

The ‘Fallacy of Composition’ Market Failure: A Sufficient Reason for the Necessity of Macroeconomics and the Futility of Microfoundations

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Abstract

This paper argues that the critical test whether phenomena of market failure require a separate ‘general’ or ‘macro’ level of analysis was provided by Keynes. This was whether conclusions ‘correctly’ arrived at with regard to the behaviour of a part of a system, be extended and ‘correctly’ applied to the system as a whole. If the answer is ‘yes’, as is the case with regard to market failures due to externalities and public goods, then microeconomic theory and policy is necessary and sufficient to deal with the ‘mismatch’ between individual and aggregate behaviour. If, however, the answer is ‘no’ as is the case with the market failures due to the ‘fallacy of composition’ then macroeconomic theory and policy is warranted and the micro-foundations project ought to be abandoned since not all macroeconomic propositions can be derived from microeconomic theory.

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1. Introduction: Macroeconomics, Microfoundations, market failure and fallacy of composition – how they all relate?¹

Macroeconomics is a major part of economic theory, effectively established as a field of academic study after the Second World War. It examines the economy in its entirety, concentrating on the relations among aggregate magnitudes. Its origins can be traced back to Keynes' *General Theory*. Although Keynes (1936) did not use the term 'macroeconomics', he nevertheless meant by the term 'general theory' an approach that has exactly the same scope as macroeconomics. As King (2012) points out, Keynes (1939) explained this intention clearly not in the original English edition but in the preface to the French edition of his book, which appeared three years later. Keynes (op. cit.) suggested: "I have called my theory a *general* theory. I mean by this that I am chiefly concerned with the behaviour of the economic system as a whole — with aggregate incomes, aggregate profits, aggregate output, aggregate employment, aggregate investment, aggregate saving rather than with the incomes, profits, output, employment, investment and saving of particular industries, firms or individuals. And I argue that important mistakes have been made through extending to the system as a whole, conclusions which have been correctly arrived at in respect of a part of it taken in isolation" (p. xxxii).

'Microfoundations' is the project of deriving macroeconomics from the optimizing behavior of individual agents in a general equilibrium setting. Microeconomic theory is constructed, as is well known, on the basis of optimizing action by rational individual agents and, thus, the micro-foundations project in effect argues that microeconomics should constitute the foundations for the whole of economic theory. The behaviour of rational economic agents can be aggregated to form a particular market which can be viewed as the sum total of its parts. The behaviour of markets, therefore, can be derived from the behaviour of its constituent parts - the rational optimizing individual economic agents. A number of interrelated and interdependent markets can be further aggregated to form an 'overall aggregate' or a 'general equilibrium' of all markets in an economy. The study of the economy 'as a whole', therefore, need not go any further than the study of a 'general equilibrium' of markets or be any different from the study of the behaviour of individual economic agents.

This is in accord with methodological individualism, which considers all social phenomena to result from the actions of individuals and, hence, to be explainable only in terms of the individual agents' views and actions.² This methodological doctrine has been influential and indeed dominant in the evolution of economic theory for

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² See, for example, Brodbeck (1958).

more than a century, from the marginal revolution onwards. Today it has the support of a large part, if not the majority of the academic establishment, and undoubtedly bolsters the widespread acceptance of the Microfoundations project.³ A clear implication of the project is that only microeconomic theory is to be considered as economic ‘science’ and macroeconomics should be discarded from the curriculum.⁴ Any macroeconomic propositions that cannot be derived from micro-theory do not deserve to be taught since they are unsound and scientifically unfounded.

