Basic income & full output policy

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Abstract:

This essay challenges the macroeconomic policy target of full employment, and explores its limitations in responding to crisis, and in maximizing performance during normal times. Full output for consumers is posited as a preferable long-term objective for monetary and fiscal policy.

Calibrated Basic Income (CBI)[1] is proposed as the centerpiece of a full output policy suite. CBI would allow monetary and/or fiscal authorities to directly lift aggregate consumer spending to match whatever level of production can be sustained by the economy's real capacity. If capacity grows, the basic income rises to activate it. If capacity shrinks, the basic income may lower, to prevent inflation and preserve real purchasing power.

During a crisis, full employment policymakers are typically expected to increase benefits, subsidies, and stimulus to make up for the loss of jobs and wages. Full output policymakers, by contrast, must decrease spending, because the pre-crisis economy will already have been operating at maximum performance. Supplementary hibernation policy can endeavor to prevent or minimize this loss of consumer purchasing power, and allow policymakers to select which portions of the economy they wish to remain adaptive to exogenous supply & demand shocks, and which portions they wish to preserve in their pre-crisis state.

CBI can be thought of as a fiscal alternative to existing monetary policy. It would enhance traditional inflation rate targeting, while delivering the highest achievable standard of living for consumers-- throughout a crisis, and indefinitely. The only disadvantage of such a policy is that it requires a reexamination of conventional monetary/fiscal objectives.

[1] A novel policy concept by theorist Alex Howlett which allows for full output targeting.

CONTENTS:

This essay is written with the perspective of government or central bank policymakers in mind, and presents them a strategy for better operating their institutions as base money issuers. A base money issuer need not be a government or central bank. Aspirational currency issuers would ultimately face similar questions about what objectives ought to guide their issuance of currency.

I. Policy overview

Paradigm comparison

FULL EMPLOYMENT		------>	FULL OUTPUT	
TARGETS			**TARGETS**	
1. inflation rate	Price stability; ~2% inflation in CPI.		1. inflation rate	Price stability; ~2% inflation in CPI.
2. employment	Full employment; maximum level of employment allowed by price stability.		2. output	Full output; maximum level of consumer purchases allowed by price stability.
INSTRUMENTS			**INSTRUMENTS**	
1. monetary policy • open market operations 2. fiscal policy • state spending	New money enters the economy in the form of loans to businesses, at rates determined by central bank policy. Cheaper loans sustain less profitable businesses, who hire more workers. The economy is grown by expanding the labor market. Consumer income is dependent on wage growth.		1. fiscal policy • basic income • state spending 2. monetary policy • open market operations	New money is spent into the economy by consumers. Basic income serves as both an **instrument** and as a **target**. Fiscal policy takes on a greater share of fiscal space; monetary policy is tightened, to assume a secondary role. Profitable businesses are grown via consumer spending, not cheaper debt.
INDICATORS			**INDICATORS**	
1. productivity			1. productivity	
2. output			2. interest rates	
3. interest rates			3. employment	Reduces to optimal level for best output.
4. wages	Nominally an indicator, but chronically inadequate to bring consumer demand to its highest sustainable level.		4. wages	No longer a relevant macro indicator. Markets can determine wages at whatever level is requried to attract workers.

Policy suite

FULL OUTPUT	HIBERNATION
• **CALIBRATED BASIC INCOME** consumer subsidy calibrated to productive capacity; erases poverty, achieves full output • **MONETARY POLICY** credit stimulus tightened around the CBI; allows for a higher & more stable basic income • **PRODUCTION SUBSIDIES** incentivize use of particular resources • **TAXES** conserve use of particular resources; steer expanded consumption within ecological or resource constraints	• **COLD CAPACITY** surplus factories built prior to crisis; prepares essential supply for future strain • **QUOTAS** per-customer item restrictions to mitigate panic-buying and prevent shortages • **HIBERNATION SUBSIDIES** fixed cost subsidies to preserve non-essential businesses during crisis • **BOND DRIVES** reward voluntary savings, to preserve higher UBI spending for those who need it

1. FULL OUTPUT OVERVIEW

Policymakers under a full output mandate have the simple, practical target of raising the basic income as high as possible, to ensure maximum-sustainable distribution of whatever the economy has the capacity to produce.

A productive and growing economy continually generates more fiscal space[2] tomorrow than it has today; full output is a moving target. Nevertheless, at any given point in time, there is a finite amount of spending the economy can sustain without exceeding constraints. Full output policy simply ensures we are not wasting any economic potential, by automatically converting otherwise unused fiscal space directly into consumer spending. We use a variable basic income instrument to **calibrate** aggregate consumer spending to aggregate production, in order to maintain stability in the general price level and preserve real purchasing power.[3]

Monetary policy retains its traditional functions during the transition to a full output paradigm. So long as monetary authorities observe their existing mandate for stable prices, a fiscal mandate to increase basic income to its maximum calibration point will trigger proportionate monetary tightening, to make room for the increased fiscal support.

Under full output, it will generally be desirable to trade monetary (credit) stimulus for a higher basic income. Current monetary policy uses cheaper debt to ease selection pressures on businesses, to create more wage-payers and achieve higher employment. Consumers, for their part, are benefited only indirectly via wages. This is a problem, because the total spending allowed by aggregate wages will always be insufficient to run the economy at its full capacity.

Full output monetary & fiscal policy would tighten selection pressures on businesses, but simultaneously make available more consumer spending for businesses to capitalize on. This ensures a more productive, more profitable, less indebted private sector, by maxing out the most important variable: **consumer incomes**. Wages & employment can become passive indicators, and do not have to be considered targets for macro policymakers. They can rise or fall to whatever level markets require to maintain best output, and a stable inflation rate.

The basic income calibration will then serve as a more optimal reference point when judging the merits of tax or regulatory policy. Efficient taxes will allow the calibration point of the basic income to increase. Inefficient taxes will have the opposite effect.

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[2] “Fiscal space” here refers to all spending potential available to all actors in an economy. Fiscal space does not have to be defined strictly in reference to a government.

[3] This model presumes an Income Theory of Money (ITM) view of the causes of inflation, as opposed to a Quantity Theory of Money view. In practice, central banks already target aggregate spending flows, not aggregate quantities of money, which lends credence to the ITM view and to the full output proposal.

2. HIBERNATION OVERVIEW

Full output policymakers will always have to weigh the trade-off between a higher basic income, and all other public sector spending. These considerations become more acute when preparing for or responding to exogenous shocks to the economy such as an exposure-risk crisis. How much prosperity must we deny consumers in the present, to prepare for possible future emergencies?

While a CBI maximizes economic performance for consumers around present conditions, sudden demand spikes and supply shocks caused by crisis may force responsible policymakers to reduce the basic income in order to maintain calibration. Discretionary “hibernation” policy can be used prior to and during a crisis, to ameliorate this problem. Possible strategies include **A)** calibrating the basic income below its maximum potential in normal times, to reduce shocks, **B)** targeting bond drives to the general population, to encourage voluntary savings (preserving more basic income for those who need it), and **C)** using fiscal policy to invest ahead of time in cold capacity*,* i.e. surplus production capability.

Cold capacity would see investment in idle factories, maintained and periodically updated, but kept dormant until needed. When a crisis occurs, the relevant cold sector is activated into full production. The goods in question (e.g. emergency supplies) may then either be distributed directly by the state, or supplement existing stocks of private sector firms-- whichever is deemed more expedient. In practical effect, cold capacity sacrifices some level of basic income in normal times, to prevent a more dramatic reduction of basic income during a crisis.

Alongside CBI, the sparing use of bond drives, subsidies, quotas, cold capacity, and resource-conserving taxation should be sufficient to guide a crisis-stricken economy into an optimal state of temporary hibernation. A properly hibernated economy-- although experiencing a reduced level and composition of output-- is still delivering to every consumer the maximum benefit possible, within whatever constraints monetary authorities have pledged to observe.

