Consumer durables as investments that can help us out of the current economic crisis

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Choose your own subtitle from one of the following: (1) S = I. (2) Back to the economics drawing board. (3) How Paul the Professor is looking for the reset-button. (4) Charity versus frugality. (5) Christ and Confucius. (6) I told you so. (7) A scenario looking for a model.

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Abstract

The steps in this paper are: (1) to recall the $S = I$ relation and its position in macro-economics, (2) to observe how this equation is very relevant again with the renewed reluctance of banks to finance investments, (3) to point out that consumer durables are investments too, (4) to highlight how such durables fit into the macro-economic theory of slumps, (5) to suggest that consumer durables in various cases are easier targets for banks and policy making than industrial outlays.

Introduction

Pollock and Letta (2001) provide strong empirical evidence for Keynes's proposition that if we don't keep up expenditure then our income will suffer. Very enlightening for the dynamic process is Knibbe (2008), unfortunately only in Dutch, so that a brief summary must do. During the Great Depression there was continued and strong technological progress that caused a continued shift of the technology frontier. This increased the gap for effective demand and increased the difficulty of recovery towards normality. After a few years of this Depression, the gap could have accumulated to the requirement of a stimulus of 25% of GDP for recovery. Any economist who would have argued for a stimulus of that size would be regarded, in Knibbe's description, as megalomanic. World War II provided for a much larger stimulus and apparently the US economy could absorb it. Since the economic feedback runs along the channel of policy discussion, rhetorics, and social and psychological processes, recovery is not helped when discussants are put into a position of seeming megalomania. In our present times, technological progress again is very strong, and the technology gaps of the emerging economies already are large. Over time, recovery will become increasingly difficult to manage in standard "responsible" fashion within the budget process and supported by econometric models, when concepts and models no longer capture what is happening with economic capacity.

Proposed measures for recovery must be effective and efficient. Of course they must be on time, but if some window of opportunity is missed then they should not backfire. Preferably, they strengthen the economic structure but they may be temporary as well.

An example of an effective, on time and temporary economic stimulus is that governments organize big parties, pop concerts or classical concerts, with lots of Heineken beer and Gouda cheese, and free holidays for fired automobile workers. Letting people hang around on idle unemployment benefits is a good stimulus as well. It could be more efficient to consider investments however.

The economic theory on the $S = I$ relationship currently suggests a hard look at consumer durables, regarded as investments.

Nominal savings versus real investments

There is a good reason why the $S = I$ relationship features so strongly in macro-economics. In the 19th century, the economy primarily existed of a multitude of small businesses (mostly farms). An entrepreneur did not quite "save" but invested in real equipment. Thus there was a natural connection between savings and investments. There still was a business cycle but the main causes came from other realms (with the well-known example of sunspots). Over the course of time this situation changed by the growth of banking and the way that business is financed. Admittedly, this historical summary may be too simple and historians of money and finance may point to the importance of banking from the very origin of money itself. However, the reason to put this summary in these terms is to highlight the meaning of the $S = I$ relationship.

Haberler (1946) "Prosperity and depression" makes a bit of depressing reading. It is an important book but this also comes from its account of the apparent struggle by economists to get clarity on $S = I$ and the underlying processes. It is some relief to note that the same mechanisms on $S = I$ apply for our current situation, i.e. that we apparently know what we deal with, but it is sad that we have not been able to use this knowledge to prevent this new crisis.

On the mechanism, Colignatus (2005:156):

"One of the key points of Keynes in the *General Theory* was that the true, real, savings of an economy consist of what is invested. All the money that people save does not count as an investment or real saving. Whatever amount they bring to the banks or even hide under their beds, it is only money. One can have nominal saving S and price level P, but the division S / P is more psychological than real. What counts are the houses built, bridges constructed, lessons learnt, all that can be carried over to the next period. In fact, a company that produces but can't sell and goes bankrupt might actually do society a favour, since at least some goods have been produced which otherwise might not have come into existence. The challenge is to get production and investment without such perceived incompetence or fraud. The economy should be designed so that those investments come about in an optimal way, where the optimum must be defined not only in terms of expectations and stability but also in terms of social welfare and full employment."