There is, however, an obvious difficulty with this approach of reducing aggregate behaviour to the behaviour of its constituent parts: what happens if there is a ‘mismatch’ between individual and aggregate behaviour and the aggregate outcome is different in some important respect from the outcome at the individual level? The possibility of such a ‘mismatch’ or ‘divergence’ has, of course, long been recognized in conventional economic theory. Indeed, Adam Smith’s ‘invisible hand’ theory is a famous example of such a divergence between individual behaviour and aggregate outcome: the pursuit of self-interest by individuals in competitive markets promotes individual welfare but it also promotes, unintentionally, collective welfare. For Smith, the significant policy conclusion of such a ‘mismatch’ between the individual parts and the aggregate whole was clear. Since ‘selfish’ behaviour by the parts of a system produces ‘altruistic’ outcomes, albeit unintentional, the system or economy as a whole has no need for government economic intervention to promote collective welfare. The best possible policy is that of *laissez-faire*. Smith, of course, readily acknowledged that under certain circumstances, especially of inadequate or weak competition, self-seeking behaviour might promote individual but not aggregate welfare, in which case aggregate outcomes need to be modified through some minimum government intervention in the economy.

The need for government intervention to correct possible market deficiencies was well recognized and seriously studied already in the nineteenth century, first by John

³ Despite strong criticism of the Microfoundations project and the resulting ‘micro-founded’ macroeconomics from, among others, Kierman (1992), Rizvi (1994) and, more recently, Buiter (2009) and King (2012), not much has changed since Tobin’s (1986) account of nearly 30 years ago: “... it is scarcely an exaggeration to say that no paper that does not employ the ‘Microfoundations’ methodology can get published in a major professional journal, that no research proposal that is suspect of violating its precepts can survive peer review, that no newly minted Ph.D. who can’t show that his hypothesized behavioral relations are properly derived can get a good academic job” (p. 350). In fact, the Microfoundations project plays an important disciplinary role in buttressing the economics discipline’s ‘hard core’ (see, Skouras and Kitromilides, 2014).

⁴ For example, Lucas (1987) was among the first to draw clearly this implication: “The most important recent development in macroeconomic theory seems to me describable as the reincorporation of aggregative problems such as inflation and the business cycle within the general framework of ‘microeconomic’ theory. If these developments succeed, the term ‘macroeconomic’ will simply disappear from use and the modifier ‘micro’ will become superfluous. We will simply speak, as did Smith, Ricardo, Marshall and Walras of *economic* theory”.

Stuart Mill (Mill, 1909) and then by Henry Sidgwick (Sidgwick, 1901).⁵ The theory of ‘market failure’⁶ has been developed and refined significantly in the twentieth century by a number of authors, such as Pigou (1934), Khan (1935), Meade (1952), Samuelson (1953), Coase (1960), Mishan (1971). The analytical foundations of the theory were laid by Pigou (1934) in his seminal book *The Economics of Welfare*, where he deals with a number of situations in which *laissez-faire*, even under competitive conditions, is not necessarily socially beneficial. In these cases described and discussed by Pigou (1934), the optimizing behaviour of rational economic agents results in aggregate outcomes that need to be corrected by government intervention in the economy. The presence of pure public goods and positive and negative externalities in the economy represent the typical cases of ‘market failure’ which can, however, be dealt with within the traditional framework of conventional microeconomics and general equilibrium analysis. If phenomena that represent a ‘mismatch’ or a ‘divergence’ between the behaviour of the parts and the behaviour of the whole can be accommodated within the traditional microeconomic framework it follows that there is no need for a separate ‘macroeconomic’ level of analysis. In other words, if the reasons for market failure can be identified and analysed using conventional microeconomic theory then the various ‘imperfections’ of the system can be ‘corrected’ in the manner suggested by Pigou (1934), without recourse to a separate level of ‘general’ or ‘macro’ economic theory dealing with the system as a whole as envisaged by Keynes (1936).

There is, however, a type of ‘mismatch’ between individual behaviour and aggregate outcomes, identified by Keynes in the *General Theory*, which has come to be widely known as the ‘fallacy of composition’ that cannot be dealt with using the theoretical framework developed by Pigou (1934) and the normal tools of microeconomic analysis. This poses a crucial and, as argued in this paper, insurmountable obstacle to the realization of the micro-foundations project and provides a decisive affirmation of the need of macroeconomic theory and policy.

The ‘fallacy of composition’ is the claim that what is true for the parts may not be true for the whole. Often what is true for the parts is also true for the whole. But that is not always the case. There are quite a few instances in which the properties of the whole

⁵ See, Medema (2003) and, especially Medema (2009), for the history of economic thought on market failure and government microeconomic intervention brought up to date.