Today, many Universal Basic Income (UBI) advocates promote a fixed level of UBI, sufficient to afford poor citizens an estimation of basic needs-- essentially, an alternative to welfare. Full output rather conceives of basic income as an important, missing piece of economic infrastructure, which allows policymakers to bring consumer spending to its optimal level. Like wages, profits, businesses, and monetary policy, basic income is a fundamental part of the emergent phenomenon of economy, one which we simply have yet to implement.

From this perspective, an arbitrarily low basic income provides no economic advantages to businesses, consumers, workers, or governments, irrespective of other political or social goals. It does not make sense to operate an economy below its productive potential.

II. Calibration

3. CALIBRATION BLUEPRINT

Conceptually, we can divide an economy's calibration into four categories of spending, which necessarily compete for shares of total fiscal space. Prior to calibration being achieved, any policy spending lever may be expanded at will. Post-calibration, any increase in discretionary policy automatically comes at the cost of a higher basic income.

- **BASIC INCOME**
  - Converts new fiscal space directly into consumer spending.
  - Funds the market; ensures consumers have sufficient income to purchase the private sector's full output.

- **DISCRETIONARY FISCAL POLICY**
  - Diverts fiscal space towards government (public sector) purposes.
  - Used to solve any problems which a fully funded market cannot.
  - Reduces the amount of basic income we can afford.

- **MONETARY POLICY**
  - Affects total rate & quantity of private sector lending.
  - Leaves a "cushion" in which central bank interest rate adjustments can still be used to maintain inflation targets across normal market fluctuations.
  - Allows for a more stable, reliably increasing basic income for consumers than had the UBI been calibrated directly to capacity.

- **RESERVE**
  - Deliberately unused capacity; created by lowering the natural rate of basic income, via taxation of whatever resources we wish to conserve.
  - Expanded if necessary to reduce consumption directly.

There are interesting econometric questions to be debated here, such as the optimal size of a monetary cushion, and under what circumstances a capacity reserve might have to be expanded. But for the purposes of full output, the basic income must be the primary calibration target-- meaning, the automatic destination of new fiscal space, as new fiscal space is generated in the normal course of economic development.[4]

[4] Every efficient business added to an economy adds more fiscal space, by creating new capacity for spending flows to activate. This is true independent of tax policy. Some taxes increase fiscal space by motivating productive behavior; many taxes can *decrease* fiscal space by constraining it. This important point is overlooked by any who conceive of taxes as funding government spending. Rather, tax sets boundaries on the expansion of fiscal space. Fiscal space is created by for-profit production.

4. MONETARY vs. FISCAL CALIBRATION

To understand how funding a calibrated basic income is possible, we need only understand how the contemporary monetary system functions, and how policymakers already solve the problem of supplying markets with the money they require. Monetary policy is already a system for calibrating the flow of new money into an economy (via the stimulation of credit), and a calibrated basic income would in many ways be merely a fiscal equivalent.

For economies to prosper, they require a standard of value for markets to set prices in. That standard is money.[5] Currency represents this standard. As more and more goods are produced in an economy to be valued, more and more currency is required for those goods to be purchased. Accordingly, all economies are driven by the issuance of new currency. So long as the stability of an exogenous pricing standard is successfully maintained, the issuance of new currency remains equivalent with the issuance of new money.

Currency-issuing institutions include banks, other private lending firms, central banks, and the government. These institutions leverage their credit into the issuance of new debts which markets find reliable enough to use as money. Private firms create money for profit; they loan new money into the economy for interest payments.[6] Governments create money as a public service; they spend new money into the economy.[7] [8]

Currency issuers are an emergent feature of markets. Markets require a constant flow of new money, to generate a level of consumer spending appropriate to what businesses can respond to with production of goods. Because profitable businesses must collect more revenue from consumers than they pay out to workers as wages, money in general does *not* tend to circulate back to consumers via an efficient labor market.[9] Accordingly, new money must be constantly created and somehow distributed to consumers, so consumers can continue to spend at

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[5] Money is a standard of value (Hicks, 1989). This definition satisfactorily explains the role of money in an economy. Other common definitions (medium of exchange, storer of value, unit of account), are properties shared by other assets, and fail to capture money's unique and most important function.

[6] *"The amount of money that a bank can create is not constrained by their deposit taking activities; the act of bank lending creates new purchasing power that did not previously exist."* (Bank of England, 2014)

[7] *"If the Treasury issues too much debt for the market to bear, the Fed buys up the excess. Deficit spending is therefore ultimately equivalent to printing money."* (Howlett, 2018)

[8] In other words, government spending nominally funded by borrowing expands intragovernmental balance sheets simultaneous to the appearance of new money in the private sector. It is identical to private money creation, save for the absence of demanded interest.

[9] *"Our intuition tells us that money perpetually circulates through the economy... but the economy is not a circuit. Money flows in a direction. It moves from consumers to producers and it ultimately winds up in the financial sector... Money flows away from consumers while goods and services flow in the opposite direction."* (Howlett, 2019)

businesses, and a steady flow of goods production may be maintained. Today, governments and central banks accomplish this by attempting to maximize private sector employment, but as we will examine, this is not the only option available to policymakers.

The constraint on all money creation is currency's real purchasing power, which is measured through changes in a Consumer Price Index (CPI). Maintaining this standard price level is a function not of the total quantity of new money created-- but of the total level of spending across the economy. How many real goods are available to be claimed by spending in the present moment?[10] If flows of spending exceed the capacity of businesses to respond with more goods, prices will rise (inflation). If spending undershoots the capacity of businesses, prices will fall (deflation). When these conditions occur not for specific goods, but across the entire economy in tandem, this signals not real changes in the value of goods, but a failure of monetary policy; the issuance of currency has not been calibrated appropriately, and can no longer be relied upon to represent an exogenous pricing standard. Markets are struggling to use the given currency *as money,* and will eventually have to find something else to set prices in.

Over time, institutions emerge which experience pressures to try to solve this problem optimally. These become our currency-managing institutions.[11] While any individual actor in an economy enjoys great freedom to spend or lend as they choose, the market's need for a stable currency eventually demands that total spending and total lending become policy decisions.

Today, our primary currency managers are central banks. They control the rate at which new money is created across the economy, in order to maintain low and stable inflation.[12] By adjusting interest rates on government bonds (monetary policy), they alter how profitable it is for private firms to lend to the government, compared to other private firms. Higher interest rates cause scarcer, more expensive debt (monetary tightening), and lower interest rates cause more abundant, cheaper debt (monetary easing). With these policy levers, central banks control the total level of lending in the economy, and with it, the total rate of money creation. This is an indirect way of affecting their true target: not total quantities of money, but aggregate current money-spending, by all firms and consumers.[13]

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[10] "*The income theory of money explains how nominal prices are formed by interaction of nominal expenditures streams with real streams of goods sold.*" (Menšík, 2015) By emphasizing spending flows vs. production flows over total monetary quantities, ITM provides a compelling theory of inflation to explain how central banks achieve general price stability alongside ever-increasing total quantities of money.

[11] See Money and Banking (Mehrling, 2009) for a model of the emergence of hybrid private/public incentives on currency-issuing firms. As their debts ascend the hierarchy of money & credit in the economy, these firms consequently inherit a de facto obligation to manage the currency.

[12] *"Monetary policy is the ultimate limit on money creation. [Central banks] aim to make sure the amount of money creation in the economy is consistent with low and stable inflation."* (Bank of England, 2014)

[13] "*Changes in the money supply may contain valuable information about spending and inflationary pressure in the economy. Since money is essential for buying goods and services, it is likely to contain* ***corroborative information*** *about the* ***current*** *level of nominal spending in the economy."* (Bank of England, 2014)

If the government decides to spend new money into the economy for a public purpose, this obviously may affect the total level of spending which may occur. Central banks use monetary policy to compensate for this, just as they compensate for the spending behavior of all other actors in the market. If government spending adds inflationary pressure, central banks will tighten private lending, to compensate for that pressure. In the absence of government spending, central banks will allow more private lending, to try to bring the economy to its spending limits, as allowed by inflation targets.

