Socialism or Barbarism in the 21st Century? China vs. Global North during Capitalist (COVID) Crisis, Inequality and Poverty

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Abstract:

The analyses in **CRISIS, INEQUALITIES AND POVERTY,** complemented by the present analysis and the Chinese case study show convincingly that the crisis-prone World Capitalist System(WCS) will continue to inflict great harm on the most vulnerable people in society. Consider also the real presence of aggressive imperialism fostered in the advanced countries through the finance capital, and structural compulsions of the WCS. The dangers of global confrontation and war mongering particularly by the ruling classes in the US with segments of EU and Japan following are real. The choice between the two paths acknowledged even by a prescient bourgeois economist like Schumpeter is clear. Schumpeter had presciently pointed towards the dire possibility of global conflagaration which now looks all too alarmingly real. Being somewhat of a pessimist, he was reluctant to see the prospects for a progressive peaceful socialism although he acknowledged the possibility of a non-capitalist future also. To be fair to him, the legacy of socialism in the 20th century has been ambiguous at best. The Chinese case since 1978 is particularly interesting from this standpoint. Clearly there are many ambiguities in the Chinese case also---not the least being the restoration of hierarchical management and stifling of grassroots democracy that existed during the Yenan period and at the post-1949 revolutionary moments. But it must be acknowledged that however imperfect or ambiguous, the non-capitalist elements of the complex social, economic and political entity called PRC have managed both the 2008-9 global financial crisis and the COVID and other current crises so far much better than the US-led WCS. One can only hope that with further democratic socialist oriented reforms and future revolutions in these directions in parts of WCS, the world can avoid the dire conflagaration feared by Schumpeter and Arrighi among others. Not only this hopeful negative result of avoidance, PRC has also shown that even in a WCS dominated by neoliberal ideology, it is possible to move towards a path of moderate prosperity by following an alternative ---however imperfect---to neoliberalism, and one hopes, peace. The crucial question, of course, is if PRC can control the private capitalists and pro-capitalist state and party elements. Only if this crucial precondition is fulfilled will PRC be able to reduce various kinds of inequalities, and practice a Socially Embedded Intersectional Capabilities Approach(SEICA). A SEICA-inspired egalitarian capability enhancing policy regime in PRC and other countries will help to move towards more advanced forms of democratic socialism globally. Moving forward, although by no means a sure prospect, China in the 21st century may even lead a new genuinely socialist bloc in our time. If PRC fails to do this, other revolutionary actors in other parts of the world must carry the torch of egalitarian and democratic socialist movement forward. Rosa Luxemburg was right: we have to choose in our life time between socialism or barbarism.

Keywords: World Capitalist System(WCS),China, Capitalist Crises, Uneven Development, Post-covid world, Socially Embedded Intersectional Capabilities Approach(SEICA),Socialism or Barbarism

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1. Introduction :

It is now May, 2023. We are in the midst of a new capitalist crisis after the recent COVID crisis. Given the analysis of the deep underlying dynamics of global capitalism that the book by two Italian scholars, ***Crisis, Inequality and Poverty*** laid bare, what can we expect? To answer this question, we can take--- like the authors of ***Crisis, Inequality and Poverty*** --- uneven and combined development(UCD) and stress points of the contradictory global capitalist system(GCS) as a point of departure. The move towards authoritarianism by some fractions of the capitalist class in many advanced capitalist countries should be viewed in light of this dialectical and historical materialist approach. But politics and economics both---most importantly, politics---require concrete analysis of concrete conditions. The authors of **CRISIS, INEQUALITIES AND POVERTY** have done this admirably; I will clarify some aspects of the connections among WCS(World Capitalist System), UCD, Inequality and poverty and draw some tentative conclusions about the possible future trajectories of GCS. More importantly, I will try to assess the prospects for moving away from the class divided racialized and patriarchal capitalist class societies towards a higher form of socio-economic system after the current crisis.

Many of us including the authors of the present book have explored how the crisis-ridden dynamics of uneven development particularly for developing economies emerges as part of the normal GCS dynamics. This can be done within a conceptual context of complex systems dynamics in the GCS that includes a metropolitan center and its opposite, the periphery. In between the two there can be a small group of emerging economies---exemplified earlier by the East Asian tigers and now by the special case of PRC which is discussed later in contrast with COVID-crisis affected capitalist countries.

1.1: On Crisis, Inequalities and Poverty within a global ecological imperialist political economy with real competition:

In my other works in the reference section, I have covered systematically and sequentially the following areas that are dialectically interrelated:

1. Uneven Development in the semi-periphery and periphery
2. Real Competition and Uneven development in the semi-periphery and periphery
3. The East Asian Strategy of Capitalist Development in the periphery and semi-periphery.
4. Limits of the East Asian Strategy of Capitalist Development in the periphery and semi-periphery. What could at least a partial democratic socialist development be?
5. The ambiguous case of industrialization and innovation in PRC

Much of this work has clear points of contact with the arguments developed so admirably by the authors of **CRISIS, INEQUALITIES AND POVERTY** . Why the PRC case is ambiguous in systemic terms even when it has succeeded on so any fronts including recovering from COVID crisis will be explained after I cover China's success in contrast with the capitalist countries' failures in some detail necessary for looking at possible futures.

In GCS, there can be much disorder at the micro level and yet there can also be the emergence of order at the macro level out of this disorder. This pattern of the capitalist order/disorder dynamics in the developmental economies can be explored theoretically by a series of real abstractions from the experience of developing economies within the uneven GCS development itself. This theoretical approach can explain some of the key stylized features of the components of the system. Some limits of policies and of the so-called developmental state capacities can also be identified through this analysis.The transnational dimension which was always important from the beginning of WCS has assumed an increased cross-border trade and finance in the age of monopoly finance capitalism.

As the book points out:

> The transnational concatenation that changed the configuration of inter-imperialist struggle so that it was no longer cleanly divided along nation-state lines, has resulted in capital seeking greater penetration into the global market. As such, the predetermination of an investment's association with a currency area has come to override its mere geography, something that would also explain why some financial centres develop at the expense of others…. [W]e see characteristics of a desperate pursuit of the "real economy" within the current international division of labour: production chains; dislocations; outsourcing, subcontracting on a global scale; Euro-Asian corridors and other transport infrastructure; talk of "competitive advantage"; centralisation and transformation in international ownership structures; the upending of the relationship between supra-state organisms and nation states; privatisations (where they are seen to be more efficient); the list could go on. On the other are the features of a "monetary economy" seeking a hegemonic redefinition of the currency areas towards a unified global market.

As Arrighi among others has pointed out in his superb history of global capitalism in his 1994 book, *The Long Twentieth Century*, financialization of capitalism in ever increasing scale has been a constant element in the evolution and expansion of global capital.[1]It is important to understand the transnational nature and specificities of the current crisis, however.The authors are right when they write:

> The media depiction of currency conflict as a simple question of the prices of different currencies – resulting from mere exploitation of the exchange rate – is useful for the ruling classes because it obscures the fierce fratricidal conflict between factions of capital, which in the current phase has developed into a struggle to subsume the largest number of dominated countries within a currency area, in the hope of countering the natural compression of the rate of profit. This is done by working to lower the cost structures of financial holding companies in the dominant countries in relation to the final sales prices. However, as this can only incidentally alter the mass of *new* value produced, especially in a phase of acute crisis such as we are currently living through, its effect is to damage in inverse proportion other capitals' capacity to accumulate in an already sluggish situation.

The book, **CRISIS, INEQUALITIES AND POVERTY** has presented a lucid case of failures of the Global Capitalist System(GCS) in handling COVID crisis and the implications of this colossal failure. The book has also explored by using modern concepts and measurement techniques for

[1] For further analysis and as background for the discussion of the Chinese case, see also Arrighi(2007), Arrighi, Giovanni, Po-keung Hui, Ho-Fung Hung and Mark Selden. (2003).Arrighi, Giovanni and Beverly J. Silver. 1999. Chaos and Governance in the Modern World System. Minneapolis, MN: University of Minnesota Press.Braudel F., (1958);Gunder Frank A., (1998);De Vries, Jan (2008). Hayami, Akira (2015). Sugihara Kaoru. (1996).Sugihara, Kaoru. (2003).Smith, Adam. (1961)

inequality and poverty, the dire impact of COVID crisis which stemmed from a mixture of both exogenous and endogenous factors and, other, endogenous crises of the GCS, particularly in its neoliberal ideological form. In this afterword section,it may be helpful to look at the performance of a complex political economy which is at least quasi-socialist but also has developed some capitalist features. This is China and a concrete theory-based multisectoral empirical examination of the Chinese case can contrast meaningfully with the analysis of current capitalist order offered in **CRISIS, INEQUALITIES AND POVERTY**. In this analytical and factually-grounded analysis---and counterfactual analysis via an appropriate model---we can pose the question of alternative futures scientifically. Some may be surprised to see that such contrastive analysis consistent with the dialectical dissection of the WCS in **CRISIS, INEQUALITIES AND POVERTY,** analytically supports the prescient prediction of Rosa Luxemburg on the eve of the first world war. The choice in the 21st century just like it was in the 20th century is between the WCS and breaking away from the WCS towards a more sane society and mode of production. Only, given the ongoing ecological crisis, the crises are more multidimensional and the choices are even more stark in our century.

It is interesting to note that approaches like the above are actually rooted in classical analysis of Marx and Lenin. I have tried to trace the lineage of this line of work including my own work on ecological imperialism in this manner. Let me give the reader a summary picture of this lineage including Anwar Shaikh's work on real competition and crisis which I have developed elsewhere. This will make the nuances of the case study of China that follows clearer.

Marx never made a systematic theoretical and empirical analysis of the development of capitalism in the non-capitalist parts of the world in his time. One widely quoted remark found in the preface to the first edition of *Capital* has been seized by many scholars as Marx's definitive position:

> "… the country that is more developed industrially only shows, to the less developed, the image of its own future."

Yet Marx was aware of the complexities of the actual development of capitalism in specific countries, for he avers in the same preface that the backward country "suffers not only from the development of capitalist production but also from the incompleteness of that development."[i] A uniform law of development of capitalism in each country would be particularly attractive to a positivistic social science. But was Marx a positivist? On the basis of a particularly clear statement by Marx (reproduced below) and other internal theoretical evidence in Marx's writing, Miller (1984) pronounces Marx to be a non-positivist. According to Miller, in the following passage Marx "emphasizes two features of his theory of history that would rule it out as unscientific if the positivist account is right."

