

KORNAI: SHORTAGE VERSUS SURPLUS ECONOMIES¹

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1. Premise

The economics of institutions and comparative systems owes an enormous debt to János Kornai. This was well illustrated by his presentation at the WINIR Conference (Kornai 2014a), offering a synthetic characterization of socialism and capitalism respectively as shortage and surplus economies. I was very fortunate, over the last fifty years, to have had many opportunities to meet him and to talk to him, and to discuss these issues directly with him. János can be very persuasive, and over the years I have somewhat converged towards his views, but today I am going to rehearse one residual major disagreement on the shortage economy, and three reservations on capitalism as the surplus economy which, after discovering from talking to him that he was in basic sympathy with them, I have downgraded to qualifications.

2. The Shortage Economy

The disagreement with János naturally does not concern the characterization of the Soviet-type, centrally planned socialist economy as the Shortage Economy (Kornai 1980a). There can be no doubt that in all of those economies shortage phenomena (including rationing, queues, waiting lists, forced substitution and purchase postponement, outright desistence) were general, frequent, intense and chronic. Whether money prices were stable, rising or falling, those economies were afflicted by large-scale, endemic excess demand at prices below the market-clearing level; whenever technically feasible, re-trading

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occurred at higher black market prices (for definitions and a review of attempted measurements see Nuti 1986).

Nor does my disagreement concern the adverse consequences of shortages. A by-product of repressed inflation was over-full employment of labour, i.e. excess demand for labour by enterprises (involving low labour discipline, high job turnover and wage drift). Consequences included consumers' frustration at their inability to secure goods and services at official prices, lower incentives to supply additional labour and effort, production inefficiencies due to erratic supplies of inputs. I would add that endemic shortages doomed to failure any reform attempt aimed at establishing forms of market socialism, such as were repeatedly attempted throughout the bloc for almost forty years after Stalin's death in 1953.

Our residual disagreement concerns the *causes* of shortages in the socialist economy. In his 1980 book and other papers at around that time (1979, 1980b; and 1959 for an earlier statement) Kornai initially attributed such shortages primarily to *Soft Budget Constraints* (SBC), i.e. the ability of state enterprises to replenish their liquid financial resources through budget subsidies or credit (by banks and/or suppliers) whenever money prices were raised in order to reduce shortages. The notion of Soft Budget Constraints is an original and valuable contribution by János Kornai to economic theory and policy. Volume IV (2014b) of his ten-volume *Collected Works* gathers 13 publications of his on the subject and his *Introduction* to the volume (2014 c) stresses the partial overlapping of SBCs with Moral Hazard and with Time Inconsistency, while claiming their specific additional usefulness. However, soft budgets can explain open inflation but are neither necessary nor sufficient to explain shortages, which in the best Walrasian tradition require simply prices consistently lower than their market-clearing level. In such conditions soft-budget constraints make shortages persist, as they would if enterprise funds were fully (100%) and continuously indexed to prices, but cannot generate shortages in the first place. Gomulka (1985) showed that shortages did not depend on budgets' softness, but on the degree of budgets' softness being higher than the degree of price flexibility: if prices were flexible a limit to

budget softness would be placed by either planners' concern about resulting open inflation and its adverse political effects, or by the hard constraints of the real economy (see Kornai's reply, 1985).

In later works, both in *The Socialist System* (1992) and in a paper on ending shortages in the transition to a market economy (1995), Kornai downgraded SBC from "prime mover" to concomitant cause of chronic shortage, together with the lack or inadequacy of private sector production and of imports. Even in the absence of the Walrasian feedback of excess demand on prices, or course, shortages are reduced and possibly may be eliminated also by the Marshallian adjustment of enterprise output (and foreign trade) to profit margins, as well as by the capital-stock adjustment of actual to desired productive capacity. Naturally both these additional mechanisms must be blocked (as they usually are in the centrally planned economy) for shortages to necessarily arise and persist. But Kornai still regarded shortages as a general feature of the socialist economy *regardless of the price level*, thus implicitly assuming a zero elasticity of both demand and supply with respect to prices (see Kornai 1995, Fig 1 p. 151 where quantities both demanded and supplied are vertical lines parallel to the price level axis, moreover with demand being subject to horizontal shifts to higher levels even in the short run). The trouble is that we will never know whether this was the case: in peace time prices were mostly an instrument of aggregation, and changed infrequently, often remaining virtually unchanged for decades on end.