By political tradition, central banks are restricted to lending and interest rate adjustments (monetary policy). Whereas only the government may spend new money directly into the economy (fiscal policy). The full output proposal makes the case that a monetary calibration, despite its success in managing inflation, brings with it chronic inefficiencies in activating output. And that a fiscal calibration could manage inflation just as well, while unlocking capacities of an economy that are unreachable by credit stimulus.

Switching from a monetary to a fiscal calibration does not change the fundamental principles on which the system operates; same as before, new money is being issued into the economy, at optimal rates, to try to balance consumer spending with goods production. Basic income changes only the entrance point of new money: instead of entering the economy through borrowing businesses, new money is spent into the economy directly by consumers.

The existing monetary and fiscal arrangement is already capable of handling this transition smoothly. Increases in basic income spending by a fiscal authority will be met by central bank monetary tightening, to maintain inflation targets. The policy would be in full accordance with existing price stability mandates, though it will not-- and need not-- be consistent with a mandate for full employment.

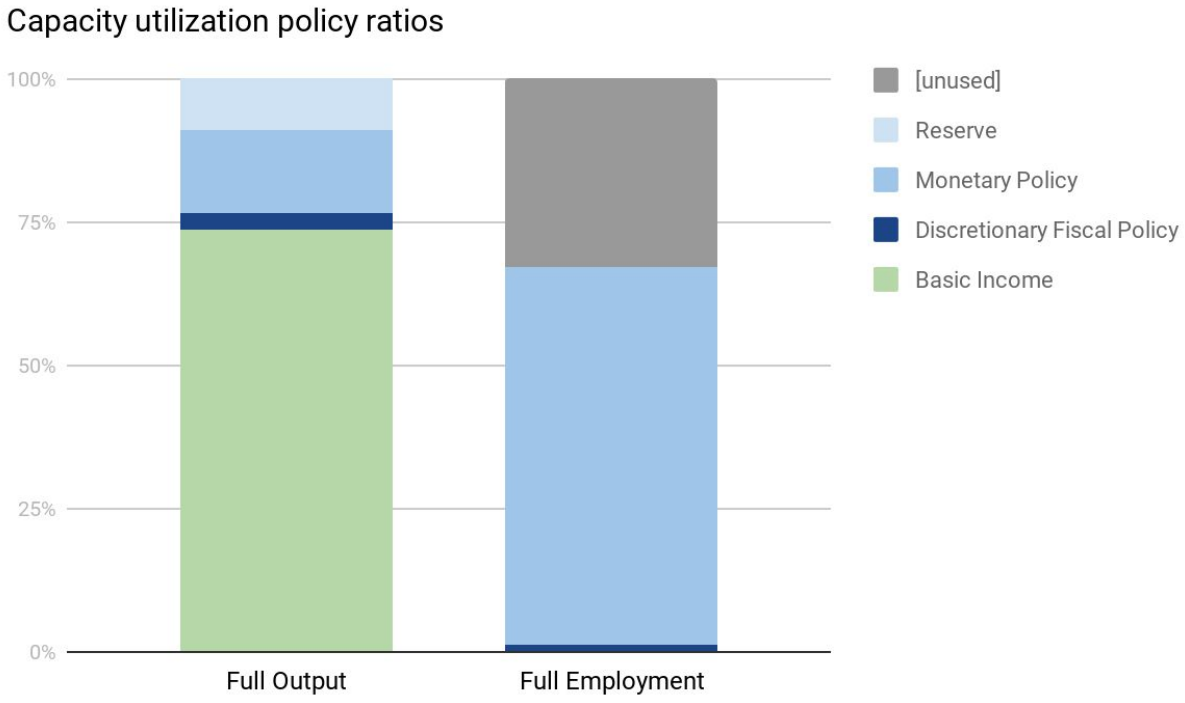
To sum up. There are only two things necessary to fund a basic income: untapped productive capacity of the economy (the real ability of businesses to produce more goods than at present), combined with sound monetary policy to manage the inflation rate. Until we reach the limits of monetary tightening, we will know we can afford a higher basic income. Upon reaching those limits, we will know the basic income has been calibrated to capacity.

Basic income will then be performing the role which monetary policy already performs today: creating money at a rate consistent with low and stable inflation. The only difference is that instead of maximizing spending through bank loans and wages, we will be maximizing consumer spending directly.

5. CAPACITY UTILIZATION LIMITS

Monetary policy dominates the contemporary global economy's supply of money. The vast majority of our money is created in the private sector, spurred by monetary easing. Government expenditures represent a vanishingly small percentage of the total.[14] Post-calibration, basic income will become the normal way new money enters the economy. The destination of money will remain the same: it will be collected by firms, in exchange for goods. But along the way, we will be activating different production potentials (namely, consumer goods production) which sit idle under the current paradigm.

Capacity-potential responds to policy goals and current flows of money. It is not something that can be quantified empirically from within a different framework. Below is a rough impression of what consumer capacity utilization may look like under full output, compared to full employment:



Since we rely on the inflation rate and monetary policy itself as indicators of real constraints, it is impossible to say precisely in advance how much consumer spending room is available in a non-calibrated economy. But we know this spending room exists; the natural limits on monetary policy (namely, markets' finite willingness to extend credit) and the natural limits on discretionary

[14] *"97% of the money in circulation... comprises of credit money that has been created by banks."* (Ryan-Collins, et al., 2011). And also by shadow-banks. Modern economies require enormous flows of new money, and a great variety of firms can make a profit fulfilling this role, if the government chooses not to. Though private lenders pursue their own profit independently, collectively, their total production of money is entirely determined by the central bank.

government spending (namely, politics) necessarily create a consumer capacity blindspot that current policy is unable to reach.

Though monetary policy enjoys control over the total *rate* of private money creation, the distribution of that money is constrained by firm determinations of who is credit-worthy and who is not. Credit stimulus can only stimulate those actors who may reasonably be expected to take on more debt, and it is well understood that excessive private debt, poverty, and loss of wages can dry up availability and demand for credit in many pockets of the economy, independent of real limits on total spending.[15]

Monetary easing also tends to deliver cheaper debt and more purchasing power to firms and people who already have money. This results in a top-heavy distribution of purchasing power, and lowers the inflationary ceiling on policy, by creating a steeper average demand curve.[16] Those on the lower end of the income distribution lack the purchasing power necessary to flatten this curve and bring down average prices. Essentially, the economy is optimizing for a wealthier average consumer, while many possible customers are left out entirely.

Fiscal policy theoretically has no such constraint. Though many consumers may not be in a position to take on more debt, they are always in a position to spend more *money*. In the current paradigm, policymakers do exploit fiscal policy's advantages with counter-cyclical policy, intended to boost spending during recessions. However, the common belief that these infusions must be temporary, coupled with disagreement between politicians over *how* to spend, renders discretionary fiscal policy too meager and infrequent to be adequate as a means of providing markets with a normal level of money and spending.

Furthermore, spending that is conditional upon the expansion of government programs adds resource-use burdens on the private sector which consumer stimulus does not. There are hard efficiency limits introduced when viewing the government exclusively as a "creator of programs," and not as an issuer of currency for markets. The resulting inadequacy of the government as a base money issuer has effectively forced the private financial sector to work overtime as a broad money issuer to meet the economy's demand for spending.

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[15] Monetary stimulus can become "pushing on a string" during recessions for this reason; it is easy to rein in inflationary pressure with monetary tightening, but it is not so easy to spur additional spending with monetary easing in the face of deflationary concerns. Money will always beat credit in that respect.

[16] When a good's price represents a smaller percentage of a consumer's total income, price becomes more inelastic (Frank, 2008). The rich can be made to pay more for ordinary goods.

Monetary easing funnels additional purchasing power towards the top end of the income distribution. The larger this top end grows, the more profitable it becomes for the average producer to sell goods at higher prices and lower quantities, driving up the average cost of goods in the economy. Basic income, by contrast, increases purchasing power *across* the entire economy, creating not only higher purchasing power, but a higher total quantity of customers who can express it. This will lead to a shallower average demand curve. To maximize profit, the average producer will have to produce at higher quantities and lower price (Howlett, 2020).