For the individual investor, financial wealth accumulates by the return on wealth and the additions by new savings. For the nation, with financial wealth W, new savings S and rate of return r, we are tempted to write $W[+1] = W (1 + r) + S$ as well. But properly wealth accumulates by net investments, so that we should have $W[+1] = W + I$. When we combine both equations with $S = I$ we get the dubious conclusion $I = r W + I$ or $r = 0$. The macro return actually depends upon investments I as $r = I / W$. We are in serious danger of double counting or other forms of spagghetti. The issue is clarified in the **Appendix**.

For the body of this paper it suffices to remember that there is a strong causal feedback from I to S and that the macro-economic target is to maintain investments.

Maintaining the level of investments

Our point of departure is Colignatus (2005:157):

"The line of thought that I would suggest is that this optimum requires competing investment banks that develop plans during the economic upswing that can be implemented during the economic downswing. Who worries about pensions and the EU Lissabon Strategy is advised to consider this approach. Since the market is an anonymous beast that may or may not generate such competition, it remains the challenge for governments to mastermind and manage it all."

Obviously, such banks have not been formed, and, now pressed for time, governments all over the world are looking in distress if they can think up ideas for investment on the fly and on how to implement those. This will probably work only to some degree. The main new idea in this paper is to regard consumer durables as investments that can help us out of the current economic crisis.

In the national accounts the term "investment" is reserved for such outlays by business or government. The term "consumption" is reserved for the consumers. Consumption is frowned upon by puritans and frequently taxed. Consumer durables are conventionally accounted as "consumption" and then treated in the same manner. However, when items can be regarded as investments then they receive an aura of respectability.

What is relevant for this discussion is the economic mechanism. However, when considering the issue, we naturally encounter various psychological and sociological processes, and even issues of morality.

The economic mechanism of consumer durables

The key point of the suggestion of this paper is that when a consumer buys a durable item, then the $S = I$ relation of the 19th century entrepreneur is restored. The decision to save / invest is taken at the individual level, reducing the error of misallocation.

The whole purpose of working and investing is, in the end, consumption. The economic question is the allocation over the life cycle. A Heineken beer or Gouda cheese today might be substituted for a durable item such as a silver spoon or a tattoo that generate consumer satisfaction for the rest of the cycle (and everyone who can see it too). Moreover, the durable item adds to wealth and can be liquidated later if needed (spoons, not tattoos).

Important durable items are education and, indeed, housing. One of the triggers of the current crisis was the US housing market but the problem came from bank management and not the durability of the investment. Tackling the housing market (now not only the US) not only takes away one of the triggers of the crisis but is also in line with this shift in focus towards durable consumer goods.

Colignatus (2005:222) already wrote:

> "One of the ideas that I would have liked to look into, but have had no time for, is, that the return on consumer investments (like home improvement for the elderly) may be larger than that on financial stock ("savings"), and that this return is not adequately accounted for (also as a tax base)."

The return on investment may be much larger than commonly considered. When banks require collateral for investments by private companies then such collateral might be easier found in consumer durables. It may be that rules and regulations must be changed to make this collateral more accessible though.

One is reminded of the investment bankers, who buy up a company, split it up, sell the parts, and finance the orignal loan with the proceeds. When consumer durables can be made more accessible as bank collateral then bank risk is reduced and the consumer will do an acquisition where one was blocked before. A government stimulus in this realm can have a higher multiplier than elsewhere.

Advantages of consumer durables thus are: (a) the allocation is at the micro level so that the saving = investment relation holds without error, (b) the consumer rate of return can be higher than market rates, (c) it forms collateral, (d) the multiplier can be larger. These properties do not hold for all consumer durables but they may hold for sufficient amounts of them.