> In several parts of Capital I allude to the fate which overtook the plebians of ancient Rome. They were originally free peasants, each cultivating his own piece of land on his own account. In the course of Roman history they were expropriated. The same movement which divorced them from their means of production and subsistence involved the formation not only of big landed property but also a big money capital. And so one fine morning there were to be found on the one hand free men, stripped of everything except their labour power, and on the other, in order to exploit this labour, those who held all the acquired wealth in their possession. What happened? The Roman proletarians became not wage labourers but a mob of do-nothings; more abject than the former "poor whites" in the South of the United States, and alongside of them there developed a mode of production which was not capitalist but based on slavery. Thus events strikingly analogous but taking place in different historical surroundings led to totally different results. By studying each of these forms of evolution separately and then comparing them can easily find the clue to this phenomenon, but one will never there by using as one's master key a general historical-philosophical theory, the supreme virtue of which consists in being super-historical.[2]

Furthermore in *Capital* Marx also argues that the development of capitalism or any economic structure for that matter may show "infinite variations and gradations in appearance which can be ascertained only by an analysis of empirically given circumstances."

If Miller's interpretation of Marx's historical method and Marx's own statements are taken *prima facie*, then Marx's view of the development of capitalism in previously non-capitalist parts of the world after the first flowering of industrial capital as a social relation in England, must be seen as fairly complex, in principle. What Marx discovered were some crucial (and approximately true) general tendencies of the development of capitalism. However he had no explicit theory of development in the periphery and semi-periphery in the Global Capitalist Order(GCO) which includes both uneven geo-economic development and political and economic governance systems with Gramscian hegemony or simple domination as the case may be depending on concrete evolutionary conditions.. However, elsewhere I have tried to articulate this with the help of Marx's concept of the circuits of capital and their uneven development. Without rehearsing these again here we can move to what is perhaps the first significant Marxist analysis of capitalist development and underdevelopment in what we will call today the semi-periphery of GCO in the late 19th century.

In Lenin's *Development of Capitalism in Russia* (1899) one already finds a superb analysis of capitalism in a backward country. Some dependency theorists (Cardoso, 1974) have actually sought the authority of this book to give a 'Leninist' flavor to their views.

In arguing against the Nardoniks' position of instant socialism in Russia, Lenin presented a two-sided argument in 'the Development.' On the one hand, contrary to the Nardoniks' claim he argued that capitalism was developing in Russia. At the same time and because of this (uneven) development, the possibilities for development of proletarian politics and a complex transition path to socialism under concrete conditions were also there. This view, quite plausible within the then existent Marxist tradition, is not without a certain internal tension, however. For the moment, let us note the special features of capitalism in late 19th century Russia which Lenin discovered. The

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[2] (Letter from Marx to the editor of the *Otecestvenniye Zapisky*, Nov. 1877, *Marx and Engels Correspondence*; International Publishers (1968))

data showed the capitalist development of Russia to be real. Nevertheless, the rate of this development was extremely slow and the extent was quite uneven.

The latter feature was not surprising in itself, since the development of capitalism in Western Europe was also marked by unevenness. But the tardiness of the development and the persistence of traditional, seemingly pre-capitalist forms (another discovery of Lenin), needed explanation. Here Lenin relied on both an analysis of the internal development of class structure in Russia and the external factor of competition from Western European capitalism and at the same time a capital inflow from the center. The striking feature of this early analysis is the way Lenin combines the external with the internal. The capital from Western Europe accelerated the industrialization and helped the emergence of a bourgeoisie in Russia. At the same time, the weak and dependent nature of the Russian bourgeoisie, partly a result of its domination by foreign capitalists, prevented the development from being rapid and widespread. As Palma correctly points out, Lenin actually gave a great deal of weight to the survival of traditional structures in Russia in his explanatory scheme. Quoting Marx's earlier remark regarding the incompleteness of capitalist development in a backward country, Lenin refers to the 'abundant survival of ancient institutions that are incompatible with capitalism'. At the same time, Lenin notes the linkages, at least in production, between the factory and the handicraft industry or more generally the traditional, pre-capitalist and the modern, capitalist organizations of production. Thus we can detect an uneven and turbulent dynamics of the circuits of capital in Russia.

In summary, Lenin in 1899 saw the development of capitalism in Russia as a slow motion replay of the development of capitalism in Western Europe. At the same time there is recognition of a complex interaction between the external and internal factors. The political conclusions drawn by Lenin from 'the Development, as well as his subsequent studies including "Imperialism ..." form the subject of a separate paper and will not be pursued here. What is important to emphasize is that capitalism from its very inception has been a system with expansionary drive rooted in real competition. Therefore, the global scope of capitalism is a logical development of inherent tendencies of capital. However, it takes place within a historically and politically determined spatial configuration. In modern capitalism, this has been the system of nation states. Furthermore, capitalism both in this global system and within nation states develops unevenly over time through a turbulent process. A crucial aspect of this uneven development is the increase in inequalities *ceteris paribus*.[3]

1.2 Real Competition, Uneven Development, Crisis and North-South Divide in the Age of Pandemics

However, there is one lacuna in Lenin's classical work that is relevant to mention here. Like most Marxists of his time, he did not see the role of what Shaikh calls real competition in the classical political economy tradition, as crucial albeit in a highly uneven context in the development of capitalism in Russia and other underdeveloped parts of the world. Here indeed, the idea of GCO comes into its own. In many ways, as Marx's chapters on primitive accumulation in Capital Vol. 1 discuss, capitalism has been tendentially a global order right from its beginning. Yet, the historic

[3] This was observed in classical Marxian literature. For more recent literature see, Khan(1983,1997a,b; 2002,2004 a,b; 2006, 2012,2017a,b), Picketty (2014), Shaikh(2016), Franzini and Pianta(2017) and Khan and Thorbrecke(1988,1989).

development of a GCO did not reach its maturity till the end of the 19th century. More than any other historic event, the conference in Belgium for the partition and plunder of Africa can be seen as the crucial historical marker for the maturity of GCO. Given the views of the 2nd international and Lenin's mentors such as Plekhanov, it is not surprizing that Lenin did not see the real competition as the dynamic factor in mature capitalism and its earlier evolutionary stages as well. Perhaps what should come as a pleasant surprize is that even without a sufficient theoretical anchor—or put more strongly, with a partially wrong and largely economic determinist anchor---Lenin empirically identified both external competition and complex internal factors working dialectically to produce a puzzling array of development and underdevelopment in Russia. Later, Gerschenkron would develop some of these ideas---without analysing the implications for revolution---in his famous works on "advantages of backwardness".

In chapter 6 of his *magnum opus*, *Capitalism: Competition,Conflict,Crisis*(2016), Shaikh takes up the idea of profitability and its relations to capitalism before moving to the second part of his book on "real competition" in classical political economy. Chapter 6 delivers an analytical definition of capital, discusses the determination of aggregate profit, and the details of their measurement. With this analytical apparatus at hand, in chapter 7 Shaikh points out correctly:

> Capital is a particular social form of wealth driven by the profit motive. With this incentive comes a corresponding drive for expansion, for the conversion of capital into more capital, of profit into more profit. Each individual capital operates under this imperative, colliding with others trying to do the same, sometimes succeeding, sometimes just surviving, and sometimes failing altogether. This is *real competition*, antagonistic by nature and turbulent in operation. It is as different from so-called perfect competition as war is from ballet.
>
> The mobility of capital is inherent in its existence. Capital tied up in labor, plant, equipment, and inventories is fixated and must be used up or sold off before it can adopt a new incarnation. But fresh money capital, borrowed or garnered as profit, always looks over the available list of avatars before making its choice. The profit motive rules in all cases.
>
> Real competition is the central regulating mechanism of capitalism. Competition within an industry forces individual producer to set prices with an eye on the market, just as it forces them continually try to cut costs so that they can cut prices and expand market share. Cost-cutting can take place through wage reduction, increases in the length or intensity of the working day, and through technical change. The latter becomes the central means over the long run. (Shaikh:260)

More than any modern Marxist theory of imperialism---Leninist or otherwise--- the theoretical concept of real competition explains why under some conditions which are quite plausibly present particularly during the expansionary phases of capitalism in advanced centers, there is a tendency to expand abroad. But strikingly, the tendency is present---indeed it might be a compulsion--- for capitalists of the center to invest abroad even during downturns as profitability sinks lower and lower in former centers of accumulation. But there is also a tendency to hoard capital, or with state fiscal-monetary intervention without tightened financial regulations, pursue speculative financial activities.

Shaikh further draws out the implications of real competition that will have important roles to play in the interpretation of our formal models in the appendix---the most important of these formally being the idea of turbulent equilibration:

> Real competition generates its own characteristic patterns. Prices set by different sellers are roughly equalized as each tries to gain an advantage over the other. Profit rates on new investments are also roughly equalized over somewhat longer periods. Both of these processes result in perpetual fluctuations around various moving centers of gravity. This is the classical notion of *turbulent equilibration*, very different from the conventional notion of equilibrium as a state-of- rest... Supply and demand are part of the story, but their roles are not decisive since both can change in response to profit opportunities (Sraffa 1926, 538–539).

> The notion of competition as a form of warfare has important implications. Tactics, strategy, and resulting prospects for growth are central concerns of the competitive firm. In turn, the relevant profit must be that which is defensible in the medium term, which is quite different from the notion of short-term maximum profit emphasized in neoclassical theory. *In the battle of real competition, the mobility of capital is the movement from one terrain to another, the development and adoption of technology is the arms race, and the struggle for profit growth and market share is the battle itself...*

> It is important to understand that price equalization due to competitionbetween sellers, as well as profit rate equalization due to competition between investors, always give rise to unintended outcomes. Prices tend to equalize because buyers gravitate toward the lowest price, which forces other sellers to adjust their own prices. Similarly, profit rates tend to equalize because investors flock to higher rates of return. This accelerates supply relative to demand in the favored industries and drives down their prices and profits. The rush toward riches close the gaps that initially motivated the agents while opening up new gaps which feed new arbitrage movements. The turbulent equalizations of prices and profit rates are quintessential emergent properties. (Shaikh 2016:260; emphasis added)

This mobility of capital globally with turbulent equilibration tendencies and emergent properties is the disordered "order" of capitalism globally. What mainstream economists after WWII chose to call the then new field of development economics can be more realistically and scientifically viewed as one part of the turbulent evolution of GCO. Let me elaborate by looking critically at the most important early "classical" model of dualism by W. A. Lewis and refer to a new formal version of a "dual-dual" model that pushes it more in the direction of real external and internal competition approach discussed above.

