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Real Estate Appraisal in the Aftermath of the Coronavirus Pandemic

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Abstract

In February 2020, the coronavirus (COVID-19) begun to roll over the globe. Suddenly, some true resilience leadership – or at least, decisiveness – was needed from individual citizens and businesses. The crisis conditions also forced some sectors and industries to be innovative, in search for solutions. This contribution speculates about the future of real estate appraisal, and the extent it is being affected by the crisis. The implications of the ongoing and future virus crises for real estate appraisal are examined using the concept of risk, and, in doing so, a potential methodological innovation based on subjective risk analysis of real estate investments is argued for. The consequences are likely to fit in the space between the extreme scenarios: that nothing will change, and that all with change. So, we do not believe that the distribution of rental incomes and property values will be the same as before, but we also do not buy the claim of some kind of end of real estate. Instead, what seems plausible is to approach the issue by establishing the risk; that is to say, how the real estate industry is reacting to an inevitable resetting of the businesses of the tenants, based on how adaptable the industry and sector is. The findings of the conceptual analysis highlight the potentially changing context of real estate appraisal in terms of localization of economic and social activity; preferences for distance practices and private sector activities; and implications for investment risk.

Keywords: COVID-19, crisis, real estate appraisal, risk, coronavirus

1.0 INTRODUCTION

Since February 2020, when the coronavirus (COVID-19) global spread became evident, its impact in business and the real estate sector have been a thought for all. At first, the epidemic was confined to the Wuhan province in China, but it escaped, due to our globalized world where mobility of people and goods is unavoidable. Soon, Europe begun to close down. After that, the virus landed in the United States and subsequently to other regions.

While the exact origins of the virus are debated, the role of the Communist Party of China together with WHO is being speculated (e.g. Coughlin, 2020). However, most if not all countries in the whole world have had to realise the imperative of implementing a forward looking strategy rather than one looking for a culprit. The situation that is unfolding has required urgent measures from every decision-maker to confront. As such, this crisis puts the whole existence in perspective. In contrast to the alleged climate change processes which have a time perspective of several decades, the virus has spread rapidly – each day masses of new cases of contamination are being discovered. In this unfortunate situation, what is interesting was the relative disappearance of the climate change debate, now that a real problem knocked on our door (Csaba, 2020). We are suddenly confronted with a new reality. Particularly noteworthy is that, as this crisis turned everyone's attention to urgent existential problems, the borders between nations begun to close. All these developments will also influence real estate, in one way or another.

This paper projects some of the generic speculation on a real estate relevant canvas. Thus, the analysis of the consequences of the virus pandemic does not end with the forking of various general economic and societal problems – and possible opportunities – but also in their real estate based counterparts dealing with land, buildings and renewal issues. The aim of this contribution is to examine the implications of the ongoing and future virus crises for real estate appraisal. This theme is approached using the concept of risk. Alongside this analysis, a methodological innovation is argued for. The basic principle in the conceptual analysis presented is to establish investment risk based on unforeseen occurrences (such as this virus) and their economic – and to a lesser extent, social – consequences.

The discussion can be condensed into the following general claims about the nature of this kind of crisis and its most efficient preparations for arising problems:

- Globalization accelerated the spread of the virus; therefore, a kind of localization is necessary to avoid a new crisis situation to happen.
- The virus spread quicker where the gatherings of humans were larger and denser; therefore, keeping restraint in face-to-face contacts is necessary to avoid a new crisis situation to happen.

- Governments were unable to offer sufficient levels of resilience to stop the virus quickly or completely; therefore, a large share of the responsibility of efficiently combatting the virus lies with the individuals, in their business and civic life.
- These kinds of crises are likely to happen again with varying frequency; for each occurrence, the consequences will be dramatic.

The first two claims and the last one probably can be treated as unequivocal – or so it seems as things stand, given that we have not experienced anything like this virus before. However, the third claim might yet be seen as controversial, considering the wide range of measures and successes across governments: notably, from the swift efficiency of the South Korean State to the risky and hence strongly condemned Swedish State. For the purposes of this study, also this claim is treated as an argument to be analyzed: so assuming an unavoidable shift in resilience enhancing strategies, from public policy towards private and community oriented activity.