As there are apprehensions about supporting the unemployed or providing an economic stimulus to prevent unemployment, these apprehensions may persist regardless of whether the money is spent on perishables or durables. But that may also depend upon where those apprehensions come from.

The parable of the Ant and the Grasshopper

In the parable of the Ant and the Grasshopper we find some deep psychological undercurrents that now also surface in the present discussion. Strong Christian and Confucian moral codes are that we should save and invest for times of distress. But the Grasshopper retorts: what is life if we only work and cannot find time to enjoy ? The issue also returns in Mandeville in the "Fable of the Bees". And when the Ant has saved and invested, not as a caricature but really as a stronger and wiser agent, should she have compassion with the frickle Grasshopper ? In reality

there are still plenty of grasshoppers around – it is only a parable. The moral of the story is directed towards questions of how we ourselves want to manage our society and interpersonal relationships.

The point is: While we thought that we had this worked out already to a large degree, now the crisis turns the world upside down and we have to find our way again, and the lure of such parables and proverbs is strong again. This is a pitfall however. When we would start this whole discussion anew then this would take up a lot of time, distract from practical issues, and hinder recovery.

The best way to counter these moral impulses is to adopt the economic analysis in Colignatus (2005, 2008) as the framework for recovery to a stable path. Since this answers the fundamental questions, there is no cause to get confused on issues of fairness or the choice between charity and frugality.

Admittedly, nations around the world would still have to adapt. One of the conclusions is that unemployment and poverty are fundamentally solved (only and by definition) by a welfare state, and that the proper economic question is how to manage that welfare state. Nations like the USA will have to adapt to such notions if they want to have the proper framework for recovery to the stable path. The point however is that this kind of adaptation is a very other kind of adaptation than trying to start the old moral discussion all over again.

The adaptation is towards how a welfare state is managed well. The issue on the minimum wage and taxation features strongly here as well. These tax issues also affect consumer durables.

The tax void

When notions of charity versus frugality pop up then people quickly think about the cost of welfare and the cost of sustaining a high minimum wage. Awareness of the notion of the tax void can mitigate that worry.

From Colignatus (2005):

- $tax[y] = \tau\,(y - x)$ is the tax relation with income y, exemption x and marginal rate τ
- $benefit[y] = y - B$ is the benefit line, with B the minimum existence or benefit level
- the intersection $benefit[y] = tax[y]$ gives $y = M$, with M the gross minimum wage, such that $M = B + tax[M]$ is the gross level that one must earn minimally to live on the minimum.
- while the tax wedge is the vertical difference between y and $tax[y]$, defined for any y, the tax void is the horizontal range of productivity levels $[B, M)$ where taxes can be abolished without cost (since people may not work below the minimum wage, taxes are not collected anyway) and allow a substantial reduction of wage costs such that many persons, now blocked from work, can start working.

Dynamic marginal tax rate

Standard economic analysis uses the partial derivative to determine the optimal point in taxation. Colignatus (2005:140-145) explains that dynamic optimality requires a "dynamic marginal tax rate", which will be rather close to the average tax rate.

With income y, tax T and Δ the difference operator:

$$\Delta T \,/\, T_{-1} \;=\; \Delta y \,/\, y_{-1} \quad\Leftrightarrow\quad \Delta T \,/\, \Delta y \;=\; T_{-1} \,/\, y_{-1}\,.$$

With balanced growth of taxes and income (proper adjustment of parameters, LHS) then the dynamic marginal equals the average rate (RHS). Marginal rates are important for the optimum and for incentives but dynamics is important too and economic agents can be more interested in the risk of unemployment and their own position in the distribution of income than on the marginal proceeds according to the partial derivative. The recent review by Clark, Frijters and Shields (2008) can be extended on this as well.

The reduction of labour costs requires a reduction of the gross minimum wage and the maintenance of a decent standard level of living requires a low VAT or sales tax. Thus the marginal rate of the income tax would be raised. This runs exactly against the policy of the last decades (see the issue of repressed stagflation).