Lewis himself was aware of the quasi-Ricardian roots of his model. Without rehearsing the details, we can recall that the modern sector is the capitalist sector and generates growth. In this process of "development" surplus labor is released by the traditional agricultural sector. One can add a Harris-Todaro type migration model and arrive at a fully specified general equilibrium with straightforward linearized dynamics.

There are several problems with Lewis' and all subsequent formulations of dualism, however. Just to mention two that I think are most critical, the absence of capitalist development in agriculture is analytically misleading and historically inaccurate. Without such a dynamic capitalist ---at least tendentially—agriculture, the source of surplus labor seems to be overpopulation. This is unhelpful analytically. With dynamic capitalist agriculture, reverse migration from urban to rural areas

particularly during downturns may be quite significant. At any rate, this lack of dynamic thinking about an explicitly dynamic problem points to a second, even deeper theoretical problem. This has to do with equilibration. Although Lewis starts out by invoking classical ideas, his equilibria are entirely neoclassical. This is made clear in the subsequent versions of Ranis, Ranis and Fei and Fields models[4]. In Svejnar-Thorbecke(1982), there is an ambiguous formulation that could be interpreted as a deviation from the neoclassical formulation but no explicit analytical statement is made by these authors. Khan(1983) was the first theoretical generalization of dualism multisectorally. More importantly, chapter 2 of this work drew out historically the roots of dualism and formulated an early turbulent equilibrium-seeking version, later refined in Khan and Thorbecke(1988) and Khan(1997a,b). To put it sequentially from 1983 onwards, Khan(1985), Khan and Thorbecke(1988,1989), James and Khan(1993,1997,1998) and Khan(1997 and 1998) made more explicit the classical type of equilibria that are required for multisectoral dualist model dynamics. Jung and Thorbecke's empirically implementable dual-dual structural CGE model is refined and extended further technically and conceptually by Khan(2004, 2006, 2007) in the direction of turbulent equilibria in a dual-dual model.[5] What is important in this debate is to realize that a classical model of capitalist development in the formerly noncapitalist parts of the world can be formulated within the GCO via the concepts of real competition and turbulent equilibria. Khan,Judzik and Spagnolo(2016) extended this analysis to capabilities transformation in a learning economy. Keeping this overall dynamic framework in mind, let us now turn to the interesting case of PRC since the COVID crisis began.

1.3: **From Crisis, Inequalities and Poverty within a global ecological imperialist political economy with real competition to the contrastive case of China and Global Futures: Socialism or Barbarism**

The case of China in responding to the economic and public health crisis of COVID-19 stands out for a number of reasons. While the initial outbreak of COVID-19 was first identified in December 2019, the national health crisis had peaked and gradually stabilized after about mid-March of 2020. From January to February of 2020, the Chinese government imposed a series of strict containment measures including large-scale lockdowns and social distancing protocols across China. The timeliness and uniformity of these containment measures are identified to have successfully "flattened the curve" of infections across China's mainland (Peirlinck et al. 2020). However, acute economic shocks resulted from these containment measures.

Although the impacts of COVID-19 have weakened their economy, China had emerged in a stronger economic position relative to the rest of the world. The effectiveness of the government in containing the pandemic enabled the relatively quick recovery of the economy at a time when other major economies in Europe, and the Americas, and even Japan lagged far behind China in terms of pandemic containment and re-opening. A partial reopening of the economy coupled with the provision of industrial subsidies enabled the rapid recovery of fixed-asset investments, leading to a V-shaped recovery in economic activity. In a global sense, the restoration of industrial production in China connects their own economic recovery with that of the Asian region as a whole and many foreign countries in Latin American and Africa with which trade links are strong.

[4] These models are discussed in Khan(1983) and Khan (1997) chapter 2.
[5] The formalizations of all these models can be found in the references listed in the bibliography.

In contrast to investment spending, domestic retail sales had recovered at a more stagnant pace throughout 2020, reflecting the weakened state of domestic and foreign demand (Sutter and Sutherland 2021). Retail expenditures have seen a substantial jump in early 2021 thanks to seasonable consumption patterns though this rebound has not been sustained through the year as growth rates for both retail sales and investment spending peaked in January and declined steadily after. These trends may point to a corrective process as China's speed of recovery stabilizes at a slower pace. However, the growth of retail sales expenditures by April 2021 have failed to meet expectations, leading to growing concerns among experts of the unbalanced nature of the present recovery and doubts as to its stability over the medium-run (Cheng 2021).

Although investments remain the most important component of aggregate demand in China, the domestic market has increased in importance in recent decades. This is particularly true after 2010 with the appreciation of the Renminbi, rising wage rates, and the saturation of export markets with Chinese goods (Lau 2020). Accordingly, policy measures aimed at stimulating recovery from the impacts of COVID-19 have shifted attention from employment stabilization toward demand-side management. This shift in policy measures are core components of the newly-emphasized Dual Circulation policy, announced in the Central Committee's May 2020 Report on the Work of the Government.

The term "Dual Circulation" traces back to fundamental reforms in the late 1970s and 1980s which led to the liberalization of the economy and China's turn toward export markets. In leveraging a relatively low-cost labor force to develop export-intensive industries, China's internal economic development ("domestic circulation") would be driven by export-led growth and the expansion of "international circulation." The original usage of the term stressed the relative importance of "international circulation" in supporting the development of "domestic circulation." In practice, this involved large flows of foreign direct investment (FDI) in China, concentrated mainly along urban centers on the coast starting with the export-oriented special economic zones (SEZ). Comparatively, investment in Western interior provinces and rural areas had been geared for the development of primary industries to secure flows of raw materials for urbanization and the development of coastal industry (Fan 1997).

At the same time that exports as a share of GDP have increased since the 1980s, China has seen some of the fastest recorded growth rates in recent history. This rapid growth of output is behind the secular increases in standards of living and substantial declines in the level of absolute poverty observed in the process of China's development. However, this period has also seen substantial increases in income and wealth inequality. Among the main identified drivers of inequality in China are the rural-urban income gap, which is based on differences in access to education and the growth of skill premia in urban agglomerations (IMF 2018).

China's guiding export-led vision of development was challenged with the onset of the 2008 global financial crisis. Collapsed export markets and their weak recovery called into question the long-run sustainability of export-led growth. Turning inward, the government initiated a program of subsidizing the expansion of domestic markets and promoting the development of interconnections between domestic markets and industry. This was done using tax breaks for the production of manufactured goods for domestic consumption, as well as direct subsidies to rural households for

the purchase of domestically-produced goods (Wilde 2021). Thus, in a dialectical fashion the contemporary usage of "Dual Circulation" came to refer to the state-subsidized growth of domestic markets as a buffer of support for export-led sectors in times of global crisis.

Since 2015, Dual Circulation has increasingly taken the form of supply side reforms including import-substitution-industrialization (ISI) in high-tech manufacturing. The overall goal of these reforms is to pursue independence from foreign markets in critical "bottleneck" areas like energy, chemical products, and semi-conductors. The overall threat of supply chain shortages for import-intensive sectors has been realized with the onset of COVID-19 as a global pandemic. With a combination of demand and supply-side shocks the pandemic has interrupted global recovery and generated lasting economic impacts across global markets and key trading partners. Aside from the immediate concerns of hunger prevention and targeted poverty reduction, responding to the pandemic with a view toward sustainable recovery will necessitate the expansion of domestic markets and indigenous innovation in high-tech manufacturing, biopharmaceuticals, and energy. Of critical importance for the treatment and containment of disease in China is the role played by indigenous knowledge systems (IKS) in healthcare including the development of vaccines and innovation in the use of traditional Chinese medicine (TCM) for the treatment of COVID-19 (citation needed). As we demonstrate in a related paper (Khan and Szymanski-Burgos, forthcoming) further investment in IKS will be an important component for improving economic and social resilience to future pandemics.

Beyond the acute impacts of COVID-19, there are a number of additional factors behind the weakness in consumption expenditures such as uneven growth of output and employment across regions, an increase in household and corporate debt, and the onset of trade frictions that threaten to undermine China's export-led growth strategy (World Bank 2020). One persistent barrier to the recovery of consumption expenditures are structural inequalities between urban and rural populations and across regions. The impacts of the pandemic are known to make economic and social inequalities worse (Pires et al. 2020). On one hand, low-income communities find themselves more exposed to infection due to public-facing employment and housing circumstances that make social distancing prohibitively difficult. On the other hand, the loss of incomes during the pandemic-driven recession disproportionately affect workers in the informal sector, low-skilled workers, service-sector and construction workers, and the self-employed.

Although the spread of infection to rural communities in China was relatively minimal, these communities have experienced disproportionate economic impacts including high unemployment, loss of household income, price inflation, and disrupted student learning (Wang et al. 2021). Unemployment in the early months of the pandemic are estimated to have risen to virtually 100% for many rural villages in Central China where residents were entirely dependent on working in cities (Wang et al. 2020). Even after quarantine protocols were lifted, rural unemployment remained very high (upwards of 60%) through March and April, implying substantial and lasting effects on income loss for rural households. China's large proportion of rural residents are an important driver of economic activity and constitute an enormous source of drag under extraneous conditions. These estimates suggest that economic recovery in rural areas has been significantly slower than in urban areas in spite of the stabilization of urban employment opportunities for migrants.

