Economic, social and political fragmentation: linking knowledge-biased growth, identity, populism and protectionism

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Economic, Social and Political Fragmentation: Linking Knowledge-Biased Growth, Identity, Populism and Protectionism[*]

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Abstract

This paper examines how economic fragmentation (widening inequality of skills, income and education) gives rise to social fragmentation (via incompatible social identities), generating political fragmentation (via incompatible economic policies). We consider three value-driven identities: individualism, focused on status concerns, communitarianism, focused on social affiliations, and multi-affiliatedness, encompassing both objectives. Under endogenous identity formation high-skill people are drawn to individualism, the lower-skilled to communitarianism, and those of intermediate skill to multi-affiliatedness. Skill- and education-biased growth leads to increasing social polarisation, expanding the individualistic and communitarian groups at the expense of multi-affiliates. This expands the political constituency for closed policies (such as protectionism, immigration controls and nationalism), even when these policies reduce everyone's living standards. Our analysis thereby helps explain the economic and social underpinnings of populism.

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1 Introduction

This paper examines how education- and skill-biased growth gives rise to social disparities and how the latter, in turn, generate political disparities. Education and skill-biased growth – henceforth denoted as knowledge-biased growth – is generated in well-known ways through globalisation and technological change.[1] Inequalities of education and skills are the classic symptoms of economic fragmentation. The social disparities that concern us are differences in social identities regarding the relative importance attached to individualism versus communitarianism. We explore how knowledge-biased growth leads to a polarisation of identities, with extreme positions becoming more popular relative to intermediate ones (supporting both individualistic and communitarian goals).

The political disparities on which we focus are differences in policy preferences with regard to "open" versus "closed" policies. Open economic policies promote competitive markets and trade; and open social policies reflect cosmopolitanism and openness to immigration. By contrast, closed economic policies promote trade protectionism and immigration controls; and closed social policies promote populism, nationalism, religious intolerance or ethnocentricity. Closed policies are characterised as ones that benefit a particular community, whereas "open" policies are ones that promote economic benefits extending beyond group boundaries.[2] In what follows, we will characterise the closed policies as "protectionist populism". We analyse how knowledge-biased growth and the resulting social polarisation lead to a polarisation of open-versus-closed policy preferences. We show that this political polarisation becomes associated with rising support for protectionist populism, even when this makes everyone economically worse off.

In particular, we argue that when the closed policies make everyone worse off in terms of their material living standards, these policies may nevertheless become increasingly popular among voters in response to knowledge-biased growth. The reason is that this growth widens economic disparities and thereby increases the status and security concerns of people with relatively low education and skill. The economically closed policies (such as protectionism) reduce the status differences (by reducing the economic disparities) and the socially closed policies enhance the value ascribed to communitarian identity. On this account, people with relatively low education and skill are drawn to closed policies. Since these people tend to be swing voters – as those at the bottom end of the spectrum tend to be faithful communitarians and those at the top end tend to be faithful material individualists – knowledge-biased growth may give rise to economically and socially closed policies.

Over the past two to three decades, numerous advanced industrialised economies – with Great Britain and the United States as salient examples – have experienced growing economic fragmentation,[3] social fragmentation[4] and political fragmentation,[5] in terms of the characteristics above. This paper provides an account of how these three forms of fragmentation may be related to one another. The underlying idea is simple, but cannot be captured through standard neoclassical analysis of economic decision making.

For analytic simplicity, we consider only three identities: (i) individualists, who derive value from individual consumption as well as individual status, (ii) communitarians, who derive value primarily from their social affiliations (as well as from consumption) and (iii) "multi-affiliates", who derive value from both individualism and communitarianism. These identities may also be interpreted in terms of an ideological liberal-conservative divide, with liberals adopting individualistic values, conservatives embracing communitarian ones, and multi-affiliates representing a middle ground.