Each of the four claims above can now be reformulated as corresponding research questions in terms of their real estate aspects (i.e. various real estate situations in terms of potentials and threats to value stability and improvement opportunities):

1. How will real estate be affected by the argued localization of economic and social life?
2. How will real estate be affected by the argued shift from physical office settings towards virtual meetings and distance work?
3. How will real estate be affected by the argued shift away from public towards private and voluntary realms?
4. What are the implications of this kind of crisis for risk in real estate investment appraisal?

The organisation of the remainder of the paper is as follows: in section 2 some general challenges are outlined related to the main economic and social issues arising; section 3 then discusses the real estate field, and from a somewhat prescriptive point of view; section 4 incorporates the useful concept of risk into the analysis; section 5 elaborates a methodological innovation for aiding the risk analysis in this context; section 6 presents the results; section 7 discusses these findings; and finally section 8 concludes the study. For simplicity's sake, the key terms applied in the text are 'virus' and 'crisis' rather than the complete reference to COVID-19 and related crises. Other similar terms are used too, albeit sparingly.

2.0 THE ECONOMIC AND SOCIAL CONSEQUENCES OF THE CRISIS

Because of the virus/crisis, people and organisations alike have a pessimistic vision about global and regional economic fortunes. In these times, due to the ongoing situations, most economies in the world are expected to take a serious hit, and then innovation is required more or less everywhere. The tourism industry is a particular case in point, and might need exceptional innovativeness to bounce back, especially in the absence of sufficient government subsidies to the main actors such as hotel and flight companies.[1]

From a real estate point of view, the main problem probably is that the crisis is likely to impact heavily on global financial and commercial business streams. On the other hand, differences between countries in terms of forecasted GDP changes for this year and next are notable (see IMF, 2020). Businesses based on face-to-face meetings will increasingly be replaced by e-commerce and next generation of high-tech based distance working practices. In general, preference for private space will dominate over public one – notably in modes of transportation. Although it is possible that planning regulations are also evolving to respond to the need of securing the sufficient public space for social distance-proof meetings, as Taşan-Kok (2020) optimistically speculates. And having connections with government bodies and large corporations always helps in crisis situations. Small businesses without these connections are likely to go bankrupt in worst hit areas and regions. In the final analysis, the result will be a redistribution of wealth from the employees and shareholders of the worst hit industries and sectors to their more resilient counterparts – often large corporations who can outbid their smaller competitors.

Home buying and construction will also be affected, in so far as these sectors are depending on bank loan and overseas investment. Individual owners find their feet in a few months, but for businesses the consequences can be devastating, unless receiving subsidies. Tourism industry – some of which has connections to real estate via hotels and physical offices of agencies – is one of the most seriously hurt industries, but, ostensibly, also within that industry, the strongest and most subsidised will survive, at least in the longer term. At the other end of the continuum from failure to success, Amazon and similar e-commerce operators will thrive, even more so when people will work remotely and use their increasing spare time at home. Casinos are an interesting case in point here, to the extent technology application takes over the traditional casino business. So solidity, strategy and subsidies will determine the fate of businesses in general. And, as always with real estate, it is going to be a sharp separation between winner and loser locations.

And what about lifestyles – will they change or remain the same? This is an intriguing question, which we might develop two different scenarios of. It is obviously possible that nothing changes; after a period of lockdown and social distancing, we go back to the blissful enjoyment of the globalized *experience economy*. However, this may not happen; instead, consumers might realise that a quiet healthy life based on small daily routines was not such a bad idea after all. This is probably how life used to be for most people in the old days. The current generation of consumers might realise that they too can be without frequent visits to restaurants and cafes; without more than necessary shopping; and without travelling very far. Or if you do travel, pick outdoor activity rather than indoor activity, and rural and natural areas rather than densely populated ones. So, for those who have the option to decide, the result might be a revaluation of one's preferred way of life.

It seems unlikely, however, that we are about to experience an end of our Western culture, in a Spenglerian sense. This might be a backlash that brings back the economic and social conditions of 1970s, but with the added benefit of later technical developments such as internet and mobile phones. In Kauko (2020), I opined that the new path would entail three broad influences: (1) to preserve traditions that have proved their worth; (2) to be innovative, but with a selective mind-set; and (3) to be on your guard, constantly, in preparation for the worst case scenarios. So when economies and daily routines become more tied to closely knit networks, and economies go local, our lives would be less hectic, as a result. Then we would learn how to appreciate small things, and we would also spend more time with family and friends. All of this will also be reflected in the future real estate market trends, as shown further below.