Henceforth, the argument for lower taxation is commonly overrated. By consequence, the current marginal tax rates will be too low for optimality, and they could be raised. That is, from the point of view with regards to optimality. How this is for economic stimulus and recovery from the present slump position can be different. The argument however clarifies that deficit financing is also overrated. When current deficit financing increases the risk of future inflation then a current higher marginal tax rate may be preferable.

This also gives a policy: a higher exemption and a higher marginal tax rate, with specific deductibles for specified consumer durables such as home maintenance.

Beware of Paul the Professor

During the last US Presidential election, Senator McCain introduced US voters to Joe the Plumber. In a reaction, Paul Krugman presented himself as Paul the Professor and wondered whether McCain would give him some attention as well.

In the onset of the Obama administration it appeared that some Obama supporters such as the new minister of Finance had problems with taxation. Earlier, I mentioned that Paul Krugman also has his problems with taxes. Colignatus (2005:219-231) gives a general discussion and Colignatus (2005:222) quotes Krugman (1993):

> ""I find that almost anything having to do with taxation is better than a sleeping pill". Krugman (1993)"

I have checked Krugman's New York Times columns on the current economic crisis and have found that this still is the case. If Krugman had written elsewhere I presume this important subject would have appeared in a column too. Krugman is apparently not aware of my earlier comments, not aware of the cause of the current economic crisis (repressed stagflation), and not aware of the elements such as the tax void and the dynamic marginal tax rate that are important for the recovery. Hence, beware of what Krugman writes since it will at best be only part of the answer and may actually be counterproductive.

PM 1. Apart from that I applaud his Nobelprize and consider it only fitting for a globalizing world that this type of work has been awarded. PM 2. It has been fun to write this section.

A scenario looking for a model

Obviously, the present analysis is only conceptual and requires implementation with a fully developed econometric model if it is to be taken serious by policy makers (if not you).

Such models are maintained by the bigger research groups or organizations who do policy advise on a regular basis. Unfortunately, there is no convention yet to put the model on the web,

with each equation accessible as a well documented separate record, and easy methods to manage the whole and to find the results of a scenario run. Every modeller knows that running a scenario is no simple issue and obviously the noise level will increase when everyone not only can run a camera and put a movie on YouTube but also run an economic model and put the results on YouEconomicModel. But my impression is that governments are advised to support such a development for the research community. Better to suffer a bit more noise than trillions of dollars lost to needless barriers to scientific enquiry and advice.

Other possible elements for a recovery

The present discussion does not mean that this is the only scope to get a recovery. This current paper of course supplements Colignatus (2005, 2008). Other authors have other suggestions. I have read various such papers, like e.g. on banking and credit as co-operatives, adjustment of the Basel rules to support risk taking rather than kill it, and others (indeed, Krugman too). It is tempting to discuss each such reading but this will lead too far. Instead, I must mention that I myself have other suggestions as well. It will be useful to sketch some points that may be developed at another time and place.

(a) Given the increased sense of insecurity it is remarkable that official forecasts do not generate more stability. Much of the current crisis is a vote of no-confidence in economic analysis. Markets do not trust current arrangements for economic advice and forecasting. Our nations are *penny wise, pound foolish* with respect to their layouts for those crucial functions.

(b) It is advisable to enlarge the EU with Russia and related Eastern European nations. And Turkey of course. Economists have a role in explaining that the EU is basically a social-economic space and that this property is in danger at the cost of stability by efforts of some politicians towards curious notions on state formation. The Economist, Charlemagne (2008), is an excellent exposition on this. Vice President Joe Biden in Munich spoke about the "reset button" for the NATO/US-Russian relationship but little seems coming while the main problems are economic and best settled by personal relationships in the market place.