Our analysis shows how people who are privileged in terms of education and skills tend to adopt individualistic identities, the less privileged are drawn to communitarianism, and those in the intermediate range of the skill spectrum become "multi-affiliated". Our analysis examines how knowledge-biased growth – to be denoted as "knowledge-biased growth" below - affects people's identities, leading to an expansion of the individualistic and communitarian groups, at the expense of the multi-affiliates. In short, there is a "hollowing out" of the social middle ground and a rise of extreme positions in the individualistic and communitarian directions.

We then examine how these social disparities generate political divisions, with more privileged people

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[1] See for example Goldin and Katz (2008). Our analysis not depend on the origins of this biased growth, e.g. whether it arises from trade or technological advance. All that matters is that the incomes of more skilled people rise relative to the less skilled. For evidence of disparities in income and job security arising from globalisation, see for example Autor et al. (2014), Pierce and Schott (2016) and Acemoglu et al. (2016). For evidence on inequality arising from technological advance, see for example Autor (2014), Acemoglu and Autor (2011), and Harrisson et al. (2011).

[2] Insofar as different social groups specialise the the production of different goods and services, open policies promote the exploitation of gains from trade across group boundaries.

[3] See OECD (2019).

[4] See e.g. McPherson et al. (2006).

[5] See Inglehart and Norris (2016).

preferring open policies, while less privileged people prefer closed policies. We explore the conditions under which knowledge-biased growth leads to rising support for income-destroying closed policies.

Since people generally value both economic prosperity and social embeddedness, policy makers in democratic states have an incentive to offer both socially closed and economically open policies whenever these do not conflict with one another. However interesting policy problems arise when there is a tradeoff between open and closed policies, i.e. the benefits of community can be promoted only at the expense of economic prosperity or vice versa.

Good examples of such a tradeoff can be found in the protectionist-nationalist policy packages that are commonly propounded by nationalist populist politicians who appeal to the "ordinary people" by emphasising national pride and opposing the cosmopolitan, status-seeking, power-hungry "elites". Both trade protectionism and immigration controls illustrate the tradeoff between social and economic goals, since they are commonly viewed as symbols of national allegiance, worthwhile even if they reduce the living standards of citizens.

Conversely, the individualistic materialists favour open policies such as low tariffs and free movement of labour across national boundaries, because the resulting rise in living standards is deemed worthwhile even if accompanied by a weakened sense of community. Similar policy tradeoffs can also arise with regard to debates about automation, though nationalist populists often avoid these debates. Some policy makers welcome automation on account of the gains in production efficiency, whereas others decry it on account of the accompanying loss of community ties. To highlight these important policy issues, this paper will focus on open and closed policies that feature such a tradeoff: Open policies in our analysis favour economic gains at the expense of social ones, while closed policies do the opposite.[6]

For simplicity, we represent knowledge-biased growth as increasing the productivity of those at the upper end of the knowledge spectrum, while leaving unchanged the productivity of the rest. This has adverse social consequences for the under-privileged multi-affiliates (with relatively low education and skills, and thus relatively low productivity), since their social status falls relative to their privileged counterparts. Under these circumstances, these under-privileged multi-affiliates may favour policies that are closed economically (such as protectionism and immigration controls) and socially because (1) the economically closed policies reduce the fall in status by compressing the income distribution and (2) the socially closed policies raise the social return from community affiliation. These benefits may outweigh the loss from lower living standards due to the fall in productivity across the board from the economically closed policies. The communitarians may also favour closed policies, provided that they gain more from enhanced social affiliation (due to the socially closed policies) than they lose from lower living standards (due to the economically closed policies).[7]

Note that the popularity of closed policies derives from a combination of the status-dampening effect of the economically closed policies and the identity-enhancing effect of the socially closed policies. The loss of income resulting from economically closed policies such as protectionism and immigration controls is to be considered merely a costly by-product of their status-dampening and identity-enhancing effects. By contrast, redistributive policies are status-dampening but, in the absence of salient class divisions, not particularly identity-enhancing. On this account, the closed policies advocated in current identity politics may be more effective in attracting votes than traditional redistributive policies.