Several big questions about the development of the world order are in the air now. One of them concerns the future role of identity politics. Here one could conclude that, if the image of one global village together with multicultural and cosmopolitan lifestyles has become undesirable, national identities will emerge stronger than for several decades. In this scenario, everyone – apart from global financial, economic and political elites – could be getting stronger if slight adjustments are being made concerning lifestyle choices and the way the worldviews are structured. It would be natural to support our own geographically ethnically and culturally determined communities rather than succumb to the old globalist juggernaut. For example, if we are Europeans, we should engage in time-tested safety practices that strengthen our identities, such as honouring social distancing, health and hygiene considerations and organisational vision. This would mean fewer opportunities to earn a living in the old ways, as instead, new, yet unseen ways, fit to local circumstances, would emerge. So only by focusing inwards rather than outwards can we protect ourselves sufficiently from the long-term harm caused by this pandemic, and from the risk arising from the threat of new ones. This would, however, be a controversial strategy in the minds of the global elites, which is why strong resistance from highest levels would be expected.

As can be implied from the discussion above, the likely consequence of this crisis will be global economic depression for years to come. This is likely to mean an end of the general perception of globalization as an automatic process; in other words, a return of nationalism, at least in some respects such as border controls being reinstated and, production of goods returning to developed countries. This kind of scenario might not be the worst, as tradition will be respected again, and, eventually, true innovativeness will emerge. And we should not forget the social side of innovation: people matter too.

Unfortunately, the short- to mid-term forecast is that the magnitude of this cataclysmic state of affairs is going to exceed all the wildest fears of what an extreme 'bust' could be. Some of the most globalized industries, including a substantial chunk of the commercial real estate sector, will experience devastating consequences. Eventually, a less globalized state of business and life are bound to emerge from the ashes.

In what follows, real estate economic aspects will be put on the fore in all deliberations concerning the way the virus has altered some of the norms of our globalized, paternalistic society. However, as real estate situations cannot be analyzed in a vacuum, also environmental, social and cultural aspects will be brought in, whenever relevant for the analysis of the given circumstances regarding real estate markets and related factors. The surroundings, the people involved and the history cannot be neglected in this complex setting.

■3.0 REAL ESTATE AS A CASE IN POINT

A high level industry webinar was arranged by RICS in April 2020, on the issues relating to the future of the industry amidst and after the crisis (see Scheurwater, 2020). Curiously, the approach proposed by RICS treats the virus as something we would have been able to foresee, rather than something totally unexpected. So [sic] an event characterised as Grey Rhino rather than Black Swan. The reason Europe was not as well prepared as South East Asia has to do with the avoidance of previous virus outbreaks. In principle, this crisis could have been mitigated, if warning signs had been paid proper attention to. However, as it stands, the crisis will indeed have unforeseen consequences on the real estate industry. In particular, hospitality, retail and office sectors are expected to suffer heavy losses, whereas health and residential sectors are expected to survive with lesser damage. In more precise terms, the following effects were already seen or foreseen in April 2020 (Scheurwater, 2020):

- Moving towards a kinder and socially aware business environment
- Fewer transactions and lesser building volumes
- Hotel revenues down 85%
- Retail sales down 90-100%
- Office occupancy shifting to home-based working
- Valuation becomes increasingly digital and AVM decreasingly based on inspection
- A wholesale shift towards sustainable investments and real estate sustainability, and in general, more long-term than short-term business models in all industries, including commercial real estate.

One might be somewhat sceptical about the first bullet-point, especially when we prepare for a more polarized new world order. We do also have an intuitive fear about the shallowness of solidarity and ruthlessness of human nature in these kinds of situations. We remember the despair and neglect of the poor residents in New Orleans, in the aftermath of Hurricane Catherina, when local gangs run riot and plundered everything available in town. As Putnam (2007) famously concluded, the solidarity among fellow citizens work only as long as there is trust and kinship experienced within any given community. By implication, the same is likely to apply to consumers, producers, intermediaries and other professional actors involved in the real estate industry. Thus, evidently this altruistic model works only in homogeneous enough communities (i.e. in terms of demographic and socioeconomic factors) where trust between its members still exists. One is over optimistic to believe this to be the case in the modern ideal of socially and ethnically diverse, multicultural urban communities. (Although RICS seem to believe in a global systemic adjustment, in so far as we talk about governance and social cohesion.)