Holzman (1960) actually produced a measurement of excess demand for food in the USSR in 1937-1958, taking the ratio between the free price in the collective farms (*kolkhozian*) market and the official state price, and weighing such ratio by the share of free market turnover in total turnover (taken at the respective official and free prices at which they actually occurred). In truth Holzman's indicator may well overstate the incidence of shortages, for in a dual price system (with free and controlled segments) the free price necessarily must be higher than the single price that would prevail in a unified market, as long as at least part of the consumer surplus enjoyed by buyers of a good sold at below market-clearing is spent on the same good in the free market, thus

boosting the free price above what would have been its single equilibrium level. Holzman's index was updated by Garvy (1977) and Dirksen (1981). However Holzman's series, beside the possible over-statement, indicates the trend of shortages over time but not their absolute incidence at any time. Both open and repressed inflation encourage dollarization, i.e. the use of foreign hard currencies (such as the US dollar or at the time the DM) as unit of account, means of payment and store of value. Another indicator used to measure excess demand is the ratio between the black market exchange rate and the lower official rate for hard currencies in term of domestic currency (as in Culberston and Amacher 1972). The diffusion everywhere in the socialist bloc of special shops where goods were available for foreign exchange (and no questions asked) set a lower bound to the black market exchange rate, represented by the Purchasing Parity exchange rate for the relatively cheaper goods in those shops. For instance, if a bottle of vodka priced at 100 zlotys in state shops only cost 1 US\$, officially worth only 25 zlotys, the black market exchange rate for the dollar could not be much lower than 100 zlotys. But it could be higher, if lifted by additional, generalised excess demand over and above available supplies. Yet black market exchange rates in most centrally planned economies, after the confiscatory currency reforms of the mid-1950s, for most of the 1970s and 1980s tended to be contained within the range of 3-4 times the official rate. On that basis we might conjecture that excess demand would have been eliminated if official state prices had been, say, doubled or trebled (considering that as indicated above the equilibrium price in a unified market must be lower than that in the free market segment of a dual market). Only towards the end of the Soviet-type system, in the late 1980s, did black market exchange rates skyrocket. And in the price liberalization of the early 1990s transition the elimination of shortages required massive price increases often to the point of open hyper-inflation. Uncertainty about the persistence of the newly found market equilibrium, and the frequent administrative adoption of the higher prices prevailing in the free market segment of a dual market, naturally led to prices overshooting to levels higher than sustainable equilibrium prices, and to the associated transformation

recession (Kornai's own definition; see Nuti 1986 and 2012). In conclusion, if our rough and ready assessment of the degree of excess demand in traditional centrally planned economies is accepted, Kornai's proposition of complete inelasticity of excess demand with respect to price remains a debatable conjecture.

The subsequent approach followed by Kornai (1995) and his current position (Kornai 2014c) on soft budgets constraints is based on self-fulfilling expectations: "The SBC syndrome derives essentially from *expectations* built into decision-makers at units potentially requiring rescue. Those raising loans expect that if unable to repay them, somebody will bail them out." One problem is that, while the degree of budget softness and the degree of price flexibility can be regarded as objective structural parameters of the system, expectations introduce an element of complete subjectivity into the argument. Budgets are soft as long as they are believed to be soft, in which case, of course, that same belief must be shared by the enterprise's lenders and/or suppliers; otherwise it will be the belief of the most prudent of all actors (enterprise, lenders and suppliers) to determine the relevant degree of budget softness. It is hard to generalize such an expectations model to a whole system of state enterprises under socialism, labelled by Joseph Berliner (1957) a "docu-monetary" system in which official entitlements as well as money were necessary to secure supplies. And – in any case - once again the identification of soft budgets with shortages is debatable. It is true that the *perceived* degree of softness may be persistently higher than the degree of price flexibility, thus always fulfilling Gomulka's condition for shortages, but this rather sounds like a *deus ex machina*. All the factors mentioned by Kornai as pre-conditions for the elimination of shortages even in the presence of SBCs (private sector expansion, trade liberalisation) presume price flexibility to the point of market-clearing, which in turn remains a sufficient condition for the elimination of shortages – as in any Walrasian world.