The results of our analysis are summarised in three propositions. Proposition 1 shows that low, medium and high portions of the knowledge spectrum adopt communitarian, multi-affiliated and individualistic identities, respectively. Proposition 2 indicates that, in response to knowledge-biased growth, the size of the communitarian and individualistic groups increase at the expense of the multi-affiliate group. Finally, Proposition 3 shows that knowledge-biased growth increases the size of the voting coalition in favour of closed policies.

Our analysis suggests that under-privileged people need not be irrational to support a policy that reduces their income. The reason why such support appears irrational to many observers (e.g. Caplan, 2007) is that they are focused entirely on income as determinant of wellbeing, whereas the less skilled may also be sensitive to status concerns and social affiliation.

To make this argument, our analysis needs to be extended beyond the purview of standard neoclassical analysis, in which individuals derive utility from their own consumption, but not from social concerns. Our analysis incorporates two types of social goals: (i) status concerns for those with an individualistic

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[6]In practice, of course, specific policies vary in the degree to which they promote economic prosperity versus social affiliation. The impact of these policies in these two domains may also vary from person to person. For some people, protectionist policies are primarily a means of promoting nationalism; for others they are a means of reducing income disparities.

[7]Communitarians in our analysis are sensitive to community but not status, which implies that they have no desire to compress incomes.

or multi-affiliated identity and (ii) community concerns for those with a communitarian or multi-affiliate identity. We furthermore must not take individuals' preferences as exogenously given. Rather, their preferences arise from the identities that they adopt, since different identities are associated with different decision objectives. Status-seeking objectives are depicted in terms of relative income concerns, while communitarian objectives are represented as public goods arising from social affiliations. People's identities are represented in terms of the importance they attach to status versus communitarian objectives. Following R. Akerlof (2017) and G. A. Akerlof and Kranton (2000), we assume that people gravitate towards those identities which most promote their wellbeing.[8] We show that high-skilled individuals adopt an individualistic identity, lower-skilled take a communitarian identity, and those of intermediate skills adopt a multi-affiliated identity. Our analysis implies that, by focusing on the self-interested gains from consumption, neoclassical theory overlooks the attractiveness of status to the winners of knowledge-biased growth and the attractiveness of social affiliation (through contributions to a common cause) by the losers, where "winners" and "losers" are classified in terms of their access to consumption goods.

The paper is organised as follows. Section 2 discusses underlying ideas. Section 3 models the economic activities of the individualists and communitarians and describes the principles of identity adoption between these groups. Section 4 investigates the influence of knowledge-biased growth on identity adoption, corresponding to a choice of moral values. Section 5 explores the implications for government policy, showing how knowledge-biased growth may give rise to a moral divide that generates protectionism (closed policies). Section 6 concludes.

2   Underlying Ideas

Our analysis connects a number of disparate phenomena, spanning within-country inequality,[9] social identities,[10] political polarisation,[11] and the rise of populism.[12] Our analysis also connects a number of different themes concerning the rise of social fragmentation in recent years, as evidenced by the support for Donald Trump's Presidency, Brexit, and populist parties in various continental European countries and elsewhere. Our analysis is motivated by these prominent examples from the U.K. and United States, but can be applied to a wide range of populist movements in many other countries, including Bolivia, Brazil, Bulgaria, Czech Republic, France, Greece, Hungary, India, Indonesia, Israel, Italy, Nicaragua, Phillipines, Poland, Russia, Serbia, Sri Lanka, Turkey, and Venezuela, among others.