As it stands, to stick to the metaphorical distinction of characterisation of event: Black Swan or Grey Rhino, may not be so fruitful after all. Obviously, a system of warning signs will be put in place, regardless of how well the next pandemic can be forecasted. (Intuitively, Black Swan would signify unforeseeable immediate and short-term effects, and Grey Rhino foreseeable medium- to long-term effects, but at this stage it would be premature to even develop this logic into testable hypotheses.) As it stands, neither metaphor needs to be taken as absolute starting point, in so far as dealing with the social and economic consequences for and sustainability of real estate situations. At least these proceedings can be set in a sufficient general framework that both views can be applied. Then again, whether or not we should have seen this crisis coming was always going to trigger an academic debate.[2]

When contemplating the possibility of an unlikely return to business-as-usual, several twists will dramatize this saga. As noted above, the new reality in real estate business is likely to shift towards long-term processes and a further cementing of the sustainability principles that already were established before the crisis, namely working towards long-term environmental, social, cultural and economic gains. However, the specific criteria to judge whether investments and developments are deemed sustainable will inevitably undergo change. So when we consider the planning and development of new housing and workplace environments, it is not sure anymore that all the received wisdoms will remain unchallenged. It is likely now that, in the new reality, policymakers might go back to what used to be dissident viewpoints, especially with regard to the 'diversity cult'. At any rate, the prescriptive theory of optimal diversity in an area be developed further than the current the-more-the-better mantra. (So to agree on objective criteria, akin to Pareto-optimality in welfare economics, rather than to merely resort to moral judgements.) The same will take place with other vital criteria of the real estate sustainability guidebook.

Already before the pandemic, some of the theory on urban real estate sustainability was still being debated in academic fora (if not in their practice or policy oriented counterparts). The thesis of concise city dominated by public transport is a case in point. When examining the key ingredients of sustainable urban development, especially the influence of area and population densities on various sustainability dimensions are still debated (Kauko, 2018). Apparently, the seriousness of the virus pandemic situation is related to how people live and interact in so far as excessive urbanization increase the susceptibility of infectious diseases (Connolly et al., 2020). Besides, the potential energy savings of only building concise new neighbourhoods and densification of existing ones was always going to be offset by the evolving social problems, whenever a certain optimum density was reached.

In fact, empirical research shows that the sense of community and informal relations between neighbours will suffer, if sites are built too efficiently (Bramley et al, 2009). Unfortunately, this argument was too often being trumped by the most environmentally conscious planning professionals, which is why the extreme densification of urban areas was accelerated further. However, now we have learnt that the virus is thriving in dense living environments dominated by public transport. So as a consequence, even the most environmentally conscious urban and real estate managers are forced to revise their densification strategies. Ensuring social distance aware spatial regulations at urban microenvironment level could also help here (Taşan-Kok, 2020).

The most obvious trend is therefore going to be about moving out of crowded urban areas towards leafier, sparsely populated suburban, peri-urban and rural hinterlands. Some might even promote the rediscovery of small towns and countryside (Calder, 2020). Obviously, with demand increasing over time, such areas will also undergo corresponding price lifts, but in the beginning several under-priced locations might be found easily in such areas. And public transport availability will not necessary be seen as a benefit anymore, in so far as the virus continues to be transmitted by surfaces and crowdedness such as that experienced in public transport. Private cars will therefore be reviewed differently by urban planners and similar hitherto public transport favourable groups.

There is also a prediction by US based professionals about increased weight for neighbourhood factors when buying a residence and relocating. The suggestion is that walkability will be more sought after characteristics for homeowners and movers. By implication, small shops, meant primarily for the residents in the neighbourhoods, would also undergo a new renaissance. This, of course, comes amidst the forecasted general decline for nearly all retail. However, residents need to buy their groceries somewhere, and then the choice is between these small shops where they can get quickly what they need over the counter from familiar shopkeepers and supermarkets where they have to spend time travelling and queueing. So in this scenario, the characteristics of walkability and availability to smaller commercial services in the vicinity, together with other characteristics of the immediate neighbourhood, will be important determinants of property value, area attractiveness and residential location choice (Robare, 2020).