Shortages arose as a typical feature of the socialist economy simply because socialist planners wanted to eliminate inflation, being one of the main scourges of capitalism, but could not, for a variety of reasons: overambitious plans

especially for investment, wage drift under over-full employment, partial or general under-fulfilment of production targets, import squeezes to give priority to targets other than demand-supply balance, deliberate under-pricing of necessities for distributive considerations, or (following a distinct Stalinist strategy) excessive underpricing of shoddy goods unsalable at cost-covering prices. In such circumstances socialist planners could still *pretend* to have defeated inflation, by decreeing prices at below market-clearing levels. They could not really defeat inflation, but they could and did repress it instead (socialist leaders adopted the same policy with respect to nationalisms, repressing them rather than eliminating them).

3. *China*

If shortage were a necessary feature of socialism, a dilemma arises: is China a shortage economy or is it fully capitalist? Admittedly China is a very special case. It is most certainly not a Soviet-type socialist economy. Kornai regards it as being closer to capitalism than to socialism, indeed as “a particular variation of capitalism, generating in most sectors a surplus economy” (in our correspondence). But there is still a sizeable, quite large though no longer dominant state enterprises sector, enjoying soft-constraints and government subsidies. And, while the Chinese economy is dominated by markets, the exchange rate is not market determined: it is a major instrument of macroeconomic policy used to achieve near-full employment. There are no Trade Unions and strikes are illegal (though increasingly tolerated). Yet there are minor forms of financial repression but no significant shortages, if any. Kornai (2014c) indicates the existence of a Chinese private sector and openness to foreign trade as the main explanations for the lack of shortages in a self-styled socialist economy. But it might be simpler to say that shortages are not caused by the SBCs associated with socialism, but by prices set below market clearing, which may or may not be a necessary feature of socialism, and indeed in China today they are not. Even in China’s past, for a long time prices fixed below market clearing for a share of the quantities supplied were

accompanied by additional supplies being available at free prices – not in black markets but under the official dual-track price policy typical of China.

4. *The Surplus Economy*

In his latest book, *Dynamism, Rivalry and the Surplus Economy* (2013), János Kornai characterizes capitalism on the contrary as the economy of surplus, of excess supply (excess capacity and excess inventories) and labour unemployment – not cyclical *à la* Keynes but chronic. He devotes great attention to conceptual definitions and their consistency with accounting conventions, which is desirable and uncontroversial.

Kornai (2014c) recognizes the significant persistence under capitalism of nine Soft Budget spheres: 1) Firms in state ownership; 2) Local and regional government organizations; 3) Budget-funded institutions and non-governmental organizations; 4) Banks; 5) Indispensable private firms; 6) Large, priority projects funded with public money; 7) Firms and individual producers benefiting from sectoral support; 8) Private firms rescued through corruption; 9) Central government. A tenth instance is that of households in special cases (such as government relief of the burden of debt for Hungarian households whose mortgages were denominated in foreign exchange). Of course none of these instances of soft budgets is associated with shortages: Kornai attributes this to the existence of a private sector and the liberalization of foreign trade, but once again one might as well attribute it to market clearing prices, without which neither private production nor imports or diversion from exports necessarily prevent shortages.

The novel aspect of Kornai's characterization of capitalism as the surplus economy is its positive assessment as an environment favourable to dynamism, entrepreneurship and technical progress, competition, innovation and structural change. Central planning, on the contrary, was ultimately responsible for systemic stagnation, due to its failure to make available resources outside a rigid central plan, to allow experimentation, and to adequately reward the successful inventor and innovator. Lieutenant-general

Mikhail Timofeyevich Kalashnikov won many medals for various versions of the best selling AK-47 automatic rifle that he designed, but he died poor.