The goal of this article is to provide a strategic framework for sustainable demand-led recovery. Our framework is framed at the outset by a socially-embedded intersectional capabilities approach (SEICA) (Khan 1998; Khan 2021*)*. This approach views development as a democratic process where important feedback loops link macro-level outcomes with the material well-being of disadvantaged and minority groups. We aim to assess and help direct the strategic allocation of resources for counter-COVID-19 fiscal expenditures in light of China's Dual Circulation policy. This is done on the basis of socioeconomic modeling using input-output (IO) multipliers. As a complement to Khan and Szymanski-Burgos (forthcoming), we focus on both immediate and medium-run impacts of direct economic stimulus by exploring a range of economic multipliers and modeling the employment effects of direct fiscal injections as part counter-COVID-19 expenditures. The following section focuses on a break-down of the Chinese response to the public health and economic challenges of COVID-19. Next, we provide a detailed description of multiplier analysis using a national 153x153 input-output (IO) table for 2018 and discuss the possible integration of indigenous knowledge into our schema. Then, we turn to an outline of findings regarding the structure of the Chinese economy and on this basis, identify *counterfactually* key strategic areas where targeted spending could generate the widest benefit, particularly for the disadvantaged and vulnerable groups.

2. Time Horizon for Optimal Planning

To inform optimal decision-making we highlight three distinct time frames specific to the case of China's exposure to the public health crisis and the economic impacts represented by the COVID-19 shock:

1. Addressing the immediate crisis from the initial outbreak through to the first quarter of 2020 (December 2019 - February 2020),
2. The restorative phase during the gradual reopening and restoration of economic activity throughout the year (March 2020 – March 2021),
3. Planning for going beyond 2021 consistent with China's long-run economic goals specified in the Chinese Communist Party's (CPC) 14th Five-Year Plan (2021-2025).

Of the three time periods, the first two were the most critical in terms of overcoming the challenges of containing the spread of infection, preventing shortages, and implementing incentives to ensure an optimal restorative path.

2.1 The immediate crisis: December 2019 to February 2020

On January 25th 2020, the Central Committee issued a series of nationwide pandemic control protocols requiring all public spaces, businesses, and schools to close down and implementing strict stay-at-home orders and travel restrictions. These measures coincided with the ongoing Lunar New Year festivities, a time when millions of migrant workers had traveled home to rural areas or were caught in the process of returning when lockdowns were introduced. Travel restrictions and pandemic controls lasted through late February and early March, with regional quarantines easing at variable rates depending on local severity.

The strict January and February nation-wide lockdowns and containment measures were successful in preventing the spread of infection to critical levels in both urban and rural areas. The public health response in China is distinguished for its effectiveness in preventing the spread of

infection and the Chinese case is increasingly used in the epidemiological literature as a benchmark for rapid containment.[6] Yang et al. (2020) highlight the critical importance of the timing and uniformity of lockdown implementation. They estimate a five-day delay in implementation would have tripled the number of infected, while lifting the province-wide Hubei quarantine prematurely would have resulted in a dramatic second peak and extended the pandemic into late April. Another point of distinction in the public health response relates to the fact that the Chinese government has traditionally not ignored the role of traditional knowledge systems in employing locally-viable solutions for indigenous communities. TCM is widely encouraged and sanctioned by the government for use in preventative healthcare and for use in public health crises as during the 2003 SARS epidemic and COVID-19.

2.2 Economic Impacts and Countervailing Policies from March 2020 to March 2021

By the end of March, the majority of Chinese provinces (with the exception of Hubei and Beijing) had significantly eased restrictions and begun the process of overall recovery. However, the COVID-19 shock led to acute economic impacts with the potential to present lasting effects on recovery. In total, national output declined by 6.8% on a year-to-year basis with disproportionate impacts across sectors in the first quarter of 2020 (Huang and Lardy 2020). The most affected industries were in the accommodations sector, followed by the wholesale and retail, construction and transportation sectors (Liu 2021b). National lockdowns and travel restrictions led to sharp drops in travel flows and national tourism revenues, which severely impacted the most affected industries. Because of the interdependence of various sectors through backward and forward linkages, most sectors in the economy experienced declines in economic activity to various degrees. In addition, the overall public health crisis significantly depressed consumption across much of China. Though many migrant workers were able to return to urban areas to find, unemployment rates in rural areas are estimated to have remained quite high for several months even after travel restrictions were lifted on account of lingering fears of infection and decreased propensity to travel (Wang et al. 2020).

Thanks to early success in pandemic containment, China exhibited a remarkable turn in economic trends, reporting positive economic growth by the end of June 2020. Declines in fixed-asset investments hit their lowest point in February of 2020 before bouncing-back fairly rapidly by the end of the second quarter and into the rest of the year. This recovery was orchestrated in part by fiscal and monetary policy measures targeting the corporate sector much more so than households. Measures including tax and interest rate cuts, state subsidies, and waived social security contributions were aimed at supporting production through medium, small, and micro enterprises (MSMEs) and state-owned enterprises (SOEs), which altogether provide the majority of China's employment base (Zhang 2019; Liu 2021b). The growth of fixed-asset investment experienced a further jump in early 2021 above pre-pandemic levels thanks to lagged positive effects from 2020 investments and the partial recovery of global markets (citation needed). Retail expenditures have also seen a substantial jump in early 2021 during the shopping season. However, this rebound in both investment and retail sales has not been sustained in more recent months as growth rates for both indicators peaked in January and declined steadily after.

While proportionately small, expenditures targeted toward households include unemployment and emergency relief (including food and shelter aid) oriented toward the most vulnerable households.

[6] See Yang et al. (2020), Peirlinck et al. (2020), and Wangping et al. (2020).

Largely at their own initiative, local governments in China engaged in modest efforts to support regional spending through the distribution of prepaid consumption vouchers; however, the magnitude of household transfers remained small and locally-specific. Notably absent from the present stimulus were direct unconditional federal transfers to households that we have seen in the stimulus programs of advanced economies around the world. For some observers of China, the lack of demand-side stimulus during 2020 is a key factor behind the unbalanced recovery (Tang 2021).

We argue that a key component of any successful demand-led recovery requires addressing structural factors that constitute a source of drag in aggregate demand. One such structural source of drag is the large level of income and consumption inequality between rural and urban residents and within urban areas in China (Gradin and Wu 2020). Recently, the Chinese government has made significant efforts to make labor market supports more inclusive for rural and migrant workers, in particular with the extension of emergency aid for rural residents and unemployment insurance for migrant workers. These efforts have been important for protecting incomes in particularly vulnerable communities. Additional priority is being given to the poorest workers to secure employment through state-provided "welfare jobs," presently responsible for employing a large percentage of impoverished rural and migrant workers (Xinhua 2021).

There is still much work to be done on this front. Greater efforts are necessary to generate high-value development and income growth in rural and interior areas. Such an effort would best involve significant public investments in developing an economic base in the tertiary sectors in rural areas, including tourism and accommodation as well as upgrading in the primary sector to higher value-added products in the agricultural and food processing sectors. Notably, high-level development plans are being implemented which include a focus on developing the manufacturing base of key interior regions, like machinery manufacturing in Guangxi Zhuang Autonomous Region (Xinhua 2021). As we will see, assuming necessary imports are drawn largely from within China, such a boost in rural manufacturing promises to generate growth in employment within rural provinces and across China.

2.3 Going Beyond: The 14th Five-Year Plan

The growing size of China's urban middle class is poised to provide a steady future consumption base (Barton et al. 2013), though the COVID-19 shock has imparted considerable drag on the consumption component of GDP. Despite the recent surge in urbanization and rising living standards, China's poorer rural households continue to make up a huge portion of China's population and are likely to require additional government support during the longer-run recovery phase to support the much slower recovery of rural households' consumption.

Rising labor costs in China are beginning to drive patterns of structural change observed in advanced economies. Although the share of service sector employment has not reached the level of Japan or the US, the manufacturing share of employment in China is estimated to have peaked in 2012 (Hou et al. 2017). As the service sector share of employment continues to grow in coming years, government economic policy must prioritize household consumption and industrial upgrading. In line with the longer-run goals of Dual Circulation, recovery policy over the end of the second period and into the third period appears to have shifted from employment stabilization

toward demand-side management while simultaneously engaging in supply wide reforms through major public investment projects over the next five years. Key areas of focus for public investment are in technology-intensive infrastructure projects such as 5G telecommunications infrastructure, comprehensive national high-speed rail networks, electric car charging stations and other "green energy" infrastructure (Liu 2021b).

2.4 Methodology for modeling and counterfactual experiments and scenarios:

The data used for this analysis come from the 2018 national IO table for China, which offers a set of interindustry flows for 153 production activities. This level of disaggregation provides a unique level of details regarding the identification of important sectors and linkages in the economy. Final demand is divided into rural and urban household consumption, government consumption, gross fixed capital formation (investment in fixed assets), changes in inventory, and exports. Total value-added is then distributed among factors of production in the form of workers' compensation, gross operating surplus, production taxes, and capital depreciation.

Although the data does not presently allow, augmenting our IO for indigenous knowledge sectors would be useful for modeling indigenous innovation sectors and identifying the inflow and outflow of resources for this sector. Khan and Rahman (2021) propose a method for integrating indigenous knowledge-based innovations within a social accounting matrix (SAM) for South Africa. By delineating total knowledge production into two sectors, non-indigenous (NIK) and indigenous knowledge (IK), it would be possible to derive their respective production functions and identify the consequences and complementarities between NIK and IK production.

2.5 Matrix Algebra of Multiplier Analysis

The basis for input-output multiplier analysis is the matrix of interindustry transactions. This matrix offers a model of interindustry flows of products and resources within an economy as well as resources flows to institutional accounts including households, taxes, capital incomes, and exports. The interindustry transactions matrix describes the total output of each production sector in the economy as it is distributed among purchasing sectors as intermediate goods and among households and other agents as final goods. Data for interindustry flows are necessary for multiplier analysis because it enables the derivation of the matrix of direct requirements for the economy, describing the direct sector requirements in terms of inputs of sector *i* for a unit of total output in sector *j*. Algebraically, this produces a system of equations with the general form (1) and matrix notation (2):

$$x_i = a_{ij}x_j + y_i \quad (1)$$

$$x = Ax + y \quad (2)$$

where a_{ij} is the technical coefficient representing the per-unit monetary value of input from sector *i* required to produce a monetary unit value of output in sector *j*. In the matrix notation, *x* is a column vector of total output produced by each production sector, *y* is a column vector of output generated by final demand, and *A* is a square matrix of technical coefficients a_{ij}. A fundamental assumption with the use of input-output tables is that, for a definite length of time, interindustry resource flows from sector *i* to sector *j* depend entirely on the total output of sector *j* for the same period of time. Conventionally in IO analysis, we assume this ratio is constant according to a fixed-proportions production function with constant returns to scale.