6. CREDIT STABILITY LIMITS

Monetary expansion not only has trouble distributing purchasing power; it creates problems by enlarging the total accumulations of private debt. When private firms create broad money for profit, by loaning it into existence, they can only do so by multiplying debt obligations between private sector actors. When firm A loans new money to firm B, it may be collected as straight money and profit by actor C, but leaves behind a residue of private debt between A & B.

This expansion of private debt itself is not a problem. The problem is that it does not scale well, when manipulated as a policy lever. If private finance lends only at a reasonable and responsible rate-- to ensure interest on debts is always reliably collected-- we end up with insufficient total spending in the economy; but if we use monetary easing to relax the constraints on business credit, spurring growth, we create dependencies of businesses and wages on long-term credit bubbles, which can only be stretched so far. When over-leveraged firms eventually close, the economy loses not only their *unprofitable* production-- which we could afford to lose-- but also those firms' wages to workers. As consumers, these workers have now lost their entire normal source of income. This represents lost customers to otherwise profitable businesses elsewhere in the economy. And *those* firms may now also close, triggering a feedback loop of scarcity of spending.

This is the current mechanism of what we call recessions: whenever the economy removes *unnecessary* firms (which is only natural), consumers lose *necessary* incomes. This built-in tendency towards recession is known as "the business cycle:" a recurring series of booms and busts, as private debt is stretched repeatedly to its breaking points over history. It is an unintentional function of the current design of the monetary system.

Many economists have attempted to find palliatives to this cycle. Most assume it is somehow a natural or inevitable feature of markets that requires corrective measures. However, calibrated basic income ends the business cycle, by addressing its causes.[17] We will no longer need to expect regular credit crashes, if we no longer use expansionary credit as our primary policy tool-- instead, we can grow businesses with profit from consumer spending, not credit and private debt.[18]

[17] This prediction originates with Consumer Monetary Theory (CMT) (Howlett, 2020).

[18] Summarized in Basic income vs. debt (Van Gorder, 2020) [video excerpt]. See CMT commentary on Minsky (Howlett, 2020) for more insight into this claim.

7. SOLVING THE PROBLEM

Using basic income to solve these problems does not add a new funding burden on an economy or government. It is simply a more efficient alternative to existing market-funding mechanisms. If implemented by a federal government, basic income would begin to shift the balance of total money supply from broad money towards base money. As far as price stability and capacity limits are concerned, there is no special difference between base money and broad money. The economy *can* function on the indefinite expansion of broad money, as it has been, or it could function mostly on base money. The only relevant difference is demanded interest. The economy is agnostic on who originates its money; it cares about how, and how often money is originated.

Diagnosing lack of consumer spending as a problem in and of itself allows us to differentiate between a *real capacity crisis* (such as might be caused by an epidemic), and a *monetary crisis* (such as the 2008 global recession). The latter is possible only as a consequence of chronic fiscal miscalibration. The current COVID-19 crisis contains elements of both. Following a fiscal calibration, any remaining recession will reflect only real, direct hits to capacity or productivity. An investment asset bubble popping may be cause for some disappointment on Wall Street, but will no longer contaminate the consumer goods economy, which will now have its own, dedicated money source.

Basic income is, in this sense, a fiscal policy through which governments may turn money-creation into a non-profit, public service for markets, if they so choose, relieving the private financial sector of this burden, and motivating businesses and investors to focus more on production of real goods and services, as opposed to the manufacture of money-- a simple task which hardly justifies its current share of the market. In doing so, we replace the volatility of private debt expansion with public debt expansion, which has a much more manageable constraint: the inflation rate, stability of which is ensured by the calibration process.

Basic income works well as a de-politicized, *non-discretionary* fiscal policy, because an equal amount of money automatically goes to every person. By avoiding the government's typical concerns over who or which faction *deserves* more money, and under what conditions, basic income simply allows the economy as a whole to have whatever level of fiscal support results in optimal capacity utilization. Very analogous to contemporary monetary policy, CBI is a macroeconomic policy tool which must be able to react freely to political decisions-- not be determined by them. This impartial flexibility of CBI is crucial to modulate total spending, and maintain real purchasing power.

8. TRANSITION

The basic income is first introduced at any arbitrary, low amount, and then gradually raised on a periodic basis while indicators are tracked. After calibration is reached, it is maintained continuously by whatever institution receives the full output mandate. First introduction of basic income requires no cutback of discretionary policy; it simply uses up space which is presently being wasted. It is only after we reach the limits formed by **current** net policy effects that central bankers must use monetary tightening, to make room for additional basic income. From that point on, we are trading monetary for fiscal stimulus until calibration is achieved; credit becomes more expensive, but consumer spending becomes more plentiful.

This will affect the landscape of the private sector. Many businesses which sustain themselves only on cheap debt may find themselves falling on hard times. However, businesses which make income selling goods or services to consumers will find themselves in a very attractive environment, having many more potential customers. It will be harder to keep a less profitable business afloat on debt for long periods of time, but it will be easier to make profit by selling goods that consumers actually want to buy.

Private finance will still serve an important role under full output, in facilitating supply-side investment. We simply will no longer be relying on it as the *primary* means through which businesses are grown. We can instead grow more of the economy on sustainable consumer spending, and receive a clearer picture of which businesses are most productive and efficient, in the eyes of those who matter most: the consumers.

The labor market will undergo a similar transformation. Contemporary policy has restricted the economy to whatever level of output is allowed by the full employment target; whereas full output policy will enable markets to freely discover whatever level of labor full output happens to require. We will no longer need to rely on jobs as wage-delivery systems for consumers; we can have only the jobs and wages which we need to achieve continuously better output over time.

An economy's *real* demand for labor will always be reflected in the achievable calibration point; a shortage of output-constraining labor will lower the sustainable basic income, while increases in productivity or automation will increase the basic income. Today's labor market does not reflect real demand for labor, but policymakers' commitment to full employment, and the population's desperation for income sources.[19]

Calibration can be overseen by a branch of the government, by a central bank, or by a new, semi-independent fiscal authority. Different nations may choose different paths to establish a new monetary / fiscal tradition. What matters is that after elected officials deliver a mandate for

[19] High output with low formal employment could very well have been achieved prior to or during the industrial revolution. However, policymakers have lacked any tool with which to discover this.

basic income, there is no reason to allow the amount of basic income to be a political decision; it should be an econometric calculation, continually refined, and overseen by the type of institutions we already rely on to guard us from hyperinflation or deflationary spirals.

9. OUTPUT vs. ACCESS

There is some debate to be had on whether “full output” is the most appropriate name for this paradigm. Waste output or unnecessary output is, of course, undesirable. We should clarify that economic output here refers to *output for consumers.* Things which people actually buy. Output from one business to another is merely a means to this end. If we arrange the entire output of the economy into a hierarchy with consumer output at the top, we may consider firm-to-firm output as inputs of the larger process. The goal of economic policy should never be to maximize inputs, or to maximize firm purchasing power for its own sake, but to maximize **output for end consumers**. Using basic income as the primary policy instrument answers this concern. It ensures consumers themselves are in the driver’s seat of selecting the economy’s production, while receiving **full access** to its output.

Policymakers do not need to go out of their way to stimulate consumer spending or motivate consumers to buy more than they otherwise would; increasing spending-potential is what matters for people’s ability to pursue their preferences in the market.

However, it is also true that income is meaningless without goods to exchange it for. Real purchasing power is dependent upon considerations for production and output. We want to calibrate consumer incomes in such a way that the economy produces more and more things people want to buy over time, not less. A decreasing basic income may reflect a necessary response to temporary setbacks to the economy, but it cannot be viewed as normal policy. The purpose of the economy is to make people less poor over time, by increasing their access to greater quantities, varieties, and quality of goods.