Kornai makes a fair comparison of both systems: each has merits and drawbacks that he regards as inseparable and genetically implanted. He recognizes the misery and evil of labour unemployment associated with surplus, but argues that you must take the rough with the smooth: you cannot combine socialist full employment with capitalist dynamism (my teacher Maurice Dobb, a Marxist, also taught me that you cannot mix features of economic systems to taste, as you could with the ingredients of a cake). And between "really existing socialism" and "really existing capitalism" (for in his view *tertium non datur* other than in the realm of utopias), Kornai's personal preference, respectable like all value choices, goes to the surplus economy.

5. Kornai's evidence

Kornai supports these provocative propositions with a mass of data on technical inventions and their diffusion in the two systems. He lists 111 revolutionary innovations that since 1917 did "fundamentally change the everyday practice of people's lives, work, consumption, recreation and their relationship to others" (p. 5). He finds irrefutable evidence that "Capitalism produced almost all the breakthrough innovations and was much faster in other aspects of technical progress." For instance, the time lag in the diffusion of innovation from pioneers to followers was much longer in socialist economies, and has been rising rather than shrinking over time.

"Assume... that... the world revolution was victorious all over the globe, without a spot of capitalism left. In such a case we would never have gotten the computer and the transistor radio, the refrigerator and the supermarket, the Internet and the escalator, CD and DVD, digital photography, the mobile phone and all the other revolutionary technical changes" (p. 23). Thus Kornai regards the promoting impact of capitalism on technical progress as one of its greatest virtues, and the retarding impact of socialism on technical progress as one of the greatest vices of that other system.

Surplus arises in the capitalist system because of factors such as monopolistic competition, uncertainty of demand, economies of scale and above all the “creative destruction” involved by innovation itself; but the main mechanism for the reproduction of surplus is of course the Labour Market. Out of a country’s population of Q a number of people N are inactive because “incapable of work” in some sense or other; a number M are capable of work but inactive because they are discouraged from seeking a job (retired on pensions; or depending on other means of support; prevented by traditional obstacles or by lack of care for children or elderly dependants; or workers discouraged by their unsuccessful search); a number U are registered as unemployed, and the remaining E are the employed. Job vacancies V are a measure of labour shortage. Usually the labour force is defined as those economically active $A=E+U$ but Kornai defines the labour surplus not as U but as $T=M+U$, i.e. including those capable but inactive, his surplus thus corresponding to the Marxian reserve army of labour. T/Q is the rate of labour surplus t , M/Q is the rate m of population capable to work but economically inactive, $u=U/Q$ is the rate of unemployment, $v=V/Q$ the rate of shortage (see Kornai’s table 4.1, p. 91 for a comparison with standard concepts of Labour Market statistics).

I would add to the causes of structural unemployment in the capitalist economy also the downwards rigidity of prices, just as I regard their upwards rigidity as the main cause of shortages under socialism. Downwards price rigidity is also a feature of the labour market, though wage downwards flexibility does not necessarily raise employment in view of its negative impact on workers’ consumption, which in an open economy may or may not be offset or more than offset by higher net exports. Akerlof and Schiller (2009) argue that one of the causes of unemployment is the payment by employers of an efficiency wage higher than the supply price of labour. The efficiency wage minimizes labour costs per unit of output, taking into account the higher productivity obtained at wages higher than the supply price of the same employment: therefore efficiency wages may involve unemployment, although a wage reduction below their efficiency level would never cause higher employment.

Socialist countries were characterized by high activity rates and labour shortage. In the transition after 1990 activity rates fell in line with capitalist countries and unemployment arose. Kornai confesses a healthy “irritation (even outrage)” at reading “that oft-repeated, canonized expression the *natural* rate of unemployment” (p. 92). He distinguishes between Keynesian unemployment due to demand and financial constraints, and structural unemployment induced primarily by Schumpeterian creative destruction due to the dynamism and innovation process. The first is cyclical while the second is chronic, which is why labour surplus is present even at the peak of the cycle, is higher than just Keynesian unemployment and rises with the degree of dynamism of a capitalist system .

