Who Will Own The Robots? We Have More Than We Need, Its Just Unequally Distributed. Post Scarcity?

Who owns all the stuff?

In a knowledge economy labor's share of income keeps diminishing while capital's share keeps increasing as businesses are able to accumulate intellectual property whereas individuals have limitations. In the limit who owns the businesses?

The march of technology will see many jobs made redundant by automation. If robots replace humans then in the limit who owns the robots?

Unlike other factors of production knowledge is not consumable. Producing more of a product does not exhaust knowledge. Knowledge defies scarcity. When knowledge becomes responsible for an increasing proportion of value in the production of goods and services, who should own knowledge?

When factors of production are not unbalanced the question of who owns what factors of production do not arise. When factors of production are highly unbalanced some factors will see returns diminished relative to others. Owners of that factor are at a disadvantage and owners of other factors are at an advantage. Is there a concept of discrimination between factors of production and is there a concept of fairness?

One or all?

Deflation and interest rates.

Human ingenuity should over the long term reduce our reliance on labour and

resources. The relative marginal product of both should fall as should the marginal income to both. Does this imply factor price deflation and wage deflation? Does it also imply general price deflation?

A firm has productive assets and cash which it funds with equity and debt. Productive assets include labour and technology, both have a cost as well as a return. A firm cannot own labour but rents it from individuals. A firm can either rent or own technology. The cost of owning an asset is the cost of financing it, which is the cost of equity and debt. The cost of renting an asset is its price or in the case of labor, wages. The price or wage a firm is willing to pay is the marginal revenue product of labor. If the productivity of labour is low, wages will be depressed. If final good prices are depressed, so too will wages be depressed. The corporate balance sheet likes product inflation, falling interest rates and falling wages. Falling wages and rising product inflation implies lower share of labour in output. This incentive would not be so if labour could be owned instead of rented for then its labor cost would be its cost of capital. Businesses also favor inflation the more highly levered they are as it erodes the real value of the debt.

A household derives income from income yielding assets, labour and interest on cash. Its assets consist of investment assets, the capitalized value of its labour and cash. Its liabilities include mortgages, car loans, student loans and short term debt such as overdrafts and credit card debt. Households like rising asset prices and falling interest rates. To the extent that inflation correlates with asset prices, wages and employment households like inflation. Highly levered households also prefer
inflation. Younger households prefer inflation as they have a longer period of employment ahead of them and more debt and less savings; they also prefer lower interest rates and a steeper yield curve. Older households prefer deflation as they have less debt and a shorter period of employment before them' they prefer higher interest rates and a flatter yield curve.

Houses.

House prices are driven by demand and supply. For a fixed supply house prices rise where employment prospects are strong and mortgages are available and cheap. House

prices are also correlated with long duration bond prices as they are themselves ultra-long duration assets priced on the basis of capitalized rental income.

In space constrained cities and countries house prices tend to rise faster than wages and affordability. Employment prospects rise only to drive greater population density which drives up house prices. The value of housing accrues not just to the occupier or owner but to the society as a whole which benefits from the clustering of skilled labour and network effects. Individuals who own multiple houses see rising wealth. Households who own a single house face no real wealth effect from rising or falling house prices as replacement costs rise and fall in step. Ownership of more than one house exposes the owner to the wealth effects of the variation in house prices. Since houses in cities and houses are a scarce resource which benefits not just the owner or occupier but society as a whole what are the economic implications when individuals or entities own multiple houses?

Inequality and ownership. Scarcity and abundance.

Businesses or corporate entities have earned an increasing share of output and income at the expense of labor. There are several factors why this might be so. One of those factors is that the economy continues to evolve towards a greater reliance on knowledge and technology. A human being can only acquire and retain a limited amount of knowledge and skill whereas a corporate entity can accumulate the ownership of intellectual property and either capitalize on it or charge a rent for its use. If the return on intellectual capital is fixed but its marginal contribution to output rises relative to all other outputs, especially labour, then labour’s share of profits will fall. Automation is a practical example of where capital and technology replace labour. In the limit labour may become largely redundant.