By focusing the monetary system on consumer purchasing power and reducing human poverty directly, calibrated basic income renders full output synonymous with full distribution. If we define poverty not as scarcity of real resources (which would make a higher basic income impossible), but simply scarcity of money to activate otherwise available production, then calibration erases all poverty, definitionally.

Full output, full distribution, and full access are all reasonable ways to describe this objective.

III. Full employment

10. A MORE DIFFICULT OBJECTIVE

Price stability is not the only mandate held by central banks today. A full employment mandate is considered by many the next most important target. Conventional economic theory largely begins with the assumption that full employment is a desirable macro goal. Most heterodox theories share this assumption, and differ mainly over how to achieve it.

Full employment is commonly defined as the maximum level of employment allowed by inflation or other constraints, or as a state of the economy in which everyone who wants a job is able to find one.[20] This objective formally and informally shapes global monetary policy, fiscal policy, and trade policy. It also undergirds our popular political rhetoric; politicians and institutions are typically praised when employment rises, and criticized when employment falls.

Like full output, full employment is not a final state which can be achieved, but a moving target, which must be continually sought after with policy. Monetary policy is not only used to control inflation as previously discussed; in the current paradigm, it is also the primary instrument for chasing full employment.

Monetary easing makes private debt cheaper and more abundant. Cheaper debt has a predictable effect on the economy: it allows less profitable businesses to exist longer, and hire more workers. Lowering interest rates has proved so effective at increasing employment that it has become standard practice for central banks across the world. In addition to traditional open market operations, central banks continually innovate new monetary policy tools, similarly intended to stretch the limits of effective credit stimulus in response to recession. The goal is to find new ways of keeping at-risk businesses afloat, and make it easier for new businesses to get started. This strategy follows logically from the mandate to achieve full employment.

The economy has finite resources; there is only so much fiscal space available at any one time. So it is reasonable to assume that new money should be distributed into the economy in a way that cultivates fiscal space efficiently; to produce more of it over time, rather than less. Does contemporary full employment policy optimally meet these requirements? Are loans to businesses the best way to supply the economy with new money? Is this best for consumers?

The full employment paradigm has four primary, interrelated disadvantages:

- It emphasizes a particular resource *input* (human labor) over the *output* of the production process (goods for purchase).

[20] There are different definitions of full employment. All imply in one way or another a maximum use of available labor resources. Efficient or optimal use is usually taken for granted.

- It does not sufficiently distinguish the quantity of jobs from the efficiency of their production.
- It overemphasizes the role of *workers* (people who work for a boss, for a wage), relative to the broader category of *producers* (anyone who contributes productively to the economy), leaving out the possibility that looser distinctions may increase output.
- It assumes the most important role for people in the economy is to serve as producers (contributors to the economy) as opposed to consumers (beneficiaries of the economy).

Full employment policymakers tend to assume that more jobs is better for the economy than fewer jobs. But jobs themselves do not cultivate fiscal space-- profitable production does. A profitable business creates more avenues for new money to flow into, and in so doing increases the overall inflationary ceiling of the economy. Unprofitable businesses, though they may provide *employment*, use up more value than they provide for purchase; they are a drain on fiscal capacity.

These are not binary categories, but constitute a spectrum of available efficiency. A more efficient / more profitable firm generates more fiscal space than a less efficient one.

When consumers select away certain businesses, by shopping elsewhere, they are providing the economy's only means of sorting productive from unproductive firms. This survival constraint imposed on businesses *by consumers* serves an important function: it ensures that any private firm whose production is unattractive to consumers will eventually close, so its resources may be relinquished to more efficient firms. But in order for consumers to fulfill this selectionary role, they require their share of fiscal space to spend.

When currency managing institutions assume full employment as a target, and relax selection pressures on businesses via credit stimulus, they are directing fiscal space that could have gone towards *greater consumer purchasing* towards *greater employment.* They are making it easier for perennially indebted firms to survive, grow, and hire. These *less* profitable firms and their spending are sustained on fiscal space generated by other, *more* profitable firms. And this is spending that is not being wielded by consumers, to select businesses they prefer. The inevitable result is the growth of many jobs which are, from the perspective of consumers, unnecessary.[21] They exist primarily to pay out wages into the population.

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[21] The longer any business may comfortably sustain itself on debt while consumer spending remains artificially scarce, the longer the market is waiting to learn whether its resource-use is productive or not. Expansionary monetary policy exacerbates this trend; contractionary policy will reverse it.

It is neither possible nor desirable to try to identify which specific jobs are necessary or unnecessary. What matters is recognizing that full employment policy, by definition, expands whatever percentage of the labor market is *less* necessary or *less* efficient. There does exist an appropriate level of monetary stimulus to optimize supply-side private investment... but this level can only be discovered in reference to a consumer-oriented fiscal counterpart.

The purpose of the economy is to produce goods for consumers' benefit. Employment, along with other resources, is a means to this end. If we take this to be generally true, then the only consumer output we should be willing to ***trade*** for employment is when infrastructure or other baseline needs of the economy demand it-- things which consumers don't want to buy, but if we did not have, would cause total output to drop in the long-term, or fail to prevent some exogenous hardship for people. This is precisely why we make public sector jobs immune to consumer selection, despite the risk of efficiency disadvantages.

But in modern economies, by directing the money supply to businesses first and consumers second, policymakers are effectively inflating public sector jobs, disguised as private sector jobs. The "public function" these jobs serve is providing private employment, as a kind of social service. The public demands more jobs, and the government uses policy to create them.[22] The distribution of wages is merely a byproduct of this employment-oriented objective.

However strongly we may valorize work on its own merits, the economic function of *paid* labor (wage labor) is not to keep people busy, but to be used as productively as possible to meet the economic desires of other people. If we insist on higher employment *itself*, for any other reason than a desired output, we are restraining the economy with a normative assumption that it is more important that people are working for wages, or seen to be working for wages, than to better increase or distribute real output of the production process.

Full employment policymakers may assume that employment is itself an ideal or adequate heuristic for output; that these are joined at the hip in some way. But certainly, at the level of the individual business, it is clear that labor and wages are input **costs**, just like any other resource used. Any efficient business will always try to *reduce* its costs, to maximize output & profit. If businesses can produce more products for consumers with less employment, they will. As a heuristic, quantity of employment is more like the opposite of output.

Does this truth about efficiency reverse itself on the macro level? We see no reason to think so. What is true of one business is true of several, or any arbitrarily large number of them: it is always best to maximize output, with the minimum necessary inputs, to whatever degree possible. The difference which emerges on the macro level is a monetary one: the behavior of the economy as a whole is necessarily shaped by the decisions of policymakers and currency-managing institutions. From this view, a full employment monetary paradigm is in a crucial sense backwards; it does not reflect real resource-use considerations.

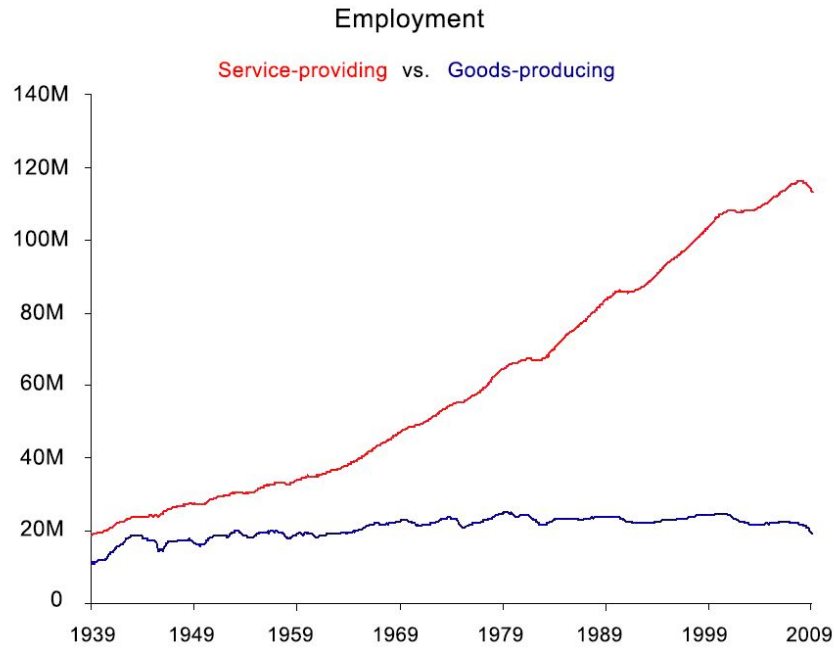
It should not be controversial to suggest that-- assuming it were possible-- we should prefer a richer population with fewer jobs to a poorer population with more jobs. Most people intuitively sense that technological advancement is or ought to be moving us in this direction: towards an

[22] Presumably, what many people *want* is not more jobs, but more money-- if they could have it. Under the full employment paradigm, however, there are heavy pressures to falsify a preference for work, as this becomes the only reliable social strategy to receive money from its current distributors.

automated future, with more production, and less wage labor for people to do. Despite great technological advances in many sectors, however, such predictions seem always just over the horizon.