(c) The Mundell (2009) suggestion of a world currency can clearly be supported. A small amendment would be that we should not wait for the US to join in. The EU, Russia and China could jump start the process, neutralize the Chinese overhang of dollars, and guide the world to a readjustment of the US dollar (area). It is important to remember Skidelsky (2000), biography of Keynes: while the intuitive idea of political policy makers is to think that the deficit (importing) country is to blame and has to adjust, the better analysis is that the surplus (exporting) country has a responsibility to adjust. After World War II the major exporter was the US and Keynes's argument might have seemed self-serving but it makes excellent economic sense by itself and now China can use its advice. In the same way the Dutch economy has been running surplusses for years and other nations should press it to adjust its internal imbalances.

(d) The world is an amazing theater for the inability of mankind to co-ordinate crucial functions. If it weren't for our fellow men suffering we should actually keep it so. Fortunately, when we succeed in preventing such suffering, there will be ample ways for mankind to screw up the other realms of life. Would it be a suggestion to double our *corps diplomatique* with the sole purpose to iron out the morally outrageous suffering of mankind? Many "hardline" people seem to think that economics tells us that such suffering cannot be prevented and that it is part of the deal that comes with development. The bitter irony is that it is rather the other way around. Our predicament is a sound basis for a win-win situation. Please, give the world more economic diplomats.

(e) Oh well, bank nationalisation and a general reduction of working hours (US Americans need more holidays) are also on the horizon when these other ways aren't done. I enjoyed Gladwell (2002) very much and am tempted to cut up organizations in chunks of no more than 150 employees. No doubt many other interesting ideas will pop up over the course of time if the spiral continues downwards.

Conclusion

Colignatus (2008) reviews competing economic theories on the current economic crisis and argues that (a) repressed stagflation is the hidden cause for the present crisis, and (b) this diagnosis allows a managed recovery that prevents a lot of needless suffering. Naturally, governments do not pay much attention to this analysis and the crisis now has deepened more than necessary. Given this deepening of the crisis, the present stage requires some new ideas to steer us out of the ever increasing mess. It is interesting to think about such other ideas that not will be listened to again.

This paper has looked at the $S = I$ relation that is so central in modern macro-economic analysis. Consumer durables provide a particularly interesting way to help us towards recovery.

The steps in this paper are: (1) to recall the $S = I$ relation and its position in macro-economics, (2) to observe how this equation is very relevant again with the renewed relunctance of banks to finance investments, (3) to point out that consumer durables are investments too, (4) to highlight how such durables fit into the macro-economic theory of slumps, (5) to suggest that consumer durables in various cases are easier targets for banks and policy making than industrial outlays.

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Taking into account the notions of the tax void and the dynamic marginal rate, this also gives a policy: a higher exemption and a higher marginal tax rate, with specific deductibles for specified consumer durables such as home maintenance.

Appendix: Individual versus aggregate wealth, savings and investment

Accounting of national income via expenditure gives us the split in consumption and investment in real and nominal terms:

$$Y = C + I = p_c\ c + p_i\ i$$

The common assumption is that the observed price p_i reflects the perfect foresight of investors for future profits discounted with a (possibly optimal) equilibrium prospective rate. Conventionally, we may determine a "real national income" as $y = c + i$, and an implied general price level as $P = Y / y$. [1]

By definition "current saving" comes from current income, $S = Y - C$, and hence $S = I$. In itself this is not a very enlightening definition. Nominal national wealth consists of stocks and bonds (stock variables measured at the beginning of the period), and consumption will be financed not only from income but also from this wealth. More commonly people will regard as "savings" that part of their income and wealth that is not spent.

$$W = Stocks + Bonds$$

The growth of nominal or financial wealth can be expressed as follows:

(1) $\qquad W[+1] = (1 + w)\ W = (1 + s)\ Stocks + (1 + b)\ Bonds$

Accounting of national wealth gives us the split in real and nominal wealth. As the rate of return on bonds has been given in advance, the average return on real wealth and investments determines the remaining dividend on stocks, while the stock value will adjust to the prospective rates of profit.