There is a wide-ranging debate concerning the determinants of this process. Is it driven by economic, cultural, ideological or moral forces? In the economic domain, it has been argued that the divide between conservatives and liberals (related to called the "parochial-cosmopolitan divide") has arisen from a widening income divide between the winners and losers from globalisation and automation.[13] With regard to populism, this is known as the "economic distress hypothesis". Algan et al. (2017) and De Vries (2018) argue that the support for populism and the significance of the parochial-cosmopolitan divide is primarily a reflection of economic insecurity. In the cultural domain, Inglehart and Norris (2016) have argued that the main driver of the rising support for populism is "cultural backlash" of previously dominant segments of the population to progressive cultural change. This backlash can be understood as a clash of moral values. In the ideological domain, Wilkinson (2019) and others have argued that rising urbanisation has segregated societies into ethnically diverse, cosmopolitan, liberal groups and sparse, more uniform, conservative groups. The improving fortunes of the urban populations relative to the rural ones makes the latter sympathetic to populist scapegoating of ethnic minorities and immigrants.

Our analysis highlights major interactions among these drivers of social fragmentation.[14] We suggest that a prominent question underlying the public debate in many Western countries – Are the current social divides due to economics, culture, values or ideology? – may focus on the wrong issue, because the drivers of economic, political and social fragmentation may well lie in the interaction among these realms. Our analysis identifies prominent channels of interaction. It thereby generates testable hypotheses by

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[8]The adoption of identities could be unconscious; it need not be the result of deliberate choice.

[9]See, for example, Atkinson et al. (2011)

[10]See, for example, Mutz (2018) and Norris and Inglehart (2019).

[11]See, for example, Klein (2020).

[12]See, for example, Funke et al. (2020), Polk et al. (2017), and Lewis et al. (2019).

[13]See, for example, Autor et al. (2017), Becker et al. (2017), Dal Bó et al. (2018), Colantone and Stanig (2018a,b), Guiso et al. (2017), and Lechler (2019). Pissarides et al. (2019) show Brexit vote to be associated with high vulnerability to automation. Gidron and Hale (2017) brings together economic and cultural explanations for populism, focusing on feelings of social marginalisation.

[14]The interaction of ideas and interests is explored in Rodrik (2014).

connecting the inequality of skills, income and education with identity formation,[15] moral values,[16] and political economy.[17] We thereby explore a reflexive relation between economic, social, ideological and political divides. The analysis rests on a number of building blocks, to which we now turn.

2.1 Individualism versus Communitarianism

The relation between moral systems and social structure has been studied by anthropologists and cultural psychologists, who emphasise the distinction between individualism and collectivism (concerning the independence and interdependence of individuals, respectively).[18] This distinction is closely related to Tönnies's contrast between "Gesellschaft" (civil society) and "Gemeinschaft" (community). In the former, people are free to make their own choices as long as they don't harm or cheat one another; in the latter, people's actions – in the context of small communities connected through long-standing propinquity and cultural affinity – are monitored, judged and regulated by others.

Kesebir and Haidt (2010) have shown empirically that individualistic social settings (such as those in large Western cities) draw predominantly on the moral concerns of care and fairness, while collectivistic settings (such as those in small, traditional villages) draw on a wider range of moral sources, including loyalty, respect for authority and sanctity. In this sense, the liberals with individualistic identities draw on narrower moral foundations than the conservatives with communitarian identities. We will show how knowledge-biased growth induces the individualists to withdraw some of their support from social communities in order to focus more on materialistic status seeking. In this sense, knowledge-biased growth can lead to a narrowing of a society's moral foundations (as described further in Section 4) which has a feedback effect on economic policy (see Section 5).

2.2 The Liberal-Conservative Divide

The divide between individualism and communitarianism is also manifested in an identity-based liberal-conservative divide that has manifested itself in many of advanced and emerging economies in recent years: Democrats versus Republicans in the United States, Remainers versus Leavers in the Brexit referendum, the cosmopolitan elites versus the populist nationalists, and the secular materialists versus the religious traditionalists. Our conceptions of liberalism and conservatism in this context are tied to the distinction between individualism and communitarianism. "Liberals" advocate universalist ideologies in support of individual economic and political freedoms (human rights, civil liberties, protection of minorities, checks and balances), the free movement of goods and services, labour, capital and ideas across national borders), and market-based economic activity shaped by equity- and efficiency-promoting policies to deal with market failures, typically conducted by technocratic experts. By contrast, "conservatives" advocate ideologies in support of traditional communitarian social structures, including the political interests of a nation (e.g. "America first") or a religion (e.g. Islamism). Among the conservatives, populists do so in the name of "the people" (citizens of the nation or members of a religious community) as opposed to "the elite".