⁶ The term ‘market failure’ has acquired in neoclassical theory a rather strict and technical meaning. Since Bator (1958), it has been associated with the notion of economic inefficiency, as a divergence from Pareto optimality arising from externalities and public goods. In other words, even in a general equilibrium system of perfectly competitive markets, the allocation of resources may fail to generate maximum social welfare and be Pareto optimal, meaning that it is possible to reallocate resources to make at least one person better off without making anyone else worse off. Clearly, this paper adheres to the traditional rather than the neoclassical general equilibrium usage of ‘market failure’.

differ in some respect from those of the parts and cannot be inferred from them.⁷ How significant is the ‘fallacy of composition’ type of ‘mismatch’ between individual and aggregate behaviour and why it is not possible to analyse this type of ‘mismatch’ using conventional microeconomic analysis? In section 2 we will examine the first question and in section 3 we will consider the second. Section 4 draws the implications for the necessity of macroeconomics and the futility of the Microfoundations project and, finally, Section 5 concludes the paper with some relevant comments.

2. How important is the ‘fallacy of composition’ problem?

The fallacy of composition arises quite widely in economic life giving rise to many so-called paradoxes. The oldest and best known instance is the one concerning saving. This was first noted 300 years ago by Bernard Mandeville (1988). In his *Fable of the Bees*, published in 1714, he shows how a ‘private virtue’ (saving) becomes a ‘public vice’ because of the combined decision by all citizens of a prosperous community and the state to suddenly cut down spending in the interest of ‘saving’.⁸ The ‘paradox of thrift’, central to the development of the Keynesian theory of effective demand, shows that what is true for the part is not true for the whole: one individual can increase savings by cutting down spending but not if all or even many other individuals attempt to increase saving by cutting down spending at the same time.⁹

The ‘debt deflation’ theory of great depressions by Irving Fisher (1933) is another instance of a paradox based on the ‘fallacy of composition’. Fisher (op. cit.) shows that, one single individual attempting to reduce indebtedness by selling assets can succeed but not if all or even a significantly large number of individuals attempt to do the same. The paradox here, as in the previous case, is that the behavior of the whole (the economy) is different from that of the parts (individual agents).

A similar divergence between individual behavior and behavior of the economy as a whole, can be noticed when individual households and firms or even banks attempt to

⁷ Examples can be found in a host of different fields. The odd numbers 1 and 3 are parts of 4 but the latter is not an odd number. Steak and ice cream is a favorite meal but the two together on the same plate may not be. Dogs are made of colorless atoms but they are not colorless. Every player in a team is a superstar but the team may not be a super-team. Arriving early may secure a parking space in a car park with limited spaces but not if everybody arrives early. By making an ‘early start’, one can avoid road congestion but not if many others also make an ‘early start’. One person standing up in a stadium can gain a better view but not if all stand up.

⁸ This idea has been described by Leslie Stephen as “a cynical system of morality ...made attractive by ingenious paradoxes” (quoted by Keynes, 1936, p. 359).

⁹ Keynes (1936) was, of course, quite aware of the fallacy of composition and developed a macro (or general) theory exactly in order to avoid the erroneous results that reasoning from the parts to the whole leads to.

increase their liquidity. When all try to do it at the same time, liquidity dries up in the economy and most individual agents become even less liquid than before.¹⁰

Specifically in the case of banks, such paradoxes abound. If most of their customers demand cash at the same time, they go bankrupt. Loss of confidence in a bank by one individual, allows the individual customer to get his money but no individual gets any money if they all lose confidence and demand their money at the same time. A similar problem arises when banks lose confidence in their clients. One bank can reduce the riskiness of its assets portfolio by calling in loans but not if all banks at the same time call in their loans.¹¹

Kalecki (1971) has highlighted similar paradoxes relating to the volume of profits. One firm can increase its profits by reducing wages but if all (or even sufficiently many) firms reduce wages, the total volume of profits decreases. A somewhat different paradox is when a firm makes a risky investment on which it makes a loss. Despite the negative profits of the investing firm, the value of the failed investment increases by the same amount the volume of profits in the economy as a whole. It follows that not all investments can fail even if they are all risky.¹²

It should be noted that these paradoxes concerning profits are not the result of some unusual theoretical construction dependent on strange assumptions but flow directly from the national income accounting definitions and identities. A last one that is worth pointing out, concerns the operation of a loss-making state enterprise, which reduces the profits of private firms in the same industry. Nevertheless, the total profits of all firms in the private sector increase by an amount equal to the losses of the state enterprise.