Kornai readily acknowledges some collateral damage associated with capitalism, in addition to unemployment. “The shortage economy is ultimately more egalitarian than the surplus economy” (p. 131). Corruption tends to be larger in the surplus economy, where the bribing is done by producers rather than by buyers); indeed the chronic capitalism of State-business connivance for Noam Chomsky is the only form that capitalism takes today. There can be waste in capitalist competition (e.g. in the automotive industry, p. 132-134). But Kornai ultimately professes to be “a believer in the capitalist system” according to his own system of values, for two main reasons. First, because “there is no democracy without capitalism”. Second, because the capitalist surplus economy is the only system able to sustain and drive the continual process of modernization, innovation and rapid technical progress.

Capitalism may be a precondition of democracy but, as Kornai has repeatedly acknowledged (see Kornai 2008), is not a sufficient condition for democracy to thrive, as shown for instance by Hungarian illiberal capitalism or Italian drift towards authoritarian democracy. And the dynamic implications of the surplus economy are subject to a number of qualifications.

6. Some qualifications

First, the contribution of the state to technical progress is under-estimated by Kornai’s acknowledged exclusion of military and space expenditure and

generally the non-profit sector, without which we would not have had most Information Technology (IT) progress including Internet. Conversely, Kornai overlooks the negative impact of prolonged protection of intellectual property on the spread of innovation under capitalism.

Second, there have been recent re-considerations of the role of the state as entrepreneur. Mazzucato (2011 and 2013) notes that, in the most successful market economies, the state goes far beyond its orthodox minimalist role of creating infrastructure, investing in science and education and setting the rules, while leaving the rest to the profit motive in markets. Mazzucato recognizes the plentiful examples of private sector entrepreneurial activity and dynamism in new sectors, funded by private sources like venture capital, but questions their significance.

"Silicon Valley and the emergence of the biotech industry are usually attributed to the geniuses behind the small high tech firms like Facebook or the plethora of small biotech companies in Boston or Cambridge in the UK. Europe's 'lag' behind the USA is often attributed to its weak venture capital sector. Examples from these high tech sectors in the USA are often used to argue why we need less state and more market: to allow Europe to produce its own Googles." But "... the algorithm that led to Google's success was funded by a public sector National Science Foundation grant...", "molecular antibodies, which provided the foundation for biotechnology before venture capital moved into the sector, were discovered in public Medical Research Council (MRC) labs in the UK", while "many of the most innovative young companies in the USA were funded not by private venture capital but by public venture capital such as through the Small Business Innovation Research (SBIR) programme". Beyond the role of the state in stimulating demand, or in 'picking winners' in industrial policy, Mazzucato argues that "there is a case for a targeted, proactive, *entrepreneurial* state, able to take risks, creating a highly networked system of actors harnessing the best of the private sector for the national good over a medium to long-term horizon. It is the state as catalyst, and lead investor,

sparkling the initial reaction in a network that will then cause knowledge to spread. The state as creator of the knowledge economy.”

Such a role of the state is not new, but it has happened in a “hidden way” in order “to prevent a backlash, over the last three decades in the development of the computer industry, the Internet, the pharma–biotech industry, and many more including today’s nanotech industry. None of these technological revolutions would have occurred without the *leading* role of the state.” Large state investments have enabled a decentralised network of actors to undertake the risky research, and “to allow the development and commercialization process to occur in a dynamic way”. The recent history of industrial policy of the USA “shows that despite common perceptions, the US state has been extremely proactive and entrepreneurial in the development and commercialization of new technologies”. Four examples — the Defense Advanced Research Projects Agency (DARPA), Small Business Innovation Research (SBIR), orphan drugs and recent developments in nanotechnology — are used to illustrate this point. “From the development of aviation, nuclear energy, computers, the Internet, the biotechnology revolution, nanotechnology and even now in green technology, it is, and has been, the state not the private sector that has kick-started and developed the engine of growth, because of its willingness to take risk in areas where the private sector has been too risk-averse. In a policy environment where the frontiers of the state are now being deliberately rolled back, that process needs more than ever to be understood so that it can successfully be replicated. Otherwise we miss an opportunity to build greater prosperity in the future.”