If the vector of final demand *y* is known, the total output of each sector needed to supply both intermediate and final demand requirements may be found as the solution to the following equation:

$$x = (I - A)^{-1}y \quad (3)$$

where *I* denotes the identity matrix, and the inverse matrix $(I - A)^{-1}$ gives the matrix of total requirements coefficients (Fjeldsted 1980). The product of the total requirements matrix and the vector of final demand *y* give the necessary output required from each of the sectors to satisfy total demand in the economy. The elements of the total requirements matrix describe the direct and indirect sector output effects for change in final demand. By specifying some change in the elements of the final demand vector for instance, along the lines of an increase in government consumption in a given sector, we can use the total requirements matrix to perform an impact analysis of the induced increases in output across sectors.

Summing the elements of the total requirements matrix in column *j* gives the output multiplier for sector *j*. Formally, the output multiplier is defined in the following equation where *l* are the elements of the total requirement matrix for a given column (Miller and Blair 2009).

$$m(o)_j = \sum_{i=1}^{n} l_{ij} \quad (4)$$

The output multiplier refers to the amplified effect of an economic stimulus considering all the indirect effects as money is spent and re-spent over several rounds. For a given sector, the output multiplier measures the combined effect of a unit change in sector output on the output of all industries in which that sector purchases inputs. To produce an additional $100 worth of machine parts requires the additional purchasing of local inputs (e.g. steel, electrical components, and transport services) as well as the purchasing of local labor services. These kinds of relationships are referred to as *backward linkages* (Hughes 2018). Information regarding these backward linkages are captured in our model and used to derive Type 1 output multipliers which together describe the total effects of both direct and indirect increases in sectoral output. An output multiplier of 1.5 indicates that an additional $100 in demand for machine parts will generate $150 in total output spread throughout sector linkages.

An increase in the purchases of local labor inputs following an increase in demand leads to higher household incomes and additional consumption expenditures. Consumption linkages present an additional multiplier effect on the basis of induced increases in output from increased household expenditures. By "closing" our model with respect to households we can derive Type 2 multipliers, which describe the total multiplier effect of direct, indirect, and induced increases in sector output. Closing our model with respect to households refers to the inclusion of consumption linkages as an endogenous sector by including an additional row for labor compensation and an additional column for household consumption in our intermediate matrix that we use to calculate our technical coefficients table.

In order to assess the Chinese government's counter-COVID-19 expenditures we focus also on identifying counterfactually the employment *and income* effects of the current stimulus. In addition to our output multipliers, we derive also employment and income multipliers for each sector. For a change in final demand $y' > y$, we can calculate the necessary increase in labor demand *and household incomes* across all sectors corresponding to these multipliers.

To derive our employment multipliers, we construct a vector of employment coefficients ε denoting the base-year value of employment in each sector divided by the level of sectoral gross output, shown here for a two-sector example where x_i^0 denotes

$$\varepsilon = \begin{bmatrix} e_1/x_1^0 & 0 \\ 0 & e_2/x_2^0 \end{bmatrix} \tag{5}$$

The employment multiplier describes the sector-to-household linkages through the labor market, where its value denotes the direct and indirect increases in the monetary value of labor inputs expenditures. In order to estimate domestic employment effects for an increase in government spending, we multiply our employment requirements matrix ε by y' and then integrate average wage data by sector to produce estimates of employment effects in terms of physical units of employment.

Income multipliers represent the economic impacts of a change in final demand on household earnings and describe how the benefits to growth are distributed to households. By considering household expenditures as endogenous, these multipliers capture information regarding the magnitude of induced output effects which appear in our Type 2 output multipliers. Income multipliers are derived using the technical coefficients for direct labor requirements when the IO model is closed with respect to households. The calculation involves weighting each element in the direct labor requirements (households) row by the output multipliers of the corresponding sector and taking the sum. This relation is described formally in Miller and Blair (2009) where $a_{n+1,i}$ are the row elements of household income receipts from labor compensation by sector as:

$$m(h)_j = \sum_{i=1}^{n} (a_{n+1,i})(l_{ij}) \tag{6}$$

Viewing the results of income multipliers from a socioeconomic lens enables the identification of critical sectors which can be leveraged to pursue strategic commitments for sustained inclusive growth for those in poverty and for disadvantaged groups. The major limitation of IO data in this respect is the lack of delineation between various income or skill groups, accounts which prominently feature in SAMs.

2.6 Some Illustrative Results and Interpretation

The identified panel of input-output multipliers describe the production structure of the economy and its relation to household income and consumption expenditures. The average output multipliers in our model are 2.83 (Type 1) and 3.6 (Type 2). These relatively high values for average economy-wide multipliers are indicative of the level of development of backward and forward linkages in the Chinese economy. These average multipliers suggest that a 1 trillion yuan injection in the economy will return between 2.8 trillion and 3.6 trillion in total additional sectoral

output. These estimates are meant to reflect the lower- and upper-bounds of our modeled stimulus where the actual outcome depends on which sectors receive an increase in government spending as well as households' propensity to consume.[7]

Secondly, we find an average employment multiplier of 10.1[8] and an average income multiplier of 1.24. The high value of the average employment multiplier suggests that aggregate employment growth in China is relatively responsive to changes in final demand, where the increase of 1 job for the average sector may directly and indirectly support up to *9 additional jobs throughout the economy*. This high average is not representative of the typical sector however. Due to particularly robust backward and forward linkages, high employment multipliers are typically concentrated in tradable sectors like manufacturing, information technology, and professional services, which bring revenue flows and capital from outside a local community.

In income terms, every additional dollar of final demand in the average sector may be expected to stimulate additional household expenditures by $1.24 dollars. An average income multiplier greater than 1 in our case indicates that household expenditures indeed provide a significant channel for augmenting the effects of economic multipliers. However, the magnitude of income multipliers by sector varies substantially, indicating significant differences between the consumption linkages of different sectors.

Table 2.1 presents a full table of output, employment, and income multipliers for the top 10 value-added sectors of the economy. Observing our table, we see that the real estate sector contributes the largest share of value-added (VA), followed by the wholesale trade sector, financial services, the public administration sector, and the broad agricultural products sector. The output multipliers for the top 10 VA sectors are generally strong, indicating that they are well-integrated in the economy through backward and consumption linkages. The highest output multipliers are found in the residential construction (3.84), business services (3.79), and agricultural products (3.29) sectors. Notably at this level of disaggregation, all top 10 VA sectors are non-manufacturing.

Table 2.1 Multipliers for Top 10 by VA (in ten thousand yuan)

	Real estate	**Wholesale**	**Financial services**	**Public administration and social organization**	**Agricultural products**
Sector VA	¥ 681,344,741.76	¥ 497,784,169.53	¥ 488,219,705.16	¥ 429,894,799.64	¥ 401,199,459.53
Rank	1	2	3	4	5
%GTVA	7.39%	5.40%	5.29%	4.66%	4.35%
Type 1 Output Multiplier	1.595	1.848	1.976	2.036	1.853
Type 2 Output Multiplier	1.994	2.503	2.688	3.160	3.291
Employment Multiplier	8.796	5.445	5.378	4.001	4.746

[7] Households' propensity to consume is taken as constant and uniform across income or social groups in the standard analysis of input-output multipliers.
[8] Outliers excluded

Income Multiplier	1.178	1.460	2.005	0.529	2.166

	Retail trade	**Residential housing construction**	**Education**	**Business Services**	**Road cargo transportation services**
Sector VA	¥ 379,287,792.70	¥ 326,818,539.27	¥ 315,788,793.37	¥ 245,740,789.85	¥ 208,613,515.71
Rank	6	7	8	9	10
%GTVA	4.11%	3.54%	3.42%	2.67%	2.26%
Type 1 Output Multiplier	1.815	3.079	1.724	2.829	2.313
Type 2 Output Multiplier	2.679	3.835	2.795	3.792	2.892
Employment Multiplier	4.261	7.563	4.008	5.047	7.923
Income Multiplier	1.289	0.153	0.573	2.058	0.975

Source: Authors' calculation for 2018 IO Table

The real estate sector appears to have modest output multipliers relative to rest of the top 10 VA sectors while exhibiting a relatively strong income multiplier (1.18) and the highest employment multiplier (8.79) of the group. These results indicate that the economy-wide impact from a change in final demand for the real estate sector occurs mainly through the employment channel as employment gains in this sector tends to support employment gains in other sectors, mainly through local household expenditures. The relative size of the real estate, financial services, and business services sectors indicate the increasingly central importance of the finance, insurance, and real estate (FIRE) sector in the modern Chinese economy. This fact reflects one of the drivers in income inequality in China: the rise of skill premia. Jobs in the FIRE sector typically require high levels of formal education and are concentrated mainly in financial centers like Beijing, Shanghai, and other highly urbanized areas. These urban skill premia are largely inaccessible for China's large population of rural and migrant workers with comparatively less access to higher education.

Other note-worthy sectors in terms of employment multipliers are residential housing construction (7.56), road cargo transportation services (7.92), and wholesale trade (5.45). Residential construction and road cargo transportation services are sectors employing relatively large numbers of workers and exhibit particularly large employment multipliers. Gains in output and employment in these sectors may be expected to be distributed somewhat more evenly across regions and support employment for both less-skilled urban and migrant workers since construction and transportation activities are not as concentrated as the FIRE sectors. The present stimulus explicitly targets spending in infrastructure construction across various provinces. As we will see, the multipliers for residential housing construction are similar to construction activities in infrastructure and other civil engineering projects. Therefore, we should expect significant direct and indirect gains from increased output in construction and related sectors.

The highest income multipliers for the top 10 VA sectors are in agricultural products (2.17), business services (2.06), and financial services (2.01). These values indicate that the induced effects on output of increased labor demand in these sectors are quite high, however this effect occurs for different reasons. In the business and financial services sectors, this effect arises due to the high average wages earned by the relatively skilled workforce, leading to high induced output effects from the spending of these workers. While the FIRE sectors altogether make up 14% of value-added, they account for less than 7% of total employment. The business services sector however has the 5th largest share of total employment (5.5%). Since actual employment gains in these sectors and their respective income effects may be limited by education requirements and geographic location, the realized economy-wide effects depend largely on the higher propensity to consume of higher-wage earners in these sectors.