It may be concluded that the ‘fallacy of composition’ problem is quite extensive and pervasive in the economy and cannot be brushed aside as a minor impediment to the Microfoundations project. Let us now examine the reasons why the ‘fallacy of composition’ type of market failure is different from other type of market failures and why it cannot be handled by the standard tools of conventional microeconomics.

3. Why the fallacy of composition problem cannot be treated like the externalities and public goods market failures?

Market failure occurs because there is a ‘mismatch’ or a ‘divergence’ between individual behaviour and aggregate outcomes or results. As noted above, microeconomic theory has always recognized the possibility of ‘market failure’. The existence of ‘externalities’ and ‘pure public goods’ represent the classic cases of

¹⁰ See, Dow (1993, pp. 146-52).

¹¹ See, De Grauwe (2009, p. ???).

¹² This strictly requires that the other sources of profits do not prevent profits from being positive. For example, profits will be positive if the government budget deficit is not smaller than the trade balance deficit and saving out of wages does not exceed spending from any source other than wages.

market failure in conventional microeconomics. From the standpoint of a rational economic agent, the outcome of imposing externalities, positive or negative, on third parties is both rational and welfare maximizing. Similarly, it is both rational and welfare maximizing for an individual economic agent to act as a 'free-rider' in the provision of public goods. The consequences for the economy as a whole of this type of optimizing behaviour by individual economic agents is to produce an overall mis-allocation of resources: too many resources will be devoted for activities generating negative externalities and not enough resources will be allocated to those generating positive externalities while pure public goods will not be produced at all.

These conclusions about the effects of the behaviour of individual parts on the system as a whole have been appropriately derived using the existing microeconomic theoretical framework. For example, if fossil fuels, for a variety of reasons, are underpriced by the market then carbon emissions will increase both at the individual and the aggregate level. The correct policy conclusions about the behaviour of the whole system can be derived by observing the behaviour of its parts: negative and positive externalities can be eliminated through the imposition of taxes and subsidies and redefinition of property rights; public goods can be produced by governments and free-riders can be compelled to contribute towards the financing of public goods through taxation. The incorrect price signals that produce the external effects can in principle be 'corrected', so that rational agents can adjust their behaviour in order to take into account the effects of their action on third parties. These adjustments by correcting the mis-allocation of resources can produce a reconciliation of individual and collective welfare without the need for a separate macroeconomic level of analysis and policy. The aggregate outcomes can be altered by microeconomic policies that simply give the appropriate signals to rational agents to 'internalize' the externalities. There is no need for the government to organize the 'rescue operation', by increasing its expenditure and expanding its budget so as to alter aggregate demand. Economic agents, given the appropriate incentives by government, can correct the failure of the market through their own actions.

The 'fallacy of composition' type of market failure, however, cannot be accommodated within the microeconomic framework and corrected by providing the appropriate market signals, as in the case of externalities. Individuals' actions are self-defeating because there is lack of coordination in their decision-making. If individuals could be convinced that their actions are self-defeating, they would stop attempting to achieve the same objective all at the same time. Collective action can solve the coordination failure but there is no private incentive to organize collective action nor is there an obvious way that the government can provide the appropriate incentives, so that rational agents can correct the market failure through their own actions. Unlike the case of market failure due to externalities, market failure produced by the 'fallacy

of composition' requires the government to organize the needed collective action and, most importantly, affect aggregate demand by changing the size of the government budget.