In a similar vein, Micklethwait and Wooldridge (2014) talk of a “global race to reinvent the State”: three great revolutions have brought about in turn the nation state, the liberal state and the welfare state, pioneered in Europe and America. They argue that we are now in the middle of a fourth revolution, centered in other parts of the world. In Chinese-oriented Asia, for instance, experiments in state-directed capitalism and authoritarian modernization have ushered an astonishing period of development.

Finally, Kornai's positive assessment of the surplus economy seems to have been somewhat mis-timed, considering both the large-scale costs of the "transformation recession" of transition economies in the 1990s, and the persistence and severity of the current global crisis that began in 2007 and is still rampaging.

Kornai refrains from distinguishing "necessary" from "excessive" capacity reserves, inventories or labour reserves. He writes: "I refrain from these distinctions not because of ignorance but, rather, because I am not able to find the right borderlines. I do not use these categories because they do not exist in the real world". But there can be no doubt that the capitalist system as we know it today has acquired surplus features to an extent that goes far beyond the level that may be regarded as necessary to enhance entrepreneurship and technical dynamism. An unemployment rate of over 12% as in the Eurozone today, with country peaks approaching 50% of youth (aged 16-24) unemployment, cannot possibly be considered as necessary to preserve the technical dynamism of capitalism.

Piketty (2014) analysed the recent generalized growth of wealth and income inequality, which he attributes to the rate of return r on capital being greater than GDP growth rate g . This undisputed fact only makes inequality trends worse, but even if $r=g$ profit would still be more unevenly distributed than labour wages, and accumulation of capital out of profit would be more unevenly distributed than savings out of wages, thus providing a mechanism for increasing inequality of wealth and income over time. And the growth of income inequality is a major factor – via its adverse impact on effective demand - behind the growth of unemployment and therefore the "surplus" nature of the capitalist economy.

The theory of comparative advantage predicts that, with expanding global markets, income inequality in poorer countries should decrease. To date, however, the international record on inequality is at best mixed in the face of recent globalization. Kremer and Maskin (2014) suggest that globalisation may not reduce inequality in developing countries, since skilled workers in

those countries are recruited by multinational companies and see wage rises, while unskilled workers are ignored, so their wages fall.

However governments, instead of playing their role in offsetting such natural trends towards growing wealth and income inequality, or alleviating the deficit in effective demand due to this and other causes, have adopted austerity policies promoted and enforced by international financial organizations and by the EU's Fiscal Compact as a response to the current crisis. Such austerity policies have magnified the surplus features of capitalism condemning it to suicidal stagnation rather than desirable continued technical dynamism (see Nuti 2014²). Capitalism comes in many varieties, depending on alternative institutions and policies: we should not restrict our choice to the stark, defeatist alternative between Soviet-type socialism and neo-liberal capitalism, and never abandon the search for an improved version of capitalism. In his presentation at the WINIR Conference Kornai accepts this, in spite of his skepticism.

Stanislaw Gomulka commented on a first version of this paper that "Our individual views on the merits of each system are not that important. Given the huge variation of views on that subject and the absence of a generally accepted theoretical method to rank systems, what is important is to have the freedom to choose through a generally accepted political process. This is something we did not have under the communist political system."

Unfortunately at present the dominance of neo-liberal ideology, the generalised adoption of austerity policies and the competitive pressures of our globalized world are increasingly reducing the scope for our democratic choice of our preferred variety of capitalist system.

² Nuti (2014) shows that that fiscal consolidation can raise the Debt/GDP ratio, though his proof needs the tacit assumption that the starting position is a balanced budget.

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