In agricultural products, where wages are much lower, this effect occurs because production in this sector remains quite labor-intensive and absolute employment numbers remain high. From the 153 production activities in our dataset, the agricultural products sector[9] commands the largest share of total employment at 13.2% despite a share of total value-added at 4.4%. As would be expected, the broad agricultural sector forms the bedrock for rural economies in China providing large numbers of rural households a source of primary or supplementary income.[10] Though wages are low relative to skilled workers in urban areas, any gains in the incomes for agricultural workers can have significant output impacts on rural communities given the outsized importance of consumption expenditures in rural economies. Moreover, since most employment in the primary sector typically require little formal education actual employment gains may very quickly be realized through increases in final or intermediate demand, meaning that investments in this sector can lead to positive economic effects in the short-run and contribute to addressing acute hunger and poverty. Finally, since rural areas provide markets for domestic goods in other regions, may lead to significant economic impacts that are spread more evenly throughout the economy. However, these income effects do not generally lead to significant impacts in terms of sustained employment gains in other sectors because agricultural products have few backward linkages.

Using production accounts Liu (2021) shows that the some of the largest sectors by share of value-added: wholesale trade, retail trade, and road cargo transportation services were among the most impacted by the COVID-19 shock. The collapse of wholesale and retail trade coincided with the sudden disruption of intercity and interregional commerce and transport flows on account of strict lockdowns. This particular impact of the pandemic has tended to concentrate in regions most affected by the pandemic (Chen et al. 2020). Accordingly, a significant portion of employment losses have been concentrated in broadly pandemic-sensitive service sectors like wholesale and retail trade, business services, and the transportation sector in addition to accommodation and meals, and other related service sectors. Altogether, job losses in these sectors represent the loss of mainly middle and low-skill jobs (citation needed).

Table 2.2 reports multipliers for a set of three service industries that have experienced significant employment losses during the pandemic. Here we find output and employment multipliers that are

[9] This sector specifically references agricultural crops and excludes livestock, fisheries, forestry, and miscellaneous animal husbandry products. Altogether the agricultural sectors make up roughly 25% of total employment in China.
[10] As in the case of migrant workers who work seasonally in urban factories or construction sites and return for work in rural agricultural production for the rest of the year.

generally higher than would be expected for service sectors. Notably, we find higher than average employment multipliers in the meals and food services, and accommodation and hotels sectors. These results highlight the relative importance of these sectors in supporting overall economic activity across regions and as a major source of employment in both urban and rural areas. Declines in service sector output and employment left lasting impacts on the revenues and employment of various other sectors throughout the economy. Given this context, one of the principle challenges of the COVID-19 shock then is to restore domestic demand to pre-pandemic levels in order to boost employment in these and interconnected sectors.

Table 2.2 Multipliers for Pandemic-Sensitive Services (in 10 thousand yuan)

	Meals and Food Services	**Accommodation and Hotels**	**Resident services**
Sector VA	¥ 117,503,013.34	¥ 43,119,338.74	¥ 88,016,448.74
%GTVA	1.27%	0.47%	0.95%
Type 1 Output Multiplier	2.639	2.452	2.016
Type 2 Output Multiplier	3.592	3.321	2.993
Employment Multiplier	6.908	5.019	4.107
Income Multiplier	0.654	0.556	0.511

Source: Authors' calculation for 2018 IO Table

Major employment losses also resulted from manufacturing plant shutdowns in early 2020 (citation needed). The wider impacts of these shutdowns can be traced in Table 2.3, which shows the estimated multipliers for the largest manufacturing sectors in China by VA. The largest manufacturing sectors are electricity and heat production, steel rolled products, coal mining products, metal products, and petroleum and natural gas mining. These sectors feature among the largest estimated output and income multipliers among the manufacturing sectors. [11] Judging by their large employment multipliers manufacturing sectors contribute substantial spillover in terms of direct and indirect employment effects. Given that manufacturing requires a wide-ranging list of inputs, stable manufacturing employment tends to support a large volume of additional output and employment in related sectors and local communities. The sharp decline in manufacturing activity constituted a major drop in demand for intermediate goods throughout the wider economy.

Table 2.3 Multipliers for Top 10 Manufacturing Sectors by VA (in 10 thousand yuan)

	Electricity and heat production and supply	**Steel rolled products**	**Coal mining and processing products**	**Metal products**	**Petroleum and natural gas mining products**
Sector VA	¥ 203,934,895.87	¥ 142,840,345.00	¥ 121,462,438.75	¥ 118,112,728.75	¥ 90,126,121.46

[11] The notable outlier is the refined petroleum and nuclear fuel products sector with an exceptionally large employment multiplier of 61.05.

Sector Imports	¥ 167,346.58	¥ 10,748,552.80	¥ 17,067,535.54	¥ 8,933,652.91	¥ 181,295,520.27
Rank	1	2	3	4	5
%GTVA	2.21%	1.55%	1.32%	1.28%	0.98%
Type 1 Output Multiplier	2.813	2.808	2.236	3.127	1.838
Type 2 Output Multiplier	3.403	3.352	2.932	3.788	2.257
Employment Multiplier	11.863	16.267	5.925	9.586	10.316
Income Multiplier	1.875	0.744	1.003	0.367	1.085
Imports as % of VA	0.08%	7.5%	14.1%	7.6%	201.2%

	Whole cars	**Refined petroleum and nuclear fuel processed products**	**Electronic Components**	**Waste resources and recycling products**	**Auto parts and accessories**
Sector VA	¥ 88,125,836.21	¥ 85,757,375.11	¥ 72,060,214.58	¥ 72,006,612.70	¥ 70,833,823.84
Sector Imports	¥ 11,054,482.11	¥ 90,126,121.46	¥ 23,247,565.52	¥ 24,256,644.04	¥ 24,209,119.43
Rank	6	7	8	9	10
%GTVA	0.96%	0.93%	0.78%	0.78%	0.77%
Type 1 Output Multiplier	3.428	2.560	3.789	1.276	3.492
Type 2 Output Multiplier	4.015	2.935	4.450	1.669	4.142
Employment Multiplier	7.157	61.050	15.845	6.414	15.181
Income Multiplier	0.351	1.194	1.569	0.466	0.704
Imports as % of VA	40.2%	29.0%	341.3%	17.3%	27.3%

Source: Authors' calculation for 2018 IO Table

When considering global value chains and uneven development, where manufacturing is largely concentrated in China's Eastern provinces and in cities, the total magnitude of large national employment multipliers may not always refer to employment created domestically within-country or evenly across regions. Taking national employment multipliers for manufacturing at face value assumes that all value-added activities in manufacturing and ancillary sectors take place within-country (Lawrence 2017) and that value-added are distributed evenly across regions. Distinguishing regional employment effects would require the use of a multi-regional input-output model. Here we can distinguish national employment effects of manufacturing by observing the final row entry for the sectors on Table 2.3 reporting the level of imports as a percentage of sector

VA. We find that the largest manufacturing sectors with the greatest dependence on imports are the petroleum and natural gas, electronic components, and automobiles. The magnitude of import exposure in these and other sectors dependent on imports should raises doubt as to the full effect of the reported employment multipliers since an increase in demand for these sectors raises demand for imports and employment abroad.

An important set of non-tradable sectors for the Chinese economy are in construction and allied-industries. Table 2.4 reports multipliers for three construction sectors and the closely linked professional technical services sector. Among the four sectors we find output and employment multipliers that are high relative to the rest of the economy, particularly in construction related to infrastructure and other civil engineering projects. Because income multipliers here are relatively modest, it is clear that the bulk of output and employment effects are channeled through significant backward linkages. As we will see, construction sectors have significant linkages with local manufacturing and technical services, leading to indirect output and employment effects in these sectors for changes in final demand for construction. Accordingly, work stoppages on construction sites during the height of the pandemic in China resulted in acute ripple-out effects on intermediate demand. These ripple effects are compounded (e.g. construction declines lead to manufacturing declines which lead to further declines) to generate the steep jumps in unemployment characteristic of international experience with the pandemic.

Table 2.4 Multipliers for Construction and Allied-Industries (in 10 thousand yuan)

	Professional technical services	**Railway, road, tunnel and bridge construction**	**Building decoration, decoration and other construction services**	**Other civil engineering construction**
Sector VA	¥ 133,478,272.08	¥ 114,579,968.71	¥ 67,731,788.85	¥ 60,496,539.27
%GTVA	1.45%	1.24%	0.73%	0.66%
Type 1 Output Multiplier	2.724	3.100	2.990	3.102
Type 2 Output Multiplier	3.567	3.898	3.795	3.896
Employment Multiplier	5.467	7.139	6.496	7.207
Income Multiplier	0.565	0.168	0.337	0.166

Source: Authors' calculation for 2018 IO Table

A significant portion of the present stimulus is directed toward public health expenditures. The health services and related sectors constitute strategic sectors for managing the various public health challenges presented by the pandemic including the containment and treatment of disease in addition to vaccine development and disbursement. In Table 2.5 we show a set of multipliers for health services and related sectors. For the health services sector we find significant output multipliers of 2.61 and 3.61 coupled with a relatively modest but significant employment multiplier of 4.59. As will be shown in the next section, the health services sector has significant linkages with the medical products and medical equipment sectors, which in their turn exhibit high

relative employment multipliers. However, all three health sectors present relatively low income multipliers, *likely due to formal education requirements*.

Table 2.5 Multipliers for Health Services and Allied Sectors (in 10 thousand yuan)

	Health services	**Medical products**	**Medical equipment**
Sector VA	¥ 163,270,017.00	¥ 80,278,968.07	¥ 9,857,574.89
%GTVA	1.80%	0.87%	0.11%
Type 1 Output Multiplier	2.612	2.832	3.166
Type 2 Output Multiplier	3.610	3.638	3.881
Employment Multiplier	4.586	10.469	8.253
Income Multiplier	0.347	0.367	0.165

Source: Authors' calculation for 2018 IO Table

The health services sector is well-integrated across regions (Xu and Yang 2009). Although the majority of hospitals are located in cities, up to 99% of health centers and a large portion of town and village clinics are concentrated in rural areas, providing the majority of total health services in China. Healthcare based on TCM or integrated with western medicine is in wide use by rural residents, who account for the largest portion of TCM clients. Household surveys suggest a growing trend among urban residents and college-educated individuals to seek health services in TCM hospitals and clinics (Xu and Yang 2009). Altogether, these facts indicate that the IK sector occupies a substantial portion of the health services sector.

