a “natural” market process, the promise of nudging research is that people can design social interactions including how markets work that improve well-being. This is antithetical to the market vision of the world, and a good part of the reason why behavioral economics has been so strongly resisted by neoclassical economists. But more to the point here, empirical research on the heuristics and biases of choice is embedded in a normative ambition that economic life can be constructed to promote human well-being.

The book that Bob McMaster and I wrote on care in health care (Davis and McMaster, 2017) can also be seen to be fully underlaid by values. We argue health provider-recipient care relationships are not properly described and explained in market-based terms because this eliminates any genuine concept of caring, which the provision of health care in reality is fundamentally all about. Indeed, on the market exchange account of care in health in standard healthcare economics, caring is an externality on an arm’s-length transaction, an accidental feature at best. Of course health systems today involve market relationships, but their design and motivations are framed by caring for those in need. So you cannot empirically explain healthcare without presupposing this. Or, to explain healthcare as if it were guided by a blind, value-free market process is to explain it poorly.

I’ve only suggested with these examples ideas that might go into an analytical, methodological discussion of how economics is value-laden. How values operate in economics certainly deserves more systematic treatment than this. But I will shift direction and move from methodology back to substantive assumptions, including ones with ontological dimensions, because in my view this is where, as you put it, “a normative renewal and integration of ethics into economic reasoning” most needs to occur, and because this has been the basis of my work for years on socially embedded individuals.

While, then, I think “social embeddedness” realistically describes what an individual is, the normative content of the idea for me is what is especially important about it. Thus, *Homo economicus*, the socially detached agent of neoclassical economics, not only fails as an empirical description of people in economic life, but it comes with a normative horizon for human beings that most would reject if it were openly discussed and not disguised amongst

hymns to supply-and-demand. Despite the popular view in mainstream economics that freedom in the form of free choice is the essential characteristic of *Homo economicus*, its choices are deterministically driven by prices and incomes. Freedom, a human aspiration, has a wider scope. People hope to become things that they themselves determine. In Amartya Sen's capability framework, they seek to be agents of their own development. Capabilities and functioning are real dimensions of human life.

I am confident, then, that the person is better explained and described in these terms, as a matter of good economic science. Yet arguing this makes economics and ethics inseparable because thinking of people as agents of their own lives – and consequently as invested with human dignity – starts from a normative standpoint. To me, this is the central concern in economics, and the *Homo economicus* substantive assumption, more than anything else, is the ontological lynchpin that secures the values underlying mainstream economics that sustain society's neglect and avoidance of the perilous problems we face today, the risks that society breaks down with rising inequality, and that we destroy the environment we depend upon. How sad it is that these risks are beyond a positivistic mainstream economics, and are only matters to be lightly commented upon when one's professional day is done. You are right and hardly on a soapbox. These matters can only be beyond economics if economics is wrongly constructed, where its reconstruction turns very much on the reintegration of economics and ethics.

Jamie: Perhaps we can close with this. You mention genuine choice, capabilities and concepts of freedom. It may well be that nudging can be turned to problems of “well-being”, but the process is as apt to be turned to the concerns of a marketing firm (there are many consultancies now whose employees carry titles such as “choice architects” and who offer their services to corporations and governments). Nudging can be turned to these concerns (such as the consumer experience in order to induce more consumption) because the underlying mechanics are focused on manipulation not deliberation, and this in many ways follows a long tradition in economics – no less than *Homo economicus* there is the scope here for the treatment of a fully realised human as something less than the sum of their parts. If there is some important learning process for economics and economists to be drawn, would it not be to begin to treat humans as humans – seats of ultimate concerns, ends not means, capable of deliberative (collective) conduct? Isn't this what the ethic of pluralism ultimately speaks to, in all social science and not just economics? It is, of course, difficult to reconcile this to formal theory, but it is not difficult to think of it as conceptually reasonable, reasoned and the basis of a dialogical role for economics in the world. Isn't this why Amartya Sen has been a major public intellectual? And it is surely the driving force behind the appeal of Rethinking Economics, real world economics, the World Economics Association and many other initiatives. If it is not too grandiose, such concerns speak more to the struggle over the soul of economics than any tightly articulated methodological concern, though would you suggest the two are intertwined?