Unfortunately, these predictions will stay over the horizon indefinitely, with current policy. No matter how efficient technology becomes at reducing labor requirements, formal full employment monetary policy necessarily works as a stronger force in the opposite direction. The attraction of money ensures that if its provision is tied exclusively to labor, more and more people can always be lured into creating and performing unnecessary work, if that is the only way available to acquire money.

Material production in modern economies is already largely automated. Meanwhile, the explicit goal of policy has been to create new jobs, as the old ones are automated away. What kind of new jobs are created? Data from the Bureau of Labor Statistics[23] reveals a clear trend over the past century: total number of jobs in goods-producing employment has not risen at all. Net total job growth of the 20th century has been entirely exclusive to the service industry.



Modern manufacturing and agricultural production simply do not require any serious percentage of the population's constant employment. As a result, the primary effect of full employment is to expand the service industry. Monetary policy generates more and more service jobs, of increasingly dubious social necessity, because the flexibility of what counts as a service is naturally adaptive to automation: when the good being sold is a person's time, there is no limit to the number of ways their time may be monetized. Even if today's traditional service jobs are

[23] Source: U.S. Bureau of Labor Statistics. Graph retrieved from EconompicData & Vox.

automated away, it is possible to invent new services out of behaviors which people previously assumed did not require marketization. This has likely happened many times already. And it may continue, so long as the general population lacks the means to decline such work.

Full employment policy, in this sense, makes automation at scale a technical impossibility. We are distributing money to chase the opposite goal: maximum possible labor. But labor is not a constraining resource on the economy's output, and has not been for some time. The real constraining resource today is scarcity of money in the hands of consumers.

11. FULL EMPLOYMENT AND PANDEMICS

An exposure-risk crisis poses a revealing dilemma for the current paradigm. Policymakers who normally desire employment to be as high as possible are forced to confront a situation where it is only sensible that employment be reduced. Full employment is, in fact, implicitly abandoned whenever sheltering orders are announced, or whenever we divide the economy into "essential" and "non-essential" jobs.

Given this necessary shift away from the previous target, what other measure should we be attempting to maximize instead? This theoretical question has received remarkably little attention during the COVID-19 epidemic, despite dramatic shifts in real policy.

If employment itself were ever truly commensurate with output, then during a pandemic, the economy would simply have to suffer, unassisted, for the duration. Businesses would have to close, and the unemployed would have to go without. Policymakers would sit idle, helpless, and pine for the return of jobs.

But what sizable, sustainable, non-inflationary government fiscal programs empirically reveal is that the opposite is true: any remaining, essential sector of an economy not only *can* withstand, but in fact *requires* new flows of consumer spending, exogenous to its own employment or wages, to remain in operation, let alone to increase output.

This is no less true for the non-essential sector, or the entire economy during normal times. Any economic production always involves a smaller number of producers, serving a larger number of consumers, with an even larger number of goods. To remain in operation, all businesses must continuously collect more money as profit from consumers, than they pay out to workers as wages. To settle the difference, new money has to come from somewhere.[24]

[24] To a business, every customer is a good customer, but labor is always more aggressively selected, to meet the demands of consumers. The flows of money in an economy reflect this fact, and any efficiency gain only amplifies the discrepancy over time. New money flows must be added as economic efficiency increases.

Today's currency-issuing institutions are used to providing this new consumer spending money through jobs and wages, via full employment policy. As elaborated, this is performed to satisfy normative demands which see employment as a socially legitimate source of consumer spending. The economy itself, of course, simply demands more spending-- and it is not picky about where it comes from.

The crisis forces a temporary admission of this fact from policymakers. But fiscal generosity during a capacity crisis is only possible because in normal times we have chosen to sacrifice maximum spending for maximum employment. If consumer spending were truly at its optimal level prior to the onset of a crisis, responsible policymakers would have no choice but to **reduce** consumer spending, to bring it in line with shrinking real production.

Modern economies exist in a paradoxical state, where crisis has become our signal to increase spending-- permission to ignore the purely social labor obligation. In some ways, discretionary policymakers have become addicted to crisis, requiring real or imagined emergencies in order to justify fiscal advances. Calibration allows us to cure this addiction, by normalizing prosperity. A properly functioning monetary system would always issue currency to match real capacity. Upon truly achieving full output, a crisis would be a time for *tightening* belts, not loosening them, as is only natural. This particular point of confusion, in fact, lies at the heart of the debate between austerity advocates / fiscal conservatives, and those in favor of looser purse strings-- each left to make unsubstantiated guesses about how much spending is appropriate, having neither the means nor the measures to bring an economy precisely to its real limits.

The stimulus packages we have seen so far have surely staved off worse dysfunction. But the full employment assumptions they remain attached to keep us from better achieving our full, productive potential. During an employment reduction, traditional monetary policy becomes ineffective at supplying spending: there are simply less jobs and wages available to stimulate with easier credit. Fiscal authorities are left carrying the ball for consumers, but they have difficulty grasping the scale of stimulus central banks routinely perform to keep the "fully employed" economy in operation-- let alone imagine what full output might require.

Consequently, inadequate consumer income has remained the primary cause of economic disturbance seen during the COVD-19 pandemic. This scarcity of consumer spending reflects not the real supply damage done by the crisis, but our normative assumptions about how much money people *deserve* to receive, for labor or lack of it. Resulting policy underestimates the real capacity of the economy.

12. PUBLIC PERCEPTION

Fixation on employment causes visible difficulty for policymakers, journalists, and the public when trying to diagnose the crisis. Economists puzzle over how full employment may be

maintained in essential sectors.[25] Political commentators express alarm over loss of jobs as a critical social problem, as opposed to a sensible result of a sheltering population.[26] The advantages of social distancing are clear, yet many commentators-- rightly concerned with the human costs of prolonged recession-- worry over how we can partially or periodically return to wider *employment*, to rescue the economy.

This framing traps us in a terrible predicament: re-opening non-essential business will preserve wages that might otherwise be lost-- but at the cost of greater exposure risk, and confounding the work of public health professionals. On the other hand, keeping people out of the workforce indefinitely will lead to the drying up of wages and savings, which will surely exacerbate the health crisis. Either choice seems to require the sacrifice of lives and well-being, forcing policymakers to calculate the lesser of two evils.

If we instead imagine full output as our goal, this devil's choice becomes unnecessary. By maintaining consumer incomes-- independent of employment-- we may hibernate the economy indefinitely, by targeting the **maximum-sustainable distribution** of a **reduced composition of output** until it becomes safe again to relax employment restrictions.

This alternative strategy could be sustained over any amount of time, is responsive to changing conditions, and would satisfy both goals: maximum prosperity, with minimum exposure-risk to the public. How many and which jobs we temporarily remove in the interests of public health would be up to policymakers' discretion. But wherever we draw this line, a full output target, coupled with a consumer income instrument, allows the economy to enter a prosperous, uneventful hibernation. From there, supplementary policy may be used to address specific market disturbances.