This identity-based liberal-conservative divide must be distinguished from a redistribution-based divide, in which conservatives are relatively insensitive to economic inequalities whereas liberals are sensitive to these inequalities and seek to reduce them.[19] The redistribution-based divide represents the traditional right- versus left-wing political dichotomy that explained important 20th-century class divisions. It is frequently observed that over the past few decades, political alignments – particularly in advanced industrial economies – are explained less by the traditional "right-left" division and more by the "open-closed" division in social and political attitudes. The open-closed division has played a particularly prominent role in recent politics (such as in the Brexit vote and the election of Donald Trump) and economic policy

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[15] Our analysis rests on the fundamental insights in identity economics of G. Akerlof and R. Kranton (2000; 2010) and elsewhere. We follow R. Akerlof (2017) in modelling identity determination as a utility maximisation problem over values given fixed abilities of heterogeneous agents.

[16] For example, Haidt (2012).

[17] For example, Stiglitz (2012) and Inglehart and Norris (2016).

[18] For example, Shweder and Bourne (1984), Markus and Kitayama (1991) and Triandis (1995).

[19] In our analysis, focusing on the identity-based liberal-conservative divide, conservatives are relatively insensitive to economic inequalities – as are the conservatives in the redistribution-based divide. The reasons for the insensitivity are different in the two cases. In the identity-based divide, conservatives are inequality-insensitive because they focus on communitarian goals rather than individualistic economic goals. In the redistribution-based divide, by contrast, conservatives are inequality-insensitive because reward in response to economic performance is more important to them than reward in response to economic need.

(such as trade protectionism and migration restrictions). It cuts across the traditional right- versus left-wing political parties. Our analysis examines the economic causes and consequences of this identity-based liberal-conservative divide.

We thereby provide an explanation for why less-skilled and educated voters often support closed policies (such as restrictions on immigration,[20] trade,[21] and authoritarianism[22] more generally), even though these policies make them materially worse off.[23] While liberal politicians tend to focus on people's individualistic needs, conservative politicians are more sensitive to people's need for communal affiliations. An analysis of the liberal-conservative divide requires the recognition that people are not just maximisers of their individual utilities, but are also social creatures pursuing social relationships within social groups. From the individualistic perspective, it is puzzling why less skilled or educated voters should support closed policies. But once identity formation is brought into the picture, their voting behaviour may be understood as an expression of their sense of community and their aversion to low status, relative to their income. In fact, their vote for closed policies is undertaken as an expression of their tribalism.[24] There is little if any evidence to suggest there are *economic* reasons why Northern England would favour Brexit,[25] or why Appalachia would benefit from a U.S. trade war with China. Our theory provides a parsimonious link between the relative economic deprivation of such sub-national groups and their support for closed policies such as protectionism and immigration controls.

Sociality within communities has been an integral part of human psychology and behaviour, though ignored in the individualistic decision making of conventional microeconomic theory. Throughout the evolutionary process, human beings have struggled with the "Me-Us problem", balancing the interests of the individual against those of his or her social group (see Joshua Green's *Moral Tribes*, 2013). The success of the human species is due in large part to our ability to cooperate with one another beyond the bounds of kinship, in part through the creation of moral intuitions and precepts that honour the demands of "Us" along with moral narratives that widen the domain of "Us" beyond our tribe to encompass nations, empires and civilisations. Accordingly, this paper presents an economic model that is appropriately extended beyond the individualistic decision making to include affiliative relations within social groups.