John: Behavioral thinking is certainly being used for commercial marketing purposes. (Finally, people in the business world say, “economics is producing something useful!”). So the last time I taught behavioral economics we did the analytics of the decoy effect (the asymmetric dominance effect) in order to be clear that behavioral reasoning is a two-edged sword. It can be used for social improvement and also by some to exercise power over others. It's good

that you bring this up, because most of the nudging literature in economics proceeds as if only the happy former side of the story exists. Thus, drawing attention to such things and this side of behavioral analysis makes it clear that human improvement does not come about in an uncontested way – as is made to appear the case with neoclassical Pareto recommendations (one person better off, none worse off). It also makes it clear that achieving human improvement is a social process involving struggle over who has power and how power is exercised. In effect, by removing us from the neoclassical world in which everything happens automatically at arm's length in markets, the emergence of behavioral thinking returns us to the world of political economy in which markets are embedded in society with all its conflicts.

Many heterodox economists, I believe, are impatient with behavioral economics because it seems to have been co-opted by the mainstream and seems to be only concerned with small technical issues in decision theory. On the other hand, there are also heterodox behavioral economists, such as in the Society for the Advancement of Behavioral Economics (SABE), who incorporate social psychology and social identity into economics. My view, then, is that making psychology central to economics can ultimately be destructive of both economics' insularity and the neoliberal vision of the world based upon it. You refer to Sen. Sen's historic significance is due to his advancing a capabilities conception of well-being that is alternative to and superior to the welfarist conception. His work makes it possible for us to systematically ask and empirically investigate what people want to be and do across the incredible variety of circumstances life presents. Behavioral reasoning, then, loosens neoclassicism's grip on explanations of behaviour, but Sen's thinking goes much further and provides us a vision of what human society can achieve.

Indeed it does this not only in its conception of well-being, but also in its integration of economics and ethics. This works against the false ideal of positivism so central to mainstream economics, and also carries with it a ready platform for pluralism associated with the richness and diversity of our ethical ideas. In contrast to the positivist idea that there is one correct science, ethics encompasses multiple kinds of values that reflect the diversity of life choices that characterize our world. This in turn corresponds to the multiplicity of capabilities people seek to develop across the diverse experience of human life. Altogether, I think we agree, this calls for re-founding economics in a pluralistic way, as many heterodox thinkers have sought to do in the World Economics Association, ICAPE, the *International Journal of Pluralism in Economic Education*, and the Rethinking Economics movement. Not too grandiose I'm sure. Realistic and good economic science.

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SUGGESTED CITATION:

Jamie Morgan, "Heterodox economics and economic methodology: an interview with John Davis", *real-world economics review*, issue no. 86, 10 December 2018, pp. 134-148,
<http://www.paecon.net/PAEReview/issue86/DavidMorgan86.pdf>

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A tale of two Germanies. Any lessons for Central Europe? A note

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JEL classifications O52, P27, F63

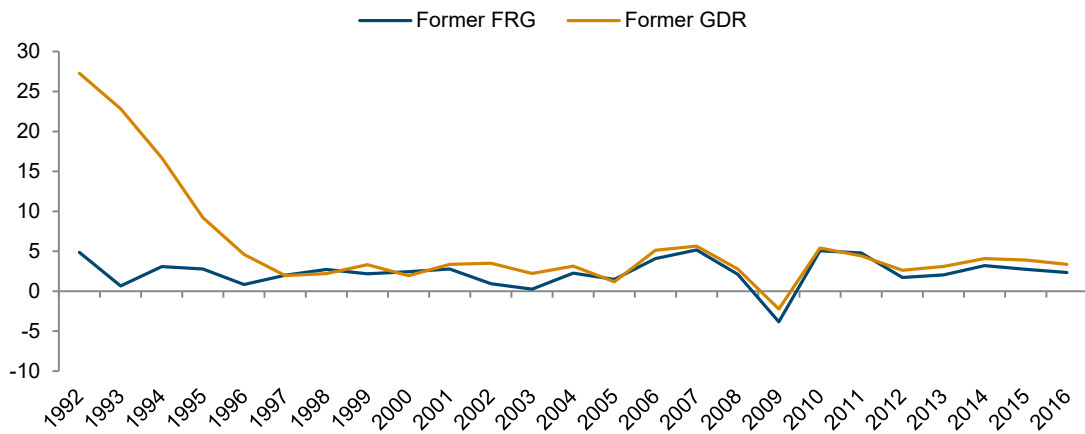
Key words German unification, economic convergence, financial transfers