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[25] Macroeconomic Implications of COVID-19 (Guerrieri, et al., 2020) provides an analysis largely dependent upon considerations for "full employment levels of output"... as opposed to, simply, full output.

[26] Impact of COVID-19 on labor market outcomes (Brookings, 2020) emphasizes just that: "permanent damage to employment relationships and labor force attachment." "Losses of work and income" are discussed together, not separately. "Labor market outcomes" are assumed to be important for society or its demographic constituents.

Predictably, the International Labor Organization describes the pandemic as a "jobs crisis," and that "measures for economic reactivation should follow a job-rich approach, backed by stronger employment policies and institutions…"

It is hardly difficult to find identical takes. But what if our problem is not lack of jobs, but *not enough money* to purchase goods that businesses would be perfectly happy to make a profit producing? Few consider this possibility.

IV. Hibernation

13. HIBERNATION BLUEPRINT

Lacking any basic income at present, we find ourselves in the strange position of being able to dramatically increase prosperity for the entire population, if we choose, even during a historically extreme shock to the economy. Following calibration, this will never be possible again. Real recessions caused by loss of capacity will have to be accompanied by reduced spending, to maintain calibration.

The policies below are tools a government may use to soften these necessary reductions as much as possible. It is worth emphasizing: any such reduction would be in the context of a world quite foreign to our own-- where universal prosperity is the norm, and poverty as previously understood does not exist. We will no longer be worried about wringing fiscal benefits one at a time from an uncooperative monetary system or labor market. Policy will instead be all about protecting what we've achieved, and reining in consumption selectively, when needed.

Below is a list of the specific tools which monetary & fiscal authorities may require for a successful full output hibernation:

PROBLEMS	**SOLUTIONS**
● exposure risk	● social distancing / sheltering ● closure of non-essential business
● lack of income ● poverty / precarity ● deflation	● Calibrated Basic Income (CBI)
● mounting liabilities for temporarily closed businesses	● hibernation subsidies
● insufficient production of essential goods	● cold capacity ● production subsidies
● shortages ● panic buying ● price gouging	● quotas (voluntary & enforced)
● inflation	● calibration ● bond drives
● overconsumption of particular resources	● tax

- **CALIBRATED BASIC INCOME (CBI)**

Discussed at length above. From the point of view of hibernation, the basic income provides an automatically expanding and retracting, non-inflationary financial safety cushion for the entire population. This helps consumers and workers self-isolate or shelter, and ensures everyone has sufficient income to purchase the output of the remaining, essential sector.

During the crisis, the shut-down of the non-essential sector reduces available productive capacity, and with it the inflationary ceiling on basic income policy. However, consumer propensity to spend may also naturally decline during a crisis, as people stay home and have fewer spending opportunities. If the natural reduction in spending is equal to or greater than the hit to capacity, then there is no need for a basic income reduction. However, any sufficiently intense supply shock would eventually force a fiscal authority's hands, via inflationary pressure.

Aggressive use of certain hibernation policies (notably, bond drives) can provide an additional line of defense before this reduction becomes necessary. These counter-inflationary policies can also be used to offset discretionary government spending which may be required by the crisis. Other hibernation policies (notably, subsidies) will add negative pressure against calibration, but may be considered worth the trade-off for other advantages.[27]

Calibration itself is *non-discretionary* and reactive. Hibernation policy is discretionary, affecting the calibration point. Ideal hibernation policy will seek to preserve the highest possible basic income throughout the crisis-- i.e. prevent calibration reaction-- while also meeting the government's public safety objectives. Depending on the nature and severity of the crisis, these may not always be achieved simultaneously.

- **HIBERNATION SUBSIDIES**

With a CBI in place to take care of *people's* costs (consumers, business owners, and workers), hibernation subsidies allow us to extend this courtesy to *businesses,* if policymakers wish to preserve them in their current form.

If non-essential businesses are shut down by the government, they may apply for fixed cost subsidies; the government pays their liabilities directly to their creditors for the duration of the crisis. Eligibility should be prioritized by what forms of business we believe will be most in demand immediately after the crisis.

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[27] Counterbalancing funding concerns under calibration does not revolve around *monetary quantities* but the limits of *spending flows claiming resources.* For this reason, we should never expect quantitative proportionality across trade-offs. For example: a $100M increase in infrastructure spending will not necessarily cause a $100M reduction of total basic income spending. It could be higher or lower. Differences in quantities may contain information about policy's resource-use efficiency.

These subsidies are for inactive, non-essential businesses which will rapidly incur mounting debts when not in operation, due to rents, equipment leases or other fixed costs. Some businesses may have no or very low fixed costs, and for these, hibernation subsidy is rendered unnecessary by the CBI; a calibrated basic income is already the maximum possible subsidy of personal costs, and that includes all workers and business owners. Hibernation subsidies are not intended to "replace wages or profits" but rather to preserve a business' formal hold on property and resources, on the assumption they will use them efficiently later.

As with all supply-side policies, hibernation should be granted selectively. The entire economy cannot be subsidized; we want to preserve some flexibility in markets, so that during a prolonged crisis, closures allow resources to be directed where they are more urgently needed in the essential sector. We also want to preserve motivation for some businesses to alter their products, to meet changing demands during a crisis.[28] State subsidies of non-essential business should therefore not be so aggressive or so easily acquired that they remove motivation for this sort of activity, or adaptability in general. Hibernation is for "the most essential of the non-essential businesses." It is performed in reference to challenges we expect to face upon emerging from hibernation.

We cannot hibernate all businesses. That some businesses will close during an exposure-risk crisis is an inevitability, but a permissible one-- for a business lives or dies only on paper, and may always be reborn. People, not having this luxury, require our first fiscal attention.

While it is important to establish priority of basic income over hibernation subsidy, this does not mean these subsidies will have to be meager. It depends on economic conditions. Subsidized payments to business creditors will not immediately add the same kind of inflationary pressure on the economy as ordinary consumer spending, and there may be much room available here to play with. Nevertheless, fiscal space will never be infinite, and excessive hibernation subsidy would eventually reduce the level of basic income we could otherwise afford.

- **COLD CAPACITY**

During a crisis, particular goods may experience sudden demand spikes far beyond what supply is used to providing. The best time to ensure sufficient production of these goods is *before* the crisis begins. By investing in "cold" factories for things like masks, gowns, and ventilators, the state creates capacity in excess of what is normally demanded, based on predictions modeled with data from past events. Extra production of these items may then be spun-up quickly, in response to a crisis. There are then four basic options the government faces for distribution: **1)** selling them cheap to private firms whose supplies are running short, **2)** providing them

[28] A notable example during the COVID-19 epidemic would be alcoholic beverage producers switching over their production facilities to hand-sanitizer.

free-of-cost to private firms, **3)** providing them free-of-cost to consumers directly **4)** selling them cheap to consumers.[29]

Cold capacity is for whatever consumers won't think to want, until suddenly everyone wants it. We can normally rely on markets to produce high quantities for low costs, but this can only occur as markets adapt to predictable levels of demand. When there are unexpected demand spikes, shortages and high prices will occur until capacity can catch up.

Unlike market actors, the government is not constrained by profitability; it is not accountable to present demands. This is actually a disadvantage of government policy in many scenarios, as judging efficiency becomes a more subjective matter. The best way for the state to use this power responsibly is in the interest of foresight*:* to invest not in what is wanted today, but what we may need tomorrow. Effectively, this constitutes an insurance policy, bought by the government on behalf of markets against rare events that may interrupt their normal operations.

Heavy cold capacity investment will always come at the cost of potential uses those resources might have found in the private sector, and reduces other spending possibilities. Where to draw this line is a decision policymakers will have to wrestle with.

- **PRODUCTION SUBSIDIES**

Cold capacity estimations will never be perfect. The moment the government receives insight that shortages will occur, production subsidies can motivate existing manufacturers of these goods to produce extra supply. Subsidy of existing production is a fast, easy way for the state to redirect resources in the private sector. By making it more profitable for firms to manufacture a particular product, the state is offering a carrot on a stick-- luring businesses on the sidelines into that sector, and pushing private resources in the state's preferred direction.