In this vein, PropTech – the massive implementation of emerging technology in real estate context, including smart homes, cities and regions – might offer yet another strand of emerging real estate literature where these issues might be incorporated (c.f. Baum, 2018; Saiz, 2020). Insofar as resilience is brought to the negotiation table, various technical and social innovations might well prove useful in the face of future pandemics. If anything, the next stage of the PropTech experiments will surely offer plenty of potentially advantageous developments in this context.

At this stage in the reasoning, a vital interim conclusion can be made. While a total collapse of the global economy seems unlikely, dramatic shifts will take places, and real estate is part and parcel of this change. Therefore, one must be cautious with the future of the real estate industry. A major reorientation is bound to take place. As with any change, this entails greater uncertainty, which, in turn, can be dealt with as added risk element, namely, increased risk premium in DCF and income capitalization models. It is therefore likely that risk premiums – and thereby total risk adjusted yields expected from an investment – will increase. So this type of event will, at the very least, be baked into new investment formulae, as will be shown next.

4.0 RISK IN REAL ESTATE INVESTMENT

As secularities go, most of the things in the world are uncertain. How likely is a hazardous event to take place? And to take place again – and yet again? What is the impact on the business, if a disaster or crisis does occur? What can be done to reduce the risk and the impact, if such an event should happen? And if we cannot mitigate all the risks, what are the expected losses? This stochastic aspect complicates the decision-making, as investors are risk-averse – and particularly, for an illiquid, durable and heterogeneous good such real estate. Fortunately, analytic methods can help us here in so far as uncertainty can be quantified as risk.

The principal idea here is that an investor or developer needs a certain expected rate of return to compensate for the calculated risk (so the compound effect of uncertainty and losses). Any investment contains two types of risk:

1. *Specific* risk – can be diversified away to the extent it is uncorrelated with the 'general market' (Modern portfolio theory, MPT, Markovitz, 1952); the greater the portfolio, the smaller the risk. In principle, the portfolio diversification continues until no benefits can be gained by spreading the risk across many investment classes, as these share the same market development (the asset covariance limit).
2. *Systematic* risk – cannot be diversified, because it covariates with other assets and correlated with external events such as interest rates, recessions, wars, natural disasters and so forth. To deal with this concept we need the Capital asset pricing model (CAPM: Sharpe, 1970), where risk is defined through the volatility of the single unified asset market (Beta, ß).

Assuming that the risk cannot be removed, how much of the risk can be diversified across different asset markets (MPT)? The greater the portfolio, the more of the risk can be diversified away – until no more risk can be diversified. Following CAPM, this limit is determined by how assets covariate – as fluctuations are synchronized, we deal with systematic risk (single market) which requires a different approach for dealing with the remaining risk. For this, we need to determine the volatility of the market of an asset (ß); this determines a relation between systematic risk and the expected value of the investment – to be added to the yield estimate as risk premium.

This purely financial modelling framework has been criticised for a poor fit with a real estate context (e.g. Jones et al., 2017). Namely, additional factors beyond financial models matters for establishing the risk in real estate investment. This validates subjective risk evaluation as an unorthodox approach to risk estimation. It is to note that, even if one accepts the frequentist approach above, whenever reliable data is missing, a subjective approach to risk assessment needs to be used instead.

5.0 TOWARDS A METHODOLOGICAL INNOVATION

Methodologically, real estate situations in general are subject to judgement such as valuations or appraisals. These judgments, in turn, are based on criteria such as profit or yield, and indicators such as transaction price, turnover of contracts or building volumes. The same applies here in this particular analysis; so how do these indicators react to the virus/crisis. In this vein, four research questions were formulated:

1. How will real estate be affected by the argued localization of economic and social life?
2. How will real estate be affected by the argued shift from physical office settings towards virtual meetings and distance work?
3. How will real estate be affected by the argued shift away from public towards private and voluntary realms?
4. What are the implications of this kind of crisis for risk in real estate investment?

While the first three research questions are scrutinized solely based on the likely scenarios arising, the concept of risk is used here as the most important analytical tool to judge the fourth research question. Obviously, as data is missing, we have to resort to purely speculative discussions. Nevertheless, relevant experiences from past events, activities and spheres of influence as well as logical deducing will provide the necessary basis for the treatment of all four research questions. Eventually, this methodology can be enhanced or replaced with content analysis, as the body of literature dealing with the risk implications of the crisis will grow.