In this context, the liberal argument for compensating the losers from globalisation and technological change – namely that the tax-transfer system should ensure that the losers are compensated for their economic losses – may not hold. The reason is that the losers may well need to be compensated for more than that, namely, also for their social losses. Our analysis suggests that under the influence of the knowledge-biased growth generated by globalisation and technological advance, the relatively unskilled, under-educated individuals are "left behind" in in two senses: They lose positional status and they experience the unravelling of their communities. Our analysis indicates that these disadvantaged people are drawn to conservative politicians who promise the restoration of their status and communities, while becoming disaffected from liberal politicians who remain focused on their purchasing power alone.

Many commentators have noted that the winners from globalisation and digital and other innovation tend to favour cosmopolitan social and political goals, such as international status comparisons and free international trade. This is scarcely surprising, since the process of globalisation and innovation relies heavily on the free movement of labour, capital and ideas (see Baldwin, 2016). The losers from the globalisation process, by contrast, attach relatively more weight to communal goals, which are more inward-looking than the cosmopolitan goals of the winners. When the inward-looking, disadvantaged group gains the political upper hand, governments may embrace pursue closed policies such as protectionism or immigration controls, even if this reduces this group's living standards.

2.3 Populism

Populism[26] is an ideology or socio-political movement that claims to support the interests of "the people", to make their voice heard in the political process and to replace the dominant, privileged corrupt and self-serving "elites". The interests of the people, defined in terms of identity politics, are understood as

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[20] See Citrin et al. (1997), Mayda (2006), Hainmueller and Hiscox (2007), d'Hombres and Nunziata (2016), Cavaille and Marshall (2019).

[21] See Hainmueller and Hiscox (2006), Medrano and Braun (2011), Mansfield and Mutz (2015).

[22] E.g. Napier and Jost (2008).

[23] For Great Britain, see also Goodwin and Heath (2016).

[24] When voting is an expression of identity, people may have an incentive to vote even though none of them considers his or her vote as decisive for the outcome. (See, for example, Brennan and Hamlin, 1998 and Hillman, 2011).

[25] Though support for Brexit was significantly associated with local economic grievances (Arnorsson and Zoega, 2018). See Fetzer (2019) on the link between austerity and the Brexit vote.

[26] See, for example, Eatwell and Goodwin (2018) and Müller (2016).

homogeneous and morally superior to those of the elite.[27] The presumed homogeneity of the people's interests makes populism indifferent to – and often opposed to – pluralism, protection of minority rights, and systems of checks and balances in government. The emphasis on identity leads to support for conformity and loyalty to the tribe. It also leads to emphasis on security against threats from outsiders.

Nationalist populism links the interest of ordinary people to national identity, rooted in a common history and destiny.[28] National populists tend to give particular attention to cultural, national and social interests – interests that the elites are claimed to have neglected. This neglect is to be overcome by returning political power to ordinary people. Since political legitimacy is assumed to flow from the popular voice of a homogeneous people, populists have less need for decision-making by elected representatives in democratic processes and may support authoritarian styles of governance.[29]

Our analysis focuses on three important aspects of populism: (1) a subjective loss of status, esteem and dignity by ordinary people relative to the elites, (2) a divergence of values and identities between ordinary people and the elites and (3) a distrust of elite policy making and a desire to reorient policy making around the values of ordinary people. In the West, the elites are often portrayed as cosmopolitan, liberal democrats who are focused primarily on materialistic objectives. This direction brings them into conflict with ordinary people on a variety of policy issues, including immigration controls and protectionism.

Our analysis also sheds light on the distinction between European-US and Latin American populism, the former associated with identity politics and the latter with redistributional issues.[30]