While the provision of healthcare services and products provide direct community benefits, which are often necessary to support overall economic activity, government spending here will also generate robust direct, indirect, and induced effects on economy-wide output and employment.

3.Modeling of Employment Effects After Fiscal Stimulus

This section presents further details for an impact analysis of Chinese Counter-COVID-19 expenditures. We model the employment effects of direct government injection totaling one trillion yuan. These expenditures are distributed as follows: 100 billion yuan are spent in *railway, road, tunnel, and bridge construction* and 500 billion yuan are spent in the *other civil engineering construction* sector as part of infrastructure projects, 300 billion are spent in the health services sector to fund public health and welfare programs, and 100 billion are spent in the public administration for broad support in the accelerated disbursement and extension of unemployment insurance for both urban and migrant workers. This distribution of government spending by sector is roughly representative of the total fiscal package spent in 2020, excluding tax and fees cuts and direct spending in the financial sector. Domestic employment effects are derived in terms of

absolute monetary value of induced labor requirements and in terms of physical jobs using standard sector wages[12] and adjusted for import exposure.

In terms of output effects, the estimated value of additional sectoral output generated in our model totaled 3.05 trillion yuan.[13] The additional modeled employment corresponding to this increase in output amounts to over 7.7 million new domestic jobs. This figure is well within reach of the Central Committee's goal of 9-10 million jobs[14] and it is likely that the remaining gap in desired employment can be generated on the basis of substantial nation-wide tax cuts and subsidized expansion in credit availability targeting MSMEs.

These employment effects are explored in further detail in this section, starting with Table 3.1 which shows the employment effects on the top 10 sectors by VA. We find that the sectors likely to see the most job growth are in public administration followed by agricultural products, business services, and wholesale and retail trade. The large increases in employment for the public administration sector are not surprising given the effect of a direct increase of government consumption in these sectors. However, the indirect effects of the overall stimulus turn out to be quite large, with significant spillover effects in the agricultural products, business and financial services, wholesale, and retail trade sectors. Employment gains of over 2.49 million jobs in the top 10 VA sectors amounts to 32.4% of the total increase in employment for the present stimulus.

Table 3.1 Employment Outcome for Top 10 Sectors by VA

	Real estate	**Wholesale**	**Financial services**	**Public administration and social organization**	**Agricultural products**
Rank	1	2	3	4	5
%GTVA	7.39%	5.40%	5.29%	4.66%	4.35%
Added Value of Labor Input Requirement (in 10 thousand yuan)	¥ 485,755.28	¥ 1,631,806.44	¥ 2,195,257.56	¥ 10,126,670.87	¥ 7,931,413.31
No. of Additional Domestic Workers	69,585	217,546	201,391	965,198	469,969

	Retail trade	**Residential housing construction**	**Education**	**Business Services**	**Road cargo transportation services**
Rank	6	7	8	9	10
%GTVA	4.11%	3.54%	3.42%	2.67%	2.26%

[12] Sector wages are calculated as the national average wage for urban units by sector in 2020, including both private and state-owned enterprises. Wage data are from the National Bureau of Statistics in China.

[13] Indicating an estimated output multiplier of around 3.05 for the modeled stimulus

[14] The goal of additional 9 million comes from the CPC's May 2020 Report on the Work of the Government. The 10 million figure refers to the amount of additional employment needed to have maintained the 2020 annual unemployment rate constant (citation needed).

Added Value of Labor Input Requirement (in 10 thousand yuan)	¥ 1,647,979.99	¥ 0	¥ 181,369.61	¥ 2,018,420.44	¥ 545,563.94
No. of Additional Domestic Workers	220,503	0	23,417	256,680	68,940

Source: Author's calculation for 2018 IO Table

One of the government's main priorities during the economic recovery in the first and second period of the crisis was the stabilization of employment. An important first step to stabilization is to prevent net employment losses at their source. As we saw, the most affected sectors in terms of output and employment were the consumer-facing industries in wholesale and retail trade, accommodation and other allied service industries. Table 3.2 reports the modeled employment outcomes for pandemic-sensitive service industries that were disproportionately impacted by the COVID-19 shock. We find significant employment gains in the reported service sectors. Including the wholesale, retail, transportation, and business services sectors, the overall modeled employment gains for pandemic-sensitive service sectors totaled 985,254 domestic jobs. These results suggest that the present stimulus is generally well-targeted to stem net employment losses, but an important question becomes the speed of the realization of these gains. The actual realization of these gains will come to depend on the speed of recovery of domestic consumption expenditures.

An uneven recovery with the slow recovery of retail expenditures may translate into weak employment growth in the service sector. There is reason to be optimistic since domestic tourism and travel revenues are experiencing a relatively quick recovery in 2021, driving positive expectations for the growth retail expenditures throughout the year. However, structural factors are also at play. As a significant component of total consumption expenditures (verify this), the recovery of total consumption expenditures will depend in part on the restoration of disposable income on the part of China's large rural and migrant population. *Accordingly, it is important for China to focus stimulate domestic demand through rising labor incomes and reducing inequality.*

Table 3.2 Employment Outcomes for Services

	Meals and Food Services	**Accommodation and Hotels**	**Resident services**
%GTVA	1.27%	0.47%	0.95%
Added Value of Labor Input Requirement (in 10 thousand yuan)	¥ 361,287.31	¥ 448,233.90	¥ 142,144.81

No. of Additional Domestic Workers	74,207	71,959	26,524

Source: Author's calculation for 2018 IO Table

Critical to employment stabilization in the early phases of the recovery was the restoration of production in the manufacturing sectors. Many of these jobs were restored once production restrictions were lifted and social distancing measures relaxed. However, maintaining a resilient front to stabilize employment will continue to lean on steady growth in manufacturing to support overall recovery. Table 3.3 shows that the greatest employment gains in manufacturing are found in the electricity and heat production, coal mining and processing, and steel rolled products, and metal products sectors. This result is due to the high number of linkages between these sectors and the construction sector. The various materials required for medium to long-term infrastructure projects are sourced from local manufacturing industries, generating a sustained employment effect, even after adjusting for import exposure. Thus, public investment and subsidies for infrastructure projects are likely to support well-paying domestic employment for many low-skilled and medium-skilled workers in manufacturing, providing up to 5% of total employment gains.

Much of this increase in employment will be disproportionately generated in manufacturing-intensive regions on the coast, in provinces like Guangdong, Zhejiang, and Shenzhen, as opposed to China's less developed interior provinces.

Table 3.3 Employment Outcome for Top 10 Manufacturing Sectors by VA

	Electricity and heat production and supply	**Steel rolled products**	**Coal mining and processing products**	**Metal products**	**Petroleum and natural gas mining products**
Rank	1	2	3	4	5
%GTVA	2.21%	1.55%	1.32%	1.28%	0.98%
Added Value of Labor Input Requirement (in 10 thousand yuan)	¥ 700,615.44	¥ 626,251.31	¥ 755,745.34	¥ 618,990.22	¥ 432,679.45
No. of Additional Domestic Workers	81,927	88,379	92,227	88,112	25,587

	Whole cars	**Refined petroleum and nuclear fuel processed products**	**Electronic Components**	**Waste resources and waste materials recycling processed products**	**Auto parts and accessories**
Rank	6	7	8	9	10
%GTVA	0.96%	0.93%	0.78%	0.78%	0.77%

Added Value of Labor Input Requirement (in 10 thousand yuan)	¥ 2,807.28	¥ 92,518.94	¥ 206,063.77	¥ 261,676.97	¥ 130,505.87
No. of Additional Domestic Workers	361	12,292	12,068	32,077	17,559

Source: Author's calculation for 2018 IO Table

Since we modeled a total 600 billion yuan increase in government spending in construction sectors we expect both large direct effects and significant indirect effects as intermediate demand from construction activity ripples outward in connected or related sectors. Observing Table 3.4 we indeed find large direct gains of over 260,000 additional domestic workers in *the railway, road, tunnel, and bridge construction* sector and 1.3 million additional domestic workers in the *other civil engineering construction* sector. Additionally, we find significant gains in the professional technical services and building renovation and construction services sectors. Employment gains in construction and allied-industries account for a 26% of total employment gains and thus provide one of the main pillars of employment growth for the present stimulus.

Table 3.4 Employment Outcome for Construction and Allied-Industries

	Professional technical services	**Railway, road, tunnel and bridge engineering construction**	**Building decoration, decoration and other construction services**	**Other civil engineering construction**
%GTVA	1.45%	1.24%	0.73%	0.66%
Added Value of Labor Input Requirement (in 10 thousand yuan)	¥ 2,502,008.96	¥ 16.84	¥ 647,439.08	¥ 9,988,287.36
No. of Additional Workers	237,618	264,081	102,768	1,305,331

Source: Author's calculation for 2018 IO Table

Another major source of employment growth in the present model comes from strategic spending in the health services and related sectors. Direct government expenditures in support of public health programs are targeted at improving basic capacity for pandemic control, treatment, and the distribution of essential goods and emergency aid. Improving capacity in this sector will require major labor inputs from both high-skilled and low-skilled workers including additional doctors and nurses, social workers, counselors, in addition to caretakers and medical aides. In addition, there are notable gains in the high-value added medical products sector (note that this sector has high relative import exposure). Table 3.5 indicates gains of over 1.3 million domestic and regionally-local jobs in health services and related sectors over the short to medium term (around

16.9% of total employment gains). It is quite possible also that this boost in capacity will become permanent as part of the government's ongoing healthcare reforms (Meng et al. 2019), and to prevent future outbreaks.