The income gaps separating the Central European (CE) countries from Western Europe have narrowed substantially since the early 1990s. The catch-up is quite impressive, especially for the generally less-affluent CE countries admitted to the European Union (e.g. Romania or Poland). Economic growth in the new EU Member States is believed to have been supported not only by significant financial transfers 'from Brussels', but also by the institutional harmonisation involved and by economic integration. This is despite the possibility that there may be issues involved regarding the form and rate of integration based on free trade, free capital and labour movement within the enlarged EU. These developments *seem* to bode well for the future of CE countries, justifying the expectation of relatively rapid convergence with Western European income levels. However, some experts invoke the propensity of middle-income countries generally to get stuck in a 'middle-income trap'. Obviously, these writers are less optimistic.

The controversy over the future of CE countries' catch-up with the West is unlikely to be resolved anytime soon. There are many issues to consider. At the same time, it may be instructive to reflect on what has happened to income convergence between the former East Germany (the German Democratic Republic or GDR) and the former West Germany (the Federal Republic of Germany or FRG). The German unification of 1991 was followed by the former GDR's speedy integration into the FRG. Since this was a political unification it followed a default economic position of complete liberalisation of trade, capital and labour movement, as well as monetary unification. These economic transitions were accompanied by the abrupt imposition of FRG institutional and economic policy frameworks on the 'new' *Länder* (federal states). Unification was also accompanied by huge financial transfers. The consensus view is that the 'new' *Länder* received the equivalent of about EUR 1,600 billion in (net) financial transfers between 1991 and 2013. That corresponds to about 57% of 2013 German GDP.

Given this set of circumstances, one would expect rapid convergence between the two parts of Germany. However, the facts do not support that expectation and it is this that may provide some limited insight into the CE cases. For convergence to occur then for some metrics the GDR should outperform the FRG. It turns out that, although there was a period of rapid convergence, it was relatively short.

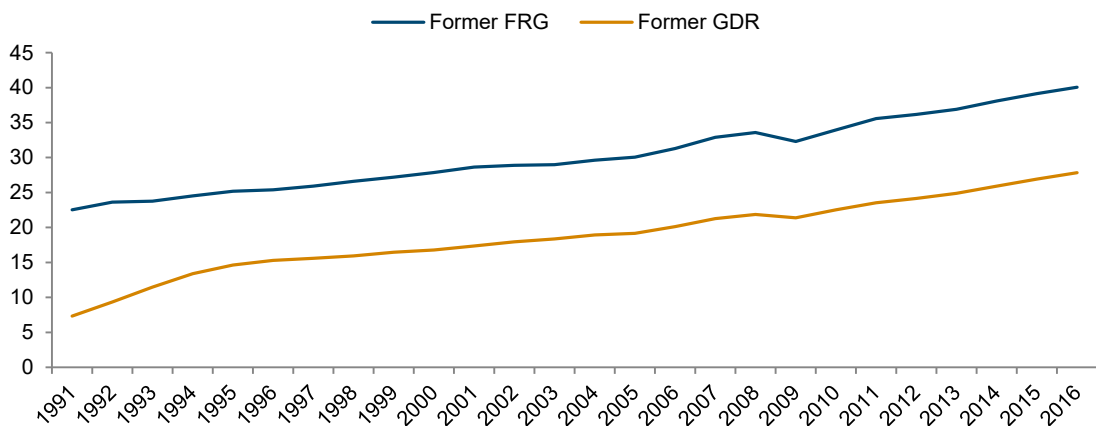
Figure 1 Growth rates of per capita nominal GDP, %, former FRG and former GDR, 1992–2016



Source: Own calculations based on data from the German Statistical Office and Eurostat.

