The market mind

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Abstract

The Market Mind Hypothesis (MMH) posits the two-way premise of 'market-as-mind' and 'mind-as-market'. In this talk I focus on the market-as-mind component of the wider project as presented in Schotanus (2022) where the primary concern is with the analysis of financial markets. A central claim of MMH is that market-as-mind, or what investors casually refer to as 'the market's mind', is a 'collective mind' with market mood its phenomenal experience. In this talk I explore this central claim and I argue that it seems to be presented in two different modes: one mode seems to present market-as-mind in terms of the mind of a singular collective entity, and the other mode seems to present market-as-mind in terms of the intersubjective relations of market investors. With reference to this second mode I propose an interpretation of an intersubjective approach which leads me to question the standard 'individual–collective' dichotomy. An example is provided from game theory and some possible implications are tentatively considered for MMH.

1. Introduction

Patrick Schotanus's article on cognitive economics and the Market Mind Hypothesis (MMH) (Schotanus 2022) covers a wide field, so in this talk I focus specifically on the 'market-as-mind' part of the two-way premise of 'market-as-mind' and 'mind-as-market'. I hope it's not too misleading to focus on just one half of the two-way premise without consideration of what

is meant by mind-as-market, but as the primary concern of the MMH article is the analysis of the (financial) market, my approach broadly follows that of this article.

2. How to interpret 'market-as-mind'?

The first question that strikes me about the expression, 'market-as-mind', is how to interpret 'as' here. It's not clear to me quite how to interpret this. This is complicated by the presence of expressions such as 'the market's mind' and 'Mr Market's mind'. These expressions are sometimes delineated as casual expressions used by investors in contrast with the more formalised academic notion of 'market-as-mind', but they seem to leave their trace on the argument. It seems to me that there are at least 3 possibilities here for interpreting 'market-as-mind':

One possibility is that it's a striking metaphor, one that helps to refocus our thinking about the market and see it in a fresh light but which is not to be taken literally for serious theorising. Another possibility is that the market is to be theorised 'as if' a mind, in the sense that there are structural or perhaps functional similarities or parallels between markets and minds particularly if the latter are interpreted as cognitive systems rather than as what goes on inside the heads of human beings. A theory that could capture these parallels would provide new insights into how both markets and minds work. A third possibility is that a market *is* a mind in some sense. Here the expression is not metaphorical or an imaginative prompt for fresh theorising but is intended literally. For example, the symposium website poses the question: 'What if the market, instead of simply aggregating individual minds, creates and gathers into existence a collective mind of its own, including extended consciousness?'. Is this simply a provocative entrée to the topic of the symposium or is it more than this? In connection with this third possibility, I wonder if there is also a tendency sometimes to anthropomorphise market-as-mind: Mr Market is a collective entity with a mind (p. 97) and the market has not only 'moods' and 'sentiments' () but also an 'intention' which is 'to allocate society's material and mental resources as efficiently as possible' (p.102). Sometimes I wonder whether ontological claims are being made about markets and minds, or whether these claims are really just metaphors. In what follows I largely work with the second interpretation, that the market might be theorised 'as if' a mind in the sense of exploring whether there are structural similarities or parallels in cognitive systems that might aid analysis of financial markets. (This would also apply to the 'mind-as-market' component of the argument.)

Just a word on metaphors, though. Perhaps we can't do without them; their effects can be long-lasting and they can have an intuitive appeal. Perhaps I could mention Adam Smith here, whose spirit has been reclaimed for this symposium and in the Introduction to the MMH article. The invisible hand is perhaps the most famous of all metaphors for the operation of (competitive) markets, but the invisible hand of the market – as a means of allocating resources – is not mentioned in the *Wealth of Nations*, which arguably is not primarily concerned with the operation of markets. In Smith's writings that are available to us, the invisible hand is never discussed in relation to markets. (The one mention of the 'invisible hand' in the *Wealth of Nations* at IV.ii.9 doesn't refer to the market as a means of allocating resources.) The power of the invisible hand metaphor now seems to float free of specific economic arguments and therein lies some of its power.

3. Market-as-collective-mind

Putting aside these caveats, the Market Mind Hypothesis is a proposal about the *collective* nature of the market-as-mind: "'Mr Market" is … a collective entity with a mind' (p. 97). Running throughout the article I think is an implicit individual–collective dichotomy but with the emphasis securely on the 'collective' aspect (eg collective dimension of the mind p.88; collective consciousness, pp. 97,98; collective mind–body, pp. 88,92,102; collective intentionality pp. 97; 'collective economic mind', p. 99; market mood is a collective experience, p. 104). MMH builds on '4E' cognitive science, according to which the individual mind is embodied, embedded, enacted and extended. Even in the case of the individual mind, 4E cognition means that mentality is not restricted to what goes on inside the head but includes bodily and worldly structures including other minds too (Clark and Chalmers 1998). In the case of 'extension' particularly, conscious experience goes beyond an individual brain and can result in collective intentionality and the collective market mind (pp. 98-99).