The basic principle in the hypothetical risk approach is to go through a step-by-step procedure. [For a more detailed explanation, see any textbook on the topic; the discussion below is based on Ball and colleagues (2008) and Lumby and Jones (2011)]. The first task is to define the risks: *hazard* likelihood and its *consequences*. After that, the task is to eliminate what is possible to eliminate: maximum risk tolerance vs. minimum required returns. Resources can then be focused on those risks that cannot be shifted, are likely to occur and will have a high impact if they do. The point of reference here is the income capitalisation equation: value (V) = rental income (I) / yield (Y); for reasons of convenience, this is often rewritten as V = I x 1/Y, where 1/Y is the rental multiplier.

Using the theoretical tools of specific and systemic risk, the next step is to diversify specific risks following MPT, so that the unsystematic risk is diversified away. Formally, this is done by adding a quantity to the discount rate to reflect uncertainty (risk-adjusted discount rate). Furthermore, the yield or cap rate Y (in the rental multiplier, 1/Y), is now being split into two terms: risk free r_i and risk premium r_p as follows:

$$Y = r_i + r_p$$

r_i we get from market interest rate, here risk = 0,

r_p is about the additional yield required to compensate for the riskiness.

When examining the situation in a subjective way, the question is reframed as to what the risk of this particular investment is.[3] We then identify sudden events that are detrimental for the investment (hazards) and their likelihoods; how serious are the consequences? How much of this risk can be eliminated – or can the returns be increased to compensate for the risk? A simple demonstration of this 'happenstance' approach is shown in table 1. The matrix shows the increasing likelihood for this hazard in the horizontal direction using an ordinal scale as follows: (1) very small likelihood; (2) small likelihood; (3) moderate likelihood; (4) big likelihood; (5) very big likelihood. Similarly, the corresponding intensity of consequence using a similar ordinal scale is shown in the vertical direction as follows: (A) not serious (i.e. minor economic loss); (B) somewhat serious; (C) in between category; (D) relatively serious; (E) serious (ie. major human/environmental loss).

Table 1 Risk matrix with likelihood 1-5 and consequence A: economy, lowest, to E: human/environment, highest (the speculated happenstances are noted in bold font)

1	2	3	4	5
A	A	**A**	A	A
B	B	B	B	B
C	C	C	C	C
D	D	**D**	D	D
E	**E**	E	E	E

Here using vivid speculation is allowed. In a given time and place, the following hazards could occur and thereby interfere with of our investment decision:

- *Risk level D1:* Very small likelihood (1), relatively serious consequences (D): for example, terrorist attack; civil war; foreign troops invade; riots on the street; flooding; the nuclear power plant explodes.
- *Risk level E2:* Small likelihood (2), serious consequences (E): for example, gas explosion in the premises.
- *Risk level A3:* Moderate likelihood (3), not serious consequences (A): most of the risk particular to real estate such as bad tenant, void, loss of revenue, maintenance cost, inflation and other economic risk. (These consequences can obviously, at the same time, be the result of effect of the virus/crisis, but more on this aspect in the discussion below.)

This risk analysis shows that no measures need to be taken for any of the hazards identified, as none of them has a moderate to high risk level (in the matrix: the area of outcomes in red font, C3 – E*5*). So, despite the seriousness of the consequences, because of the small likelihoods, all three identified cases of risk fall outside this critical zone in the risk matrix, and can therefore be dealt with using standard preparation for small risk levels: just exercise common sense and caution by monitoring your investment actions and changes in the external investment environment.

To put this analysis into context of the present study, where would deadly global viruses, together with their real estate consequences, be situated in this matrix? Without doubt, this hazard in question is extremely rare hitherto, but from now on, it is expected to reappear in a none too distant future, in a predicted second wave of the pandemic.[4] And perhaps even more serious viruses will occur, but ostensibly not with high frequency. We can therefore realistically expect an in between likelihood of such an occurrence – moderate level (3).

These outcomes, however, will be cataclysmic, as we have just experienced. While healthy humans remain resilient enough to survive existential crises, this is not only confirmed to economic consequences. If nothing else, at least no expansion of the business will take place during the crisis or in its aftermath. To give an example of such experiences, the R&D sponsorships of financial institutions were among the first real estate related business activities to cease in this drastic new reality. Thus, we can assign a high level of consequence to this hypothetical hazard – level D – comparable with terrorist attacks and civil wars.