As can be seen from Figure 1, faster relative growth in the former GDR's nominal per capita GDP ended in 1996. Moreover, part of the initially rapid growth in the former GDR may reflect an upward adjustment in prices (artificially suppressed pre-1991), rather than in real output. Since 1997, the growth rates for both parts of Germany have been close to one another (average growth was about 0.7 percentage points higher in the former GDR than in the former FRG over the period). It needs to be added that per capita GDP growth in the former GDR came at the same time as a falling population – so segments of the population were responding to their relative situation and to opportunity by moving. In the former FRG, both output and population rose over the period in question.

Figure 2 Per capita nominal GDP (EUR 000s), former FRG and former GDR, 1991-2016



Source: Own calculations based on data from the German Statistical Office and Eurostat.

Most significantly, German unification has so far left absolute per capita income differentials roughly unchanged (Figure 2). Of course, in relative terms there has been convergence (thanks to the already noted growth rate differential of about 0.7 percentage points per annum

in the former GDR's favour). However, if per capita income in the former GDR continues to rise at about 3.05% per year, against the 2.32% for the former FRG (the average rates between 1997 and 2016), it will take over 50 years for complete catch-up.

Clearly, there are differences between the situation of the GDR and that of CE countries. However, it can still be meaningful to ask, what lessons for CESEE can be drawn from the German experience? First, it appears that huge transfers from the West – even if coupled with complete unification (institutional, as well as ‘real’) – are not necessarily a guarantee of rapid convergence. The period of rapid convergence can come to a halt or the rate decline (in the former GDR this occurred 1997). Second, one wonders whether it was not the *complete* unification that was ultimately responsible for the failure of the German experiment. Arguably, a less radical real integration (a better managed approach to free trade, capital and labour flows, and monetary and economic policy unification) may have produced better end results. For example, though the transition in the GDR was not a free-for-all, giving GDR firms adequate protection for some time could have helped those firms to adapt to market conditions, restructure and develop ‘organically’, rather than end up as pieces of scrap. If more of the GDR's production capacities had been saved from liquidation, then more of the local labour force may have stayed in the East – instead of swelling the army of the permanently unemployed, or being induced to migrate to the West.

CE countries have been steadily integrating into the EU's institutional, monetary, fiscal and ‘real’ frameworks (the latter through large-scale trade and high foreign direct investment penetration by the West). In addition, most CE countries have drawn significant (in relation to their GDP) funds ‘from Brussels’ – and stand ready to receive further cash flows in the future. Do these facts justify the expectation that CE countries will continue their accelerated economic convergence in the future? In the light of the GDR experience, such an expectation may be frustrated. For CE countries – as for any middle-income country – successful catch-up seems to require far more consideration of the political economy and institutional management than seems to be the case at present where there is more of a passive integration into the existing economic order¹.

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SUGGESTED CITATION:

Leon Podkaminer, “A tale of two Germanies. Any lessons for Central Europe? A note”, *real-world economics review*, issue no. 86, 10 December 2018, pp. 149-151, <http://www.paecon.net/PAERReview/issue86/Podkaminer86.pdf>

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¹ After only 11 years of separation, Saarland (under French administration after World War II) was returned to the FRG. Its initial reintegration took almost three years (1956–1959), during which time the Deutschmark was *not* the legal tender there, a customs border with the FRG was maintained and the freedom of foreigners (i.e. ‘Federal Germans’) to settle and acquire assets was restricted. By contrast, the GDR was annexed overnight and the GDR economy was subject to immediate takeover by the ‘West Germans’.

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