It seems to me that there are two different modes of presentation for this collective mind.

One mode of presentation for the collective mind of the market is as *the mind of a singular collective entity*. There are different variants here. One variant is the notion of a market as a system of distributed cognition / knowledge such that the market knows more than any individual trader knows or could know (eg pp. 97, 99, 102). As for example a system of computers is a distributed system if each computer contributes to what the system of computers taken together knows, but each computer's knowledge is less than the knowledge of the system

of computers. Another variant is the suggestion that the collective mind of the market is akin to the mind of a group where the 'group' is a singular object distinct from its individual members (pp. 98, 99) A third variant perhaps is that the market's mind is a composite of individual extended minds, supported by advanced and extensive technologies, resulting in a supercharged and supersized active externalism; and this cognitive extension includes consciousness manifested via market mood, perhaps suggesting that market members directly experience the collective consciousness (mood) of the market mind (pp. 97-99). This seems to suggest that members of the group (market members) have group consciousness and are not restricted to the consciousness of being a member of the group. Also p. 105

The other mode of presentation of the collective mind is in terms of *intersubjective relations among the participants of the market* (or within a network). Although market mood is a 'collective experience' (p. 104), its phenomenal qualitative sensations are 'intersubjectively experienced by market participants' (p. 104; cf also 103, 105, 106). In this case conscious experience of market mood, or 'what it is like to be in that state for investors as (part of) a collective' (p. 103) or 'how it feels to be in it' (p. 105) is rendered intersubjectively among interacting market participants or those within the communication network or market (p. 98). Here the market's mind is not interpreted as a singular collective entity. Rather it is interpreted plurally in terms of interacting market participants who experience the market and its mood intersubjectively. The phenomenological question of 'how it feels' 'or how it feels to be in the market' is thus an intersubjective issue among market investors. Market mood is not experienced by the market as a singular collective entity, whether this is construed as a system of distributed cognition or as a group that is distinct from its members or as a collective composite or consciousness. Market mood is experienced intersubjectively by multiple market traders.

These two modes of presentation – the market as a singular collective entity and as intersubjective relations among multiple market investors – might be simply characterised, perhaps oversimplified, in terms of 'it' and 'they': 'what *it* (the market) knows and feels' and 'what *they* (the investors) know and feel'. Perhaps these two modes of presentation are meant to amount to the same thing, as two sides of the same coin. But the two sides of the same coin, its obverse and reverse, are not identical. It seems to me that the distinction between them raises some interesting issues.

4. Intersubjective relations: neither individualist nor collectivist

It is widely assumed that the only alternative to an individual analysis is a collective analysis, and the dichotomy between individual and collective is widely adopted across philosophy and the social sciences. This poses a difficulty for approaches that try to question the pervasive individualism of theories of human behaviour because 'collective intentionality' presents philosophical challenges when applied to individual human subjects.[1] But this individual–collective dichotomy does not include intersubjective relations among plural human beings (individual agents, subjects). Recognising the significance of intersubjectivity among multiple agents allows an extension of the dichotomy into a trichotomy: individual–intersubjective–collective.

This is a large issue. My interest here is how an intersubjective analysis might be helpful for developing the notion of market-as-mind in a financial context. Here I draw on a simple intersubjective analysis that I recently proposed for game theory (Brown 2020; cf. 2019). Many theorists find game theory too individualistic but game theory doesn't lend itself to a collective (team) analysis without changing the game itself which is meant to be played by individual players, not collectively by a team of players. I've argued that an intersubjective approach dissolves the standard individual–collective dichotomy and makes possible new results because individuals cognize the relevance of their shared social context.

This intersubjective approach retheorizes the way that players cognize the game, whilst accepting all the other assumptions of classical game theory (including individual preferences and individual rationality, i.e. individual maximization). The difference is that it construes players' cognizance of the game (or of any other shared situation) in terms of the shared phenomenological standpoint of *each of us*. This standpoint combines what I termed the singularity of agency (i.e. agents are individuals) with the agents' cognizance of and self-inclusion among the plurality 'us' who are relevant in that particular social context. This combination dissolves the standard individual–collective dichotomy between 'I' and the collective 'we', although 'each of us' can be interpreted as a distributive 'we' (as in 'we are pleased to see Panmure House so well restored' which is equivalent to 'each of us is pleased to see Panmure House so well restored'). This intersubjective approach thus helps to disambiguate the two senses of 'we'.

[1] Schweikard, and Schmid (2020) provide a survey.