Saving and investment might be taken in net or gross terms but it is more clarifying to take gross terms. When investments are gross then they include a compensation for depreciation, which is "real saving" taken place by companies. This is clarifying as an instance of $S = I$. It is also clarifying for the point that only $S - D$ enters the financial accumulation of wealth as experienced by savers. Financial wealth grows because of a return r on existing wealth and new additions:

(2) $\qquad W[+1] = (1 + w)\ W = W (1 + r) + S - D$

Actually, it better to say that for each individual saver j:

(3) $\qquad W_j[+1] = W_j (1 + r_j) + S_j - D_j$

While the r_j are rates of return on the individual accounts the r is only a macro residual of dubious interpretation. It is dubious to see r in (2) as a "return" variable. It is not only that the gain of some can be the loss of others. It is also the point that the macro return comes from real investments, i.e. the $S - D$ part. While (3) accumulates to (2) and while the different rates of return are dispersed around r, the interpretation of the macro relation is different from the individual relations.

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[1] Actually, there may not be an immediate need for doing so. This could be done if the production function holds in terms of $y = f[k, a]$ but it is more likely that c and i have their own production functions, $c = f[k_c, a_c]$ and $i = f[k_i, a_i]$, where the latter investments would also be split for investments in machines that make consumer goods or machines that make machines.

For capital there is the implied national rate of real growth g.

(4) $k[+1] = (1 + g)\, k = k\, (1 - d) + i$ with $g = k[+1]\, /\, k - 1 = i\, /\, k - d$

There clearly is an accounting problem to match real and nominal values over time, which is aggravated by the issues (i) that we need a good definition of what we consider as "real", and (ii) that conventionally consumption and investment are measured as flows while capital and wealth are measured as stocks. Some economists have given up on this accounting problem and merely state that they take the figures as those are produced by the national accountants at the statistical offices. On the other hand it may well be that those figures are merely outcomes of accounting practices so that they do not reflect the meaningful economic relationships. Accounting practices can be changed and obviously we would benefit from figures that we can use in a meaningful manner.

Take $K = p_i[-1]\, k$ as the imputed or accounting value of capital. Then we get:

(5) $K[+1] = p_i\, k[+1] = p_i\, /\, p_i[-1]\, (1 - d)\, K + I$

$$= (1 + a)\, (1 - d)\, K + S = (1 + a)\, K + S - D$$

where a is nominal appreciation (though it can be negative) and $D = (1 + a)\, d\, K$.

When financial wealth remains in step with imputed capital and observed prices then $W = K$, and (2) and (5) give:

$$(1 + r) = (1 + a)$$

In the case of constant prices of investment goods $p_i = p_i[-1]$ and $a = 0$, so that:

$$r = 0$$

Similarly for growth, $W = K$ gives:

$$K[+1] = p_i\, k[+1] = p_i\, (1 + g)\, k = (1 + a)\, (1 + g)\, K$$

$$(1 + w) = (1 + a)\, (1 + g)$$

so that nominal growth consists of net real growth g and appreciation a.

Clearly, the aggregate "relation" (well, it is a sum) for financial savings and accumulation (2) is quite different from the underlying economic process given by (4) and the imputed accounting (5).

When we regard the equations for $k[+1]$ and $W[+1]$ this makes full sense. When we want national wealth to reflect national imputed capital then the accounting relation for nominal wealth actually also requires a term for depreciation loss, while the proper national return actually consists of the growth term provided by $S = I$.

For the authorities monitoring the economy, who impose the accounting practice given by K and who want W to track K, it makes most sense to focus on w. The residual variable r in (2) should not be mistaken for a standard rate of return, and making this mistake would come at the cost of introducing inflation into the economy (i.e. increasing the a in $r = a$).

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Note: Colignatus is the name of Thomas Cool in science. Some archives may not recognize that name.

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