Table 3.5 Employment Outcomes for Health Services and Related Sectors

	Health services	**Medical products**	**Medical equipment**
%GTVA	1.80%	0.87%	0.11%
Added Value of Labor Input Requirement (in 10 thousand yuan)	¥ 9,745,694.85	¥ 1,485,298.29	¥ 157,007.34
No. of Additional Domestic Workers	1,099,191	191,042	13,280

Source: Author's calculation for 2018 IO Table

Additionally, with China's aging population (Flaherty et al. 2007), healthcare will gradually occupy larger shares of total value-added over time and are certain to become important sources of future employment. Many of these jobs will need to be generated across China, with particular need in rural areas where the majority of health centers and village clinics are located, including many practicing TCM or TCM/western integrated practices (Xu and Yang 2009).

4. Summary and Policy Recommendations in an Imperfect Crisis-infested World of 2020s

Our analysis highlights the salience of considering the economic and social shocks of pandemics and development from a SEICA perspective. Accordingly, the following conclusions and recommendations may be relevant for other economies in various stages of development, particularly those with sharply uneven development patterns and large populations of rural residents.

First, in light of uneven development and structural inequalities, we find that the current stimulus has not done enough to generate economic activity and strengthen the recovery of rural provinces. Although there are some employment gains expected to be spread across regions including in construction, agriculture, and public health, the bulk of employment effects of the stimulus favor employment growth in urban areas. This is mainly by design, since a large portion of employment losses during the height of the pandemic were indeed concentrated in these areas, impacting also employment opportunities for hundreds of millions of migrant workers. However, this view failed to recognize that rural areas suffered disproportionate economic impacts from the COVID-19 shock despite having much lower infection rates than urban areas.

Accounting for the disproportionate effects of the pandemic on less developed provinces (i.e. Gansu, Guizhou, Xinjiang and Yunnan) and rural areas, residents in these areas may be more

vulnerable to acute food and resource shortages as a result of the travel restrictions and production stoppages. Maintaining commitments to the prevention and reduction of poverty and hunger in these areas will require continued attention paid to the situation of poor households and individuals facing emergency situations. The provision of relief packages and transfers have been limited in the present stimulus to emergency situations, which has plausibly excluded many rural residents and migrant workers whose cases have gone unmonitored and without access to government representation.

Second, given the overemphasis on supply-side matters of the stimulus, perhaps from the strategic perspective of export-led growth the government will also need to focus more attention on restoring broader domestic demand as a means of achieving sustainable recovery. In order to maintain momentum in the present recovery, policy makers should continue to facilitate job creation for less-skilled workers in both urban and rural areas through tax support for MSMEs and job training programs and improve market expectations by maintaining a resilient front against future outbreaks through vaccination drives and international cooperation. Additionally, rural residents may require augmented relief packages and direct transfers in the interest of ensuring the sustainable recovery of household expenditures.

Third, the present crisis calls for pro-labor policies intended to stimulate domestic demand via rising incomes. This strategy for China has its precedent in a previous recession. Just before the 2008 financial crisis, a team of economists from UNCTAD, of which one of the authors was a member, advised the Chinese government to focus more on domestic demand from wage-led growth strategy. In addition, Khan (2008; 2010) suggested a more sustainable development strategy with a focus on renewable energy use that seems to have been adopted by and large by the Chinese policymakers.

5.WCS and Chinese Ambiguities: There are indeed many paradoxes with respect to the actual nature of the Chinese economy. Is it capitalist or socialist or market socialist or something else? How can concrete analysis of the Chinese economy help us in understanding the actual nature of the Chinese economy? Where is China located in the Global Geopolitical-economic System? We need a guiding methodology that captures the complex social, economic and political ontologies dialectically. That is to say such a complex systems approach must analyze various salient contradictions at different levels of analysis ranging from the local to the global arenas.

Using deductive, inductive and abductive modes of reasoning I build up a theory from the bottom up to understand 21st century Chinese paradoxes and ambiguities. These paradoxes and ambiguities are not accidental but relate to tensions in the moral economy of PRC with a revolutionary non-capitalist past in the capitalist world of the early 21st century. I will examine these emerging issues both theoretically and empirically and begin a conversation between the theorists and practitioners. In this way in particular, our discussion of COVID-19 responses in PRC in light of the Crisis-prone nature of the rest of WCS is intended to begin the much needed

dialogue regarding the contemporary relevance of a complex multilayered innovative economy like that of the PRC. Though much remains to be done, the chapters that analyze the contradictions in the WCS in light of the COVID crisis, together with my discussion of the Chinese case illustrate the paradoxical nature and experiences of Chinese development which nevertheless is demonstrably superior to the US-led WCS in handling crises. Needless to say, we need to identify the opportunities in and constraints to the Chinese quasi-socialist strategy over time in order to critically assess how capitalist or socialist it is. Most importantly, our analysis coupled with the rest of the book can already provide some guidance on how to tap the potential of noncapitalist complex economies for increasing human well being, addressing in particular the constraints arising from the real stratifications in the Chinese and the Global Political Economy. My ultimate normative concern here involves ---congruently with the intentions of the authors of this book--- considerations of how to make further progress in the promotion of human well-being in light of enhancing human capabilities theory pioneered by Amartya Sen and developed by several others. In particular, I have developed over the last decade a specific intersectoral approach. I call my approach a Socially embedded Intersectoral Capabilities Approach or SEICA. It can be shown that the SEICA indicators ranging from health and education to political and social aspects of freedom concretely institutionalized can help assess the failures of WCS and the mixed successes of countries struggling to break away from WCS. Clearly, human well-being depends crucially on the nature of socio-economic-political system. Hence the normative theory must be located within an approximately true theory of the complex global political economy that is applicable scientifically. This will surely be the next big step to take by progressive 21st century social sciences.

6. Conclusions: Possible Global Futures---Socialism or Barbarism?

We have presented critically perhaps the most detailed analysis of China's response to the COVID crisis. Calculations based on the 2018 IO table for China identified the direct and indirect effects of counter COVID-19 government expenditures on overall employment in the Chinese economy. We find that the real estate sector is the largest in terms of sectoral value-added, followed by the wholesale trade, financial services, public administration, and agricultural products sectors. The largest value-added sectors among manufacturing industries are electricity and heat production, steel rolled products, coal mining products, metal products, and petroleum and natural gas mining products. While these sectors are undoubtedly important for supporting local economic activity and employment, it should be noted that among the most strategically important manufacturing

sectors are those with the greatest exposure to imports. Critically dependent on imports are the following sectors in terms of import exposure: electronic components (341.3%), petroleum and natural gas mining products (201.2%), and automobiles (40.2%).

The calculated multipliers indicate that rural and low-income households are most likely to benefit from changes in final demand for wholesale and retail trade, agricultural products, construction, and accommodations sectors.

In terms of modeled employment effects, we find that the greatest source of added employment is found in construction, agriculture, the pandemic-sensitive service industries, and in the public health and social work sector. For construction and public health/social work, in particular, these employment gains come largely from direct additional government expenditures in these sectors as part of counter COVID-19 economic and social welfare goals. Since infrastructure projects and healthcare spending are targeted across China, it is likely that direct employment gains in construction and public health will be distributed fairly evenly across regions. The increase in agricultural employment is highly significant given a growing need for the creation of job opportunities in rural areas and under-developed provinces. For growth in services and manufacturing, we should expect job growth for low- and middle-skilled workers, providing jobs for low-income urban residents as well as migrant workers.

Employment gains for construction, public health services, and public administration come largely from direct additional government expenditures in these sectors as part of counter COVID-19 economic and social welfare goals. Significant employment gains are found to come also from indirect increase in intermediate demand through backward linkages. Sectors that have seen the largest indirect employment gains are agriculture and the pandemic-sensitive service industries. Employment gains have also been seen across manufacturing sectors to a lesser extent on account of backward linkages tied to the construction sector. The increase in agricultural employment is significant given the growing need for the creation of job opportunities in rural areas and under-developed provinces. For growth in services and manufacturing, we should expect job growth for low- and middle-skilled workers, providing jobs for low-income urban residents as well as migrant workers.

Even after adjusting our modeled employment effects for import exposures, we were able to estimate that total domestic employment gains from the present stimulus would be significant and expected to meet the Central Committee's overall employment creation goals, with a large portion of these gains concentrated in construction and allied-manufacturing sectors.

The analyses in **CRISIS, INEQUALITIES AND POVERTY,** complemented by the present analysis and the Chinese case study show convincingly that the crisis-prone WCS will continue to inflict great harm on the most vulnerable people in society. Consider also the real presence of aggressive imperialism fostered in the advanced countries through the finance capital, and structural compulsions of the WCS. The dangers of global confrontation and war mongering particularly by the ruling classes in the US with segments of EU and Japan following are real. The choice between the two paths acknowledged even by a prescient bourgeois economist like Schumpeter is clear. Schumpeter had presciently pointed towards the dire possibility of global conflagaration which now looks all too alarmingly real. Being somewhat of a pessimist, he was reluctant to see the

prospects for a progressive peaceful socialism although he acknowledged the possibility of a non-capitalist future also. To be fair to him, the legacy of socialism in the 20th century has been ambiguous at best. The Chinese case since 1978 is particularly interesting from this standpoint. Clearly there are many ambiguities in the Chinese case also---not the least being the restoration of hierarchical management and stifling of grassroots democracy that existed during the Yenan period and at the post-1949 revolutionary moments. But it must be acknowledged that however imperfect or ambiguous, the non-capitalist elements of the complex social, economic and political entity called PRC have managed both the 2008-9 global financial crisis and the COVID crisis so far much better than the US-led WCS. One can only hope that with further democratic socialist oriented reforms and future revolutions in these directions in parts of WCS, the world can avoid the dire conflagaration feared by Schumpeter and Arrighi among others. Not only this hopeful negative result of avoidance, PRC has also shown that even in a WCS dominated by neoliberal ideology, it is possible to move towards a path of moderate prosperity by following an alternative ---however imperfect---to neoliberalism, and one hopes, peace. The crucial question, of course, is if PRC can control the private capitalists and pro-capitalist state and party elements. Only if this crucial precondition is fulfilled will PRC be able to reduce various kinds of inequalities, and practice a SEICA-inspired egalitarian capability enhancing policy regime. Moving forward, although by no means a sure prospect,China in the 21st century may even lead a new genuinely socialist bloc in our time. If PRC fails to do this, other revolutionary actors in other parts of the world must carry the torch of egalitarian and democratic socialist movement forward. Rosa Luxemburg was right: we have to choose in our life time between socialism or barbarism.

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