I argued that this intersubjective approach transforms the logic of individual choice: as individual agents include themselves within 'us', a particular reference group, this self-inclusion radically affects their cognizance of the situation which in turn affects their best choice of action. I didn't explicitly draw on 4E cognition or any specific approach in cognitive science. I left it open as to how subjects' intersubjective understanding could be theorised in psychological terms; I just took it as obvious that human beings exist as social creatures and that this needs to be taken explicitly into account in situations of shared social context.

5. Intersubjectivity – a different kind of economics: beyond Nash equilibrium?

But how could this notion of intersubjectivity affect economic analysis? Well, it affects game theory, and game theory is widespread in economics. Game theory might also be relevant for financial market analysis.

The core of the argument here is that some standard concepts in game theory presuppose a strong form of individualism that is not compatible with an intersubjective approach

Consider the dominant equilibrium concept in game theory (and economics) of Nash equilibrium. According to this equilibrium concept, every agent is doing the best she can if her action cannot be bettered *given* the actions of the other agents. This equilibrium concept is allied to the notion of 'best-reply reasoning' in game theory according to which a player's rational (i.e. best) choice of action is a best reply to the actions of the other agents; that is, an action is assessed according to whether, given the other players' actions, it is possible to choose a better action. If there is no better action for a player given the other players' actions, then this action is the player's best action.

Best-reply reasoning and Nash equilibrium are sometimes criticised for being too individualistic, and in game theory the Nash equilibrium may be inferior to other possible action profiles. An example of this is the Prisoners' Dilemma game where best-reply reasoning leads players not to cooperate even though both would be individually better off if they were both to cooperate. Here the Nash equilibrium is where neither player cooperates but this has inferior payoffs than if they were both to cooperate. This game has been much disputed but it is defended by standard game theory on the grounds that the reasoning is logically indisputable.

But best-reply reasoning and Nash equilibrium are incompatible with intersubjective reasoning in terms of 'each of us', where 'us' are 'the players of the game' or perhaps 'the investors in this market'. (A plurality is a class as many, not a class as a singular entity.)

Consider (i) and (ii) which are alternative formulations of best-reply reasoning in a simple two-player game:

(i) I choose my best action given the action that you choose.

(ii) Each of us (among the players of the game) chooses her best action given the action that each of us chooses.

The statement in (i) is from the standpoint of 'I'. The co-player is 'you'. According to this statement, the subject player, 'I', chooses her best action given the action chosen by the co-player, 'you'. The statement is an example of best-reply reasoning.

In (ii) the statement is from the standpoint of 'each of us'. But now the statement does not make sense. It is not possible for 'each of us' to choose an action given the action that 'each of us' chooses. Even if 'each of us' individually aims to choose her best action, best-reply reasoning is not possible for players who reason intersubjectively. This is because intersubjective reasoning situates each of the players' decision in the wider context of 'us' and this precludes the strong form of individualism that is presupposed by best-reply reasoning.

Best-reply reasoning and Nash equilibrium thus require the strong form of individualism that characterises game theory and they are not relevant for approaches that do not adopt this strong individualist assumption. This opens up the possibility of new approaches to analysing games, such as the intersubjective approach, which do not presuppose this strong individualism. Without going into details, according to the intersubjective approach I've proposed, players recognise their *mutual uncertainty*, that is, uncertainty for 'each of us' about the choice of action by the co-player, and each of them takes this mutual uncertainty into account in maximizing what I term their 'intersubjective expected payoff'. A consequence of this, for example, is that it is possible for cooperation to be a maximizing individual choice in the Prisoners' Dilemma.

6. Beyond the individual–collective dichotomy?

Returning to the MMH, I don't know whether this particular approach to intersubjective analysis is of any relevance to MMH. The example above is meant to illustrate the general point that the standard individual–collective dichotomy restricts the possibilities for analysing multiple agents in shared social context. Perhaps this might suggest a rationale for the distinction between the two modes of presentation of the market mind, which I outlined above, between the market as a singular collective entity and as intersubjective relations among multiple market traders. This might, for example, be relevant for analysing dynamic interactions among market investors. If it is recognised among traders that 'each of us' wants to anticipate market trends and not be left behind by market movements, the traders' anticipatory decisions and actions might perhaps be analysed intersubjectively as responses to each other in a situation of mutual uncertainty. Herd behaviour too might possibly be analysed in similar terms, as responses to each other in a situation of mutual uncertainty.

But, as I mentioned above, the general point about the restrictiveness of the individual–collective dichotomy for analysing multiple agents in shared social context, is the main point I'm trying to emphasise here, together with the possible rationale it provides for the two different modes of presentation of the market mind. Possible specific implications for the MMH are really a separate issue and depend on detailed analysis of financial markets.

References

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