Public goods also require the government to organize collective action for their production. It would seem then that the 'fallacy of composition' type of market failure resembles that of public goods. But there is an important difference between the two. In the case of the public goods, the microeconomic approach is quite adequate and suffices in offering an explanation and in providing a solution to the phenomenon of market failure. In contrast, the market failure due to the 'fallacy of composition' cannot be corrected by microeconomic actions. Most crucially, it makes no sense and can hardly be even understood by microeconomic analysis. It requires a macroeconomic approach and can be overcome only through appropriate macroeconomic policy measures. The deeper reason for this contrast is that this latter kind of market failure necessarily affects the whole or overall level of economic activity, necessitating a view of the whole for the proper understanding of the situation and formulation of policy.

The critical test whether the phenomenon of market failure requires a separate macroeconomic level of analysis has been provided by Keynes (1936) in the quote at the beginning of this paper: are conclusions, correctly arrived at with regard to the behaviour of a part of a system, mistaken when extended and applied to the system as a whole? If the answer is 'yes' then macroeconomic theory and policy is warranted. If the answer is 'no', as is the case with regard to externalities and public goods, then microeconomic theory and policy is sufficient to deal with the 'mismatch' between individual and aggregate behaviour. A microeconomic theory that explains the behaviour of individual economic agents can in this case be extended and 'correctly' applied to explain and draw policy conclusions about the behaviour of individuals at the aggregate level.

Consider the case of market failure due to positive or negative externalities. What conclusions can be derived with regard to the behaviour of individual parts of the system and the behaviour of the system as a whole? Conventional microeconomic theory concludes that, under certain circumstances, optimizing behaviour by rational economic agents can produce a miss-allocation of resources at the aggregate level. If individual economic agents engage in optimizing behaviour by reacting to 'incorrect' market signals, the 'correct' conclusion about the effect of such behaviour on the system as a whole is that there will be resource miss-allocation. The observation at the individual level, that in the presence of 'distorted' market signals an individual will either over utilize or underutilize resources, can be extended and 'correctly' applied at the aggregate level. If one individual is faced with an underpriced environmental resource, the effect will be over utilization of the resource by that individual. If all

individuals are faced with an underpriced environmental resource, the collective outcome will be the same as that of a single individual: over utilization of the underpriced resource. Correct conclusions about the behaviour of the whole can be derived from observations about the behaviour of the individual parts of the system.

In the case of the ‘fallacy of composition’, however, observations about behaviour at the individual level if extended and applied at the aggregate level will result in mistaken conclusions about how the system as a whole works. If one individual cuts consumption, the effect will be increased individual saving. If all individuals cut consumption, the aggregate effect will not be the same as that of a single individual and aggregate saving will not increase. In this case, microeconomic theory needs to be replaced by macroeconomic theory for an understanding of what is happening and for drawing appropriate policy recommendations.

4. Why Macroeconomics is essential and the Microfoundations project is misguided and futile?

The macroeconomic measures in instances of market failure, will typically involve governments doing the opposite of what private agents do. They will also involve a change (more often than not an increase) in the size of the government budget and debt. Thus, if private individuals are unsuccessfully attempting to increase their saving, the government must increase its dissaving, enabling in this way the private sector to achieve its objective and stopping the deflationary spiral. Similarly, if the private sector attempts unsuccessfully to reduce indebtedness, government indebtedness must be increased. This will help the private sector to achieve its objective, thus putting an end to the debt deflation spiral; and so on. These policy conclusions cannot be derived from microeconomic theory and are, therefore, beyond the understanding of the micro-foundations project.

The other instances of the ‘fallacy of composition’ mentioned in relation to Kalecki in section 2 above, are also incomprehensible from a microeconomic standpoint. This is because the volume of total profits crucially depends on aggregate demand and makes little sense in microeconomic theory. For example, an increase in total profits, according to microeconomic reasoning, can only result from an increase in monopolization (i.e. increased profit margins in certain firms and industries resulting in a higher average profit margin the economy as a whole). A Kaleckian macro-approach reveals the falsity of this reasoning and shows clearly that increased monopolization, at any given state of aggregate demand, cannot increase total profits. The determinants of total profits, which are all macroeconomic monetary magnitudes closely related to aggregate demand, are simply beyond the scope and understanding of microeconomics.