If labour is unnecessary in production yet the economy is able to produce all the goods and services demanded by people, how would goods and services be allocated to people? This is the post scarcity environment envisaged in some utopias. One practical question is, what things abundant without bound and be produced at no cost and what things cannot? Given sufficiently advanced technology all material things are abundant practically without bound. What might be subject to scarcity? People?

People could theoretically be produced without bound. Space? With sufficiently powerful terra forming there is an abundance of planets which could be colonized. This may sound absurd but we are discussing possibilities and thus sufficiently advanced technology would surmount the most apparently intractable problems. Even space is abundant. How about location? Location is an abstract concept and could remain scarce no matter what technologies we develop.

Location is given relevance by certain qualities. Where these qualities are material they can be replicated without bound and location becomes replicable. What non material qualities could define location uniquely that it could not be replicated without bound? Proximity to and relationships with individuals in a given location would be hard to replicate. This begs the question if individuality was replicable and takes us far from our initial musings.

Time. T
echnology might be able to extend human lifespans without limit, however, time cannot be created. Time expended on one activity cannot be expended on some other activity. Time is therefore not abundant. Time, however, is relative and it is relative to the lifespan of the observer. A sufficiently long lifespan can lower the opportunity cost of time monotonically. In an arbitrary time frame, say in a fixed number of minutes, scarcity remains relevant. Time spent doing one thing cannot simultaneously be spent doing something else. Time remains scarce although there may be some theoretically possible practically improbable technologies which might compress time or the perception of time.

Motivation:

In an infinitely abundant world what is the concept of want and need? What gives the individual satisfaction? Maslow’s hierarchy presents as an ordinal stack of tranches beginning with physiological need followed by material security followed by social belonging, esteem and finally self-actualization. Maslow’s hierarchy envisages increasing sophistication, self-awareness and morality. It does not envisage what happens or can happen beyond self-actuation, or alongside it. Post scarcity may actually confound some of the expectations of this hierarchy.

Hardship and competition improve the breed. Without want there is nothing to animate natural selection and so there is nothing to distinguish negative from positive mutation. Without a mechanism to sort away negative mutation will it imply more diversity? If technology can preserve the weak, it might well imply more diversity.

Will society maintain or shed its brutality? Is the human soul predisposed to competition? How will it react when there is nothing to compete over? Will it create an abstract or an irrelevant competition? If so predisposed, is this predisposition a survival mechanism?

Back to more practical concerns:

We suspect that there are currently more resources in the world than the world needs, that poverty is not a problem of scarcity but of distribution, that inequality is unnecessary and an unnecessarily high price of progress. We don't know why but we suspect this is the state of the world. If so, the current problems faced by humanity are an indictment of our system of economics. We have settled on capitalism and the price mechanism as mathematically and rationally, the best available allocation system. A better distribution exists but no better distribution mechanism exists and the best mechanism has resulted in the current distribution. To accept it is to be defeatist.

Certainly for the rich there is no incentive to change the current state. One doesn't have to be very rich to fall to inertia. The conspiracy theorist might hypothesize that it is not mere inertia but an active policy of maintaining the status quo through the influence of politics and academia. Certainly even the not so well off might baulk at instigating or supporting change when they consider their fortune and the prospect of having to share what they have with those who have not. Change will only come if a sufficient proportion of the population are impoverished or come to feel that their chances of advancement are sufficiently low. When global growth is sufficient that all constituents have an increasing standard of living the risk of change is low. If, however, global growth slows, then a critical mass of malcontents may arise to drive change.

The world economy has witnessed robust growth up until 2008. Some of this growth has been borrowed from the future by
being credit financed. This is an intertemporal transfer of growth. It requires that future growth is sufficient to more than compensate for that transfer. Since the crisis of 2008 growth has rebounded but slowly. A large quantity of debt has been transferred from private balance sheets to public mutualized balance sheets. They have not been defaulted upon or written down. To do so would be to accelerate the reversal of that intertemporal transfer. To hoard it away from the spotlight is to prolong the reversal of that intertemporal transfer. Repayment is immutable but can be redistributed over time.

Can current and future growth compensate for the growing inequality that capitalism naturally perpetuates?