Thus, we arrive at the risk evaluation of *risk level D3* of this kind of happenstance (so bold red font of this cell in the table). That implies a serious risk, unlike the other happenstances in the matrix. Such a high risk level inevitably needs some sort of special attention (and obviously, a figure estimated for r_p, although exactly how this estimation would be carried out is beyond the scope of the present conceptual study); in an investment framework, this requires compensation by higher risk premium (with this figure added to r_i). In other words, the risk adjusted yield expectation will be higher (and by implication, rental multiplier lower) in this situation than what it would be otherwise. The bottom line then is that the resulting lower rental income capitalization rate leads to lower expected values, all else being equal.

6.0 RESULTS

It is time now to restate and answer the four research questions:

1. *How will real estate be affected by the argued localization of economic and social life?*
   The essence of real estate always is more local than global: a tract of land stays where it is located. Therefore, the degree it will

be affected by severed global ties is lesser than for many other industries. It much depends on if, and how, the tenant continues to depend on the most global industries such as travel. If the dependence is total, the tenant perishes. If the extent of dependence is of partial nature, the tenant might survive, but that also depends on the willingness of the landlord to renegoatiate the rents at a lower lever. And how reliant is the tenant on the particular micro-location? Thus, the aptness and adaptability of specific sectors and locations remains the key to sustainable real estate value creation.

2. *How will real estate be affected by the argued shift from physical office settings towards virtual meetings and distance work?*
   Real estate has always been something practical and required a certain amount of physical proximity to subjects. However, investments can be made without site visits too, especially now in the virtual era. Therefore, the impact might not be too drastic in this respect. On the other hand, remote areas might receive a boost due to this factor. Similarly, having a large plot and plenty of living space might be even more appreciated as before. So we might see premiums being extracted for these kinds of features: remotemess and space. So a centripetal effect combined with demand for isolation.

3. *How will real estate be affected by the argued shift away from public towards private and voluntary realms?*
   The private property rights have always been the cornerstone to real estate industry; most sectors rely on private funds, although we should not underestimate the role public sector is tied to real estate, as the 2007/08 banking crisis showed. But as the global ties between financers become rare, this hitherto strong effect will be vining. As for any shifts towards the voluntary sector, at this stage, we cannot say even this much; the optimists among us might of course join in with RICS, and predict significantly increased altruism in various roles within real estate interest groups, thus keeping in line with the issue of solidarity among actors within the industry and beyond.

4. *What are the implications of this kind of crisis for risk in real estate investment?*
   The risk attitude towards the intended investment or development project is subjective, and compensated by risk premiums. One would therefore expect rather high increase in premiums, and, by implication, lower income capitalization. So unless this loss can be compensated by increasing the income side of the rent multiplier, values of commercial property will decline. This is a technical issue, however, and the rental market reality is likely to adjust accordingly, as with other singularities. In other words, amidst the general depression of economic values, rents are expected to increase wherever tenants remain profitable companies or high income earning residents.

7.0 DISCUSSION OF THE FINDINGS

The conceptual analysis above has highlighted a few relevant findings[5]: localization of economic and social activity; preferences for distance practices and private sector activities; and implications for investment risk. These aspects all link to the potentially changing context of real estate appraisal. These expectations do not happen in vacuum, however, as the field of real estate by definition stretches far beyond economic analyses of markets and investments. As is well-known, any unit of land or buildings has a unique location, and this location has its specific physical, social, cultural and environmental characteristics, much related to the end use of this unit; so, indirectly, to the position of the tenant or owner-occupier. And if this heterogeneity does not complicate the analysis enough, both the market for these units and the appearance of these units themselves tend to change in time. Therefore, we need to fork some relevant factors that direct our analysis. The virus situation definitely comprises such a factor.

It is highly unlikely that the human nature will change or that capitalism ceases. What will happen though is a reassessment of business practices and also our everyday lifestyle practices. While some of this reassessment happens out of financial necessity, a plausible scenario is that this period also results in breakthrough of new modes of economic activity. While it is impossible to see exactly how things will pan out, a few patterns seem entirely plausible to foresee. In particular, at an international and state level strict border controls and return of manufacturing could become the new reality.

At a sector and location specific level the consequences for real estate can be interpolated from macro and micro-economic trends as well as social and cultural trends. Some sectors are likely to fare worse in this respect: hotel, travel agencies, large offices, in particular, are likely to suffer high vacancy rates and risk premiums. In relative terms, large remote residential locations might be the winners. And we also have to account for the rising star of PropTech.