The inability of microeconomic theory to deal with the volume of profits is not a minor defect. Since profits (both actual and even more so expected) constitute the

most important motivating force of a capitalist economy, the determination of their volume is essential for an understanding of its mode of operation. Moreover, policy measures that may affect the volume of profits provide powerful levers for regulating the level of economic activity. It is, therefore, essential to have a theory that can explain how total profits are related to aggregate demand and what exactly are their determinants.

It can be shown that the spending decisions regarding consumption and investment of individual agents (firms and households, especially dividends-receiving households) have collectively a major impact on the volume of profits. But these decisions are taken individually and cannot be made collectively. Once more, collective action can be organized only at the macroeconomic level by the government, in the form of fiscal policy, or by the central bank, in the form of monetary policy. The micro-foundations project is again in this context a lost cause, since microeconomic theory is incapable of making any contact with this issue. It can neither provide an understanding of how the volume of profits is determined nor explain how this magnitude can be affected.

Though the ‘fallacy of composition’ market failure suffices to reject the Microfoundations project, it is not the sole objection to it. Indeed, most criticism has concentrated on its inherent weaknesses and inability to make convincing progress. The project requires that the macro behavior of the economy corresponds to and is represented by the sum of the micro behavior of the individual agents. But the aggregation of the individual agents’ micro behavior is not an easy matter. The immediate casualties are the heterogeneity of agents and possible non-linearities in their behavior, which need to be ignored for consistent aggregation. But a lot more needs to be sacrificed. The required assumptions for consistent linear aggregation include:

“a. homothetic preferences;

b. weakly separable and linearly homogenous production functions, identical for all firms;

c. homogenous and infinitely divisible commodities and factors of production;

d. a common set of prices with constant relative ratios;

e. fixed distributions of income and endowments over time.”¹³

¹³ Martel (1996) in Colander (1996, p. 128).

Even so, it would seem that the Microfoundations project cannot proceed without invoking the concept of the ‘representative agent’. Colander et al (2008) argue that “Then, as discussed in Kirman (1992) to avoid the Sonnenschein-Mantel-Debreu aggregation problem---namely the problem that the aggregation of individual behaviors does not generally inherit the nice properties of those agent behaviors---it makes the additional ad hoc representative individual assumption” (p. 2).¹⁴ But the reduction of heterogeneous agents to a single representative agent makes for misleading and often wrong results, leading Kirman (1992) to the conclusion that “the ‘representative’ agent deserves a decent burial, as an approach to economic analysis that is not only primitive, but fundamentally erroneous” (p. 119).

To summarize, not only is the Microfoundations project based on unrealistic and restrictive assumptions regarding preferences and production functions but it also assumes away the imperfect knowledge and uncertainty of the real world, ignores the heterogeneity of decision-makers, disregards interactions among agents and precludes any coordination failures. Oblivious to these failings, it then fantastically posits in all seriousness that the behavior of the representative agent corresponds to that of a real macroeconomy. It should be evident that such a correspondence is far from warranted and can only be fortuitous and exceptional. In general, it is far more reasonable to expect that the Microfoundations approach will in most instances result in a fallacy of composition than it will not.

The above extremely special conditions and deficiencies underlying the Microfoundations construction, constitute compelling reasons for the fallacy of composition to persistently frustrate and invalidate the Microfoundations project. It may be feasible to reconcile the micro and macro approaches, if not fully at least to some extent, and this may best be done starting from the macro side.¹⁵ In contrast, the fallacy of composition problem poses an insuperable obstacle to the reduction of macro to micro and the elimination of macroeconomics.

¹⁴ It is only then that the fallacy of composition cannot arise within ‘micro-founded’ modern macroeconomics (such as the dominant Dynamic Stochastic General Equilibrium model), since it is ruled out by the constitutive assumptions of the model.

¹⁵ Micro elements can be fitted in and even affect the outcomes at the macro level. For example, in a Kaleckian model, investment decisions by individual firms when aggregated affect directly the level of economic activity. Similarly, the strength of competition and pricing in micro markets can affect the profit margins and hence the distribution of income between wages (earned) and other (unearned) incomes, impacting in this indirect way aggregate demand and GDP.