This saves the state from using the additional resources and spending that would be required by entirely new production or full nationalization. Subsidies are preferable to nationalization because it conserves fiscal space for the state; we spend a little to subsidize in one sector, so we have more room for fully state-funded production in whatever other sector may require total government oversight.

- **QUOTAS**

If subsidies fail, per-customer quotas are a fast, simple, and efficient way to deal with sudden shortages. Quotas can limit the damage done by panic-buying, prevent price-gouging, and buy

[29] This should be decided on a good-by-good basis, based on whatever optimizes distribution to the most people. In the absence of calibration, it is impossible to empirically test optimal distribution. The author suspects the first and third options will often win out.

critical time for businesses to expand production. Quotas are preferable to price controls, because they “flatten the curve” of distribution while allowing prices to remain natural. They do so without unduly penalizing either consumer or producer.

Depending on the nature of the crisis, quotas may initially be left to businesses’ discretion, in the same way governments initially recommend social distancing procedures before harsher enforcement. It is in most businesses’ best interest to keep shelves stocked-- they may simply lack the state’s information about the severity of the crisis, or they may be slow to put quotas in place.

Should voluntary quotas be deemed insufficient, the state can make the quota mandatory, in the traditional method: via threat of fine or other penalty. Note, of course, that enforcing any such penalty uses state resources that could have gone elsewhere. It will usually be cheaper for the state to entice producers into choosing the correct course of action independently, than spending precious time and resources on disciplinary enforcement.

- **BOND DRIVES**

Whenever supply shocks cause drops in capacity, but simultaneously the government wishes to keep spending high (for example, to fund emergency response programs), extreme discipline on consumers might be necessary: taxation, or allowing the basic income to reduce. But one way to avoid the need for harsher discipline is to otherwise encourage the private sector to *voluntarily* reduce spending, for the duration of the crisis.

Bond drives are an extremely powerful tool. The government promises small interest payments to private citizens, in exchange for those citizens placing much larger sums of their own money *outside* the economy (on government balance sheets), where it cannot be spent for a period of time. Tying up the market’s funds in bonds preserves fiscal space, allowing *other* actors in the economy to spend more. This is the same principle that makes all monetary policy possible.

Beyond ordinary monetary policy, the role of bond drives can be expanded in crisis situations, targeting not only investors, but the general public. Historically, war bonds served this purpose. Similar endeavors can be employed during a pandemic or any other macro emergency. The more we encourage people who *don’t* need to spend to save, the more money the government can issue to other people or institutions who *do* desperately need to spend. As far as inflationary constraints are concerned, the money which piles up in savings or in government financial instruments doesn’t exist. The money that matters is the money being spent at price-setters.

Voluntary savings is an entirely adequate, and in fact preferable, substitute to taxation. A society which is sufficiently motivated to save their money doesn’t *need* to be taxed.

Public awareness of the real purpose of such a drive could go a long way towards assisting an ideal economic hibernation. Saving one's basic income could be seen as a public service, which allows one's neighbor to spend more basic income. Theoretically, a sufficiently effective savings or bond drive could entirely obviate the need for any basic income reduction, even in the event of a serious supply crisis. Only if this fails, must policymakers settle for reduced basic income.

- **TAX**

There may be resources which, though we wish them to remain available for purchase, we will want to dissuade use of, to conserve them, or to extend consumption over a longer period of time. Taxing specific resources or goods artificially increases the *cost* of these goods to producers and consumers, channeling market demand elsewhere. This frees resources up for purchase by the state, or simply conserves them, as required.

This is the general role of tax under full output: a *disincentive to produce or consume*, instilled by the threat of destroying money from private citizens' accounts. Quite simply, taxes are disciplinary. We can think of tax as a way for policymakers to draw boundaries around where and how much the economy consumes.

Many today conceive of taxation as funding government spending, or at least being very deeply related to it. But in the final analysis, what funds government spending is private sector production: more goods for money to buy. Taxation has *effects* on fiscal space; some may spur production, but many are just as likely to constrain capacity. To judge real funding considerations, full output policymakers must concern themselves with each policy's effects on real output. Post-calibration, there is no need to guess about which is which: efficient taxes will register as an increase in basic income (or have no effect), and inefficient taxes will decrease it.

Any tax which is performed on the justification of preventing inflation represents some failing or inefficiency of a hypothetically ideal base money issuer. The primary function of a currency issuer is to issue currency, at optimal rates, not to remove it.[30]

[30] Overemphasis on taxation is common. Even the Modern Monetary Theorists, who are popularizing the notion that government spending is not dependent on tax revenue, still characterize tax as a driving force behind the value of money (via labor provision). What this view lacks is sufficient appreciation for spending flows and production flows, and the balance between them required to maintain currency as money, as elucidated by the ITM view of inflation and deflation.

To make the point: no amount of aggressive taxation could save an inflating economy, if policymakers failed to calibrate the metric which matters: total spending. Taxes *can* reduce spending in an economy when market discipline is called for, but a simple reduction of currency provision is a far more elegant and painless solution. This is, in fact, precisely why central bank monetary policy now dominates the global economy's real currency management, while political disputes over taxation render the government inadequate as a base money issuer.

14. CONCLUSION

This essay has been an introduction to broad policy concepts. Possible objections and parallel considerations will be examined in future work.

A calibrated basic income creates a healthy core of essential-sector spending and production. This is a necessary precondition for economic hibernation during an exposure-risk crisis. The hibernation policies listed above may be used to attempt an *optimal* hibernation, but a passable one could likely be accomplished with only a CBI and shelter-in-place orders, even by a government otherwise ill-prepared for crisis.

Basic income affords every person (consumer, worker, or business owner) improved means to self-isolate or shelter, at their own discretion, whenever they notice the onset of a disaster, or first hear official warnings. This is preferable to letting poverty or precarity be the default condition, and waiting for policymakers to grant financial relief to one subset of the population at a time. It is better to assume that everyone can benefit by having more money than less, and that essential business can benefit from having more customers. Money can then be withheld or removed only as needed by policymakers to optimize productive efficiency.

Many full employment policy responses may work against full output considerations; some may be critical lifelines under the current system, but would introduce inefficiencies under full output. However, this does not provide any obstacle for transitioning paradigms. Before, during, or after a crisis, the method of transition is the same: gradually introduce basic income until calibration is achieved. Non-optimal legacy policy will simply reduce the attainable calibration point. Policymakers can then optimize by removing legacy policies one at a time, and/or adding full output alternatives, while monitoring effects.

Full output works equally well as a crisis response and as a permanent reform, because our everyday economy-- lacking a basic income-- is already in a constant state of semi-crisis. To function, economies need a reliable mechanism for delivering spending money to consumers. Lacking this, our economy has been chronically dysfunctional. This dysfunction is sometimes called “poverty” or “recessions.” These problems are continually present under the current paradigm, and a crisis like an epidemic merely expands the number of people who are affected.

Basic income calibration does not and should not be expected to resolve all possible problems which may arrive in a society or an economy. But it does solve the problem of reliably distributing incomes to consumers. This is an important problem to solve.

Every economy in the world today has some level of fiscal calibration available. This potential is neglected exclusively due to paradigmatic assumptions.

MORE INFORMATION:

Introduction to Consumer Monetary Theory (CMT):
https://medium.com/@alexhowlett/introduction-to-consumer-monetary-theory-78905b0606ca

Is there a natural rate of basic income?
https://youtu.be/ITwim8TK_cg

Project Greshm homepage:
https://www.greshm.org/

Long-form interviews on CMT, full output, and basic income:
https://www.youtube.com/playlist?list=PLTe29Z9oSRp4WFBanS0aG5gGAB-k7-xbF
youtube.com/c/derekvangorder

Academic roots of CMT / commentary on Perry Mehrling's Money & Banking course:
https://www.reddit.com/r/cmt_economics/comments/h0dito/money_and_banking_summer_2020/

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