The consequences are likely to fit in the space between the extreme scenarios: that nothing will change, and that all with change. So, we do not believe that the distribution of rental incomes and property values will be the same as before, but we also do not buy the claim of some kind of 'end of real estate business' – unless we move into an anarchist society where capitalism is abolished and property values are nullified. Instead, what seems plausible is to approach the issue through the concept of risk; that is to say, how the real estate industry is reacting to an inevitable resetting of the businesses of their tenants, based on how adaptable their particular industry and sector is. So the success of the real estate sector is derived from the business prospects of the tenants. What this means is simply that, at the strategic level, in real estate plenty of business will continue to be based on speculation – a totally opposite strategy to innovativeness.

If we go beyond specifically real estate economic considerations, another non-innovative side of economies is when cheap labour, potentially exposed to the virus, is brought in because of uncontrolled immigration from developing countries; this then would favour labour intensive work ahead of automation – this being the trend in many developed countries, with the exception of the ICT field. The recovery from the virus/crisis will inevitably shift this balance away from immigration of cheap labour towards automata, which then, in principle, would encourage innovativeness. Another turn is likely to happen with the trend of outsourcing the production overseas, when countries realise that they do need local production to secure the availability of sufficient stocks of vital necessities for their own citizens, at the time of crises.

The few glimpses of hope notwithstanding, in earnest, the likely consequence of this crisis is expected to be global economic depression for years to come. This new reality in real estate business is furthermore likely to shift towards long-term processes and a further cementing of the sustainability principles that already were established before the crisis, namely working towards long-term environmental, social, cultural and economic gains. However, amid the more general sustainable development trajectory, the specific criteria to judge whether investments and developments are deemed sustainable, will inevitably undergo change. So for new housing and workplace environments, it is not sure anymore that all the received wisdoms will remain unchallenged.

■8.0 CONCLUSION

Evidently, real estate is not among the most sensitive of industries to external influence. One reason for this is that real estate practitioners are, in the main, risk averse and conservative. We can therefore expect that, overall (if such a term is appropriate in the rather fragmented real estate world), the effects of the virus on real estate will be manageable in relative terms. When the situation is cleared, the extent of survivals and perishing might still surprise us in one way or another. On the basis of the deliberations offered in this contribution, the prescription for tackling any virus outbreak related problems would be to rely on the three pronged defence of common sense, innovation and a sufficiently autocratic regime that protects us from such misfortunes – also within real estate sectors.

Notes

(1) Domestic tourism comprises the fortunate exception here. For example, in Hungary the state begun a campaign in June 2020 specifically for attracting holidaymakers to travel domestically, rather than out of country. (This appeared logical at the tail end of the first virus outbreak anyway). Seems like this turn has been helpful also for improving the employment situation in the country.

(2) So RICS assumes that the high preparedness of Far East Asia will lessen the negative impact of the crisis. Other organizations, however, have a different viewpoint (Pickert et al., 2020). It is furthermore estimated that COVID-19 crisis will be even larger than 2008 financial crisis, Spanish influenza and the great depression combined. (Prof. Daron Acemoglu, MIT, Royal Economic Society, Seminars *Economic approaches for analysing the short-term, medium-term and long-run impact of the COVID-19 crisis*).

(3) Some might argue that subjective risk analysis of an act of God or human negligence that are not directly related to real estate cannot be proxy for real estate risk. They are, of course, partially right: real estate risk concerns economic consequences only, and is expressed through historic time-series of the volatility of these consequences. So overt market behaviour, rather than hypothetical one. However, in a completely new market reality the foundations for such methodology breaks down, as the historic returns lose their validity in the new situation. How could we then establish the necessary risk? Obviously, the subjective approach might not yet be documented in best practice or research. Nonetheless, discussions with colleagues in both industry and academia suggest that this is an avenue of research worth pursuing further, as it could provide a breakthrough for risk-adjusted real estate investment appraisal amidst the current situation. Here are several other options, of course, some more heuristic than others. (To go through them is beyond the scope of the present paper)

(4) At the time of revising this paper (September 2020), the second wave is already upon most European countries, albeit with varying intensities.

(5) And, admittedly, even better if 'rigour in method of data collection' was to be applied, as an anonymous reviewer pointed out. To provide such rigour in the form of content analysis, direct observations or other relevant methods is indeed both the premise and a challenge for follow up work in this vein.

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