5. Concluding remarks

The possibility of a ‘mismatch’ between individual behaviour and aggregate outcomes is always present in a decentralized capitalist economy. Lack of coordination in the decision-making and actions of individual agents are inherent to the operation of a market economy, causing the economy to malfunction in a variety of ways. Although the resulting market failures can be corrected through government intervention in the economy, Keynes (1936) warned us about the pitfalls of the logical fallacy of composition in formulating economic policy and showed clearly that microeconomic reasoning is an unreliable guide. A ‘mismatch’ between the whole and its parts can take different forms and can be thought of as different species of a large genus. Externalities and public goods are two species that can be handled by microeconomic theory and are, therefore, compatible with the micro-foundations project. But a ‘mismatch’ due to the ‘fallacy of composition’ gives rise to failures, which are neither recognizable nor tractable by microeconomic theory and, hence, are quite incompatible with the micro-foundations project.

Keynes’s important clarification in the introduction to the French edition of the *General Theory* of the meaning of the term ‘general’, in describing his economic theory, provides a crucial justification for developing a distinct macroeconomic level of analysis and policy. Conventional microeconomic analysis views market failure, as the result of rational economic agents reacting and responding to ‘inappropriate’ market signals and incentives. The policy conclusion, correctly arrived at from analyzing behaviour at the individual level, is that aggregate behaviour can be changed by altering the ‘incorrect’ or ‘inappropriate’ market signals and incentives to which individual agents react and respond. In such cases, the behaviour of the economic system as a whole need not be different from the behaviour of its constituent parts.

In contrast, no amount of ‘tinkering’ with market signals and incentives can correct the market failure that is due to the ‘fallacy of composition’. In the classic example of the ‘paradox of thrift’, the aggregate outcome of the independent decisions of economic agents to cut down spending, in order to increase personal savings, does not result in an overall increase in aggregate savings. This ‘mismatch’ between the behaviour of the whole economic system and its parts is not due to any malfunctioning of the price system producing inappropriate market signals. At the level of individual decision making, the appropriate market signal in order to incentivize individuals to increase their personal savings is an increase in interest rates. This policy conclusion, however, will be counterproductive in a situation where most individuals are attempting to cut down spending, causing a reduction in aggregate demand and re-enforcing the inability of individuals to achieve their aim of an increase in personal savings. In these circumstances, the economic system as a

whole behaves differently than its parts and, therefore, a ‘general’ or macroeconomic theory is needed, that takes into account the ‘fallacy of composition’ argument and does not mistakenly extend to the system as a whole “conclusions which have been correctly arrived at in respect of a part of it taken in isolation” (Keynes, 1939).

The significance of this crucial Keynesian insight is that it decisively affirms the necessity of macroeconomic theory and policy. It constitutes a sufficient reason for considering macroeconomics indispensable and the Microfoundations project misguided and futile. Keynes (1939) was concerned, as the above quote clearly indicates, that faulty theory can lead to ‘mistaken’ policy recommendations. The need for government intervention in the economy when there is market failure is not in dispute. However, not all types of market failure can be dealt with by means of a single theoretical framework. This would have been possible if, as the Microfoundations doctrine claims, all aggregate outcomes were an enlarged replica of the micro outcome. In the case of market failure due to externalities and public goods, so long as the outcome of the intervention has no direct or clear cut effect at the macro level, microeconomic theory and policy recommendations are appropriate. The ‘fallacy of composition’ gives rise to a type of market failure, which requires a type of government intervention that tends to change the size of the government budget and debt and, therefore, affects aggregate demand and GDP. Furthermore, market failure due to the ‘fallacy of composition’, unlike market failure due to externalities and public goods, cannot be understood or be derived from knowledge of microeconomics alone. As King (2012) puts it, in all these cases of market failure due to the ‘fallacy of composition’, “individual behaviour is governed by macroeconomic requirements” (p. 42). It would be unwise, as Keynes (1936) argued in the *General Theory*, to ignore these requirements, which represent “the vital difference between the theory of the economic behaviour of the aggregate and the theory of the behaviour of the individual unit” (p. 85).

References

- Bator, F.M. (1958), “The Anatomy of Market Failure”, *Quarterly Journal of Economics*, 72 (August), 351-79.
- Brodbeck, M. (1958), “Methodological individualism: Definition and reduction”, *Philosophy of Science*, 25, 1-22.
- Buiter, W. (2009), “The Unfortunate Uselessness of most ‘State of the Art’ Academic Monetary Economics”, *Financial Times*, March 3, Blog FT.com/Maverecon.
- Coase, R. (1960), “The Problem of Social Cost”, *The Journal of Law and Economics*, 3 (October), 1-44.

- Colander, D., P. Howitt, A. Kirman, A. Leijonhufvud, P. Mehrling (2008), “Beyond DSGE Models: Towards an Empirically-Based Macroeconomics”, *American Economic Review*, 98, 236-240.
- De Grauwe, P. (2009), “Keynes’ Savings Paradox, Fisher’s Debt Deflation and the Banking Crisis”, *University of Leuven* (2009).
- Dow, S. (1993), *Money and the Economic Process*, Cheltenham: Edward Elgar.
- Kalecki M. (1971), *Selected Essays on the Dynamics of the Capitalist Economy 1933-1970*, Cambridge: Cambridge University Press, Chapter 7.
- Keynes, J. M. (1936), *The General Theory of Employment, Interest and Money*, London: Macmillan.
- Keynes, J. M. (1939), “Preface to the French Edition of the General Theory” *The Collected Writings* 7, Initially Published 1973
- Khan, R. F. (1935), “Some Notes on Ideal Output”, *Economic Journal*, 45 (March), 1-35.
- King, J.E. (2012), *The Microfoundations Delusion: Metaphor and Dogma in the History of Macroeconomics*, Cheltenham, Edward Elgar.
- Kirman, A.P. (1992), “Whom or What Does the Representative Individual Represent?”, *Journal of Economic Perspectives*, 6(2), 117-136.
- Lucas, R. (1987), *Models of Business Cycles*, Oxford: Basil Blackwell.
- Mandeville, Bernard (1988), *The Fable of the Bees*, Indianapolis, Indiana, Liberty Fund. Initially published in 1714.
- Martel, R.J. (1996), “Heterogeneity, Aggregation and a Meaningful Macroeconomics” in D. Colander (ed.) *Beyond Microfoundations – Post Walrasian Economics*, Cambridge: Cambridge University Press.
- Medema, S.G. (2003), “The Economic Role of Government in the History of Economic Thought.” In Jeff Biddle, John B. Davis, and Warren J. Samuels, eds., *The Blackwell Companion to the History of Economic Thought*. Oxford: Blackwell.
- Medema, S.G. (2009), *The Hesitant Hand: Taming Self-Interest in the History of Economic Ideas*, Princeton: Princeton University Press.
- Meade, J. (1952), “External Economies and Diseconomies in a Competitive Situation”, *Economic Journal*, 62 (March), 54-62.
- Mill, J.S. (1909), *Principles of Political Economy*, 7th ed., London: Longmans, Green. Initially published in 1871.
- Mishan, E.J. (1971), “The Postwar Literature on Externalities”, *Journal of Economic Literature*, 9, 1 (March), 1-28.

- Pigou, A.C. (1946), *The Economics of Welfare*, (4th ed.) London: Macmillan.
- Rizvi, S.A.T. (1994), “The Microfoundations Project in General Equilibrium Theory”, *Cambridge Journal of Economics*, 18(4), 355-357.
- Samuelson, P. (1954), “The Pure Theory of Public Expenditure”, *Review of Economics and Statistics*, 36, 387-389.
- Sidgwick, H. (1901), *The Principles of Political Economy*, 3rd ed. London: Macmillan.
- Skouras, T. and Kitromilides, Y. (2014), “The irresistible charm of the micro-foundations dogma or the overwhelming force of the discipline's hard core?”, *European Journal of Economic Policies: Intervention*, 11(1), 67-79.
- Tobin, J. (1986), “The Future of Keynesian Economics”, *Eastern Economic Journal*, 12(4), 347-356.