2.4 Moral Values

Individualistic and communitarian objectives are consistent with those identified by various social and moral psychologists and anthropologists. In particular, Shweder and co-authors have proposed that different cultures provide two distinct answers to the question of how the needs of individuals and groups are to be weighted: the "sociocentric" approach subordinates the needs of individuals to those of their social groups, whereas the "egocentric" approach gives priority to the needs of individuals (e.g. Shweder and Borne, 1984). The sociocentric approach was dominant in most ancient cultures and the individualistic approach was central in the Enlightenment. In Shweder's analysis, the sociocentric approach follows the values of community and divinity, while the egocentric approach adheres to the value of autonomy. In Schwartz's investigation of moral universals (e.g. Schwartz, 1994), individualistic values cover those favouring universalism (appreciation, tolerance and wish to protect all people), independent thought and action, openness to novelty and change, status and control, achievement, and gratification of the senses; whereas sociality-based values cover acceptance and commitment to traditions, conformity and self-control in line with social expectations, and desire for harmonious, stable and safe social relationships . In Haidt's moral foundation theory (e.g. Haidt, 2012), the individualistic values involve care and fairness, and the sociality-based values involve loyalty, authority and sanctity.

Several important scholars have noted that the rise of cosmopolitan economic liberalism has led to a narrowing of our moral foundations. This development has received much attention recently in response to prominent analyses of the commercialisation of daily life by Sandel (2012), Satz (2010), and R. & E. Skidelsky (2012). There is a large literature on decline of sociality in favour of individualistic status pursuits in recent decades (e.g. Putnam, 2000; McPherson et al., 2006; Rahn and Transue, 1998). Various authors have investigated how the rise of individualism is related to a widespread decline in trust, a rise in narcissism and a fall in the sense of connectedness to others (e.g. Bosson et al., 2008; Putnam, 2000; Twenge, 2006; Twenge and Campbell, 2010). The rise of positional competition has been associated with rising affluence (e.g. Hirsch, 1976; Frank, 1999).

The narrowing of moral foundations in the West has recently been investigated by Collier (2018), who argues that neoclassical economic analysis has contributed to this narrowing in business, government and civil society. In this analysis, individualistic and materialistic values are reduced to a Benthamite core, in which each individual's self-interest is reduced to the maximisation of individual utility from consumption and social welfare is the sum of all individual utilities in a society. As an individual's marginal utility is assumed to decline with consumption, the maximisation of social welfare involves distributing consumption "fairly", in the sense of equalising consumption across individuals. Sociality-based values are ignored in this analysis.

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[27]See Mudde (2004, 2007). The connection with identity politics is elaborated in Müller (2016).

[28]Along the same lines, religious and ethnic populisms identify the aims of ordinary people around religion and ethnicity.

[29]See Eichengreen (2018) and Norris and Inglehart (2019).

[30]See Guriev and Papaioannou (2020), Pittaluga and Seghezza (2018), and Rodrik (2018). Our analysis provides a framework for considering this issue through the inclusion of the relative benefits of material prosperity, status and identity. Gennaioli and Tabellini (2018) examine these relative benefits.

In this context, the moral concern of "care" has shrivelled to providing needy citizens with consumption and the concern of "justice" has shrunk to distributional fairness, interpreted as equalising consumption across citizens. The socially desirable equalisation of consumption through taxes and transfers is viewed as constrained by efficiency considerations. The "equity-efficiency tradeoff" describe the degree to which the size of the national pie shrank when the pie is redistributed. From the perspective of orthodox neoclassical economics, society consists of households, firms and the government. Households and firms are assumed to be utterly amoral, maximising their own utility and profits, respectively. The only moral actor left is the government, whose moral choices are reduced to choosing a point on the economy's equity-efficiency tradeoff. As economic modelling came to dominate the state's economic decisions, management of the economy became increasingly technocratic, as government bureaucrats became the main implementers of economic policies, balancing equity and efficiency objectives focused on consumption opportunities.

The narrowing of moral foundations – associated particularly with the rise of cosmopolitan economic liberalism – has received little attention in economic analysis. This paper presents a simple model of this moral narrowing, arising from the interaction between knowledge-biased growth and identity formation and, in this context, we investigate what the resulting evolution of identities implies for the public choice of economic policies.

3 Identity Formation

Our model distinguishes among three identities: an individualistic identity (I), a communitarian identity (C), and a multi-affiliated identity (M). We thereby aim to capture Haidt's empirical observation that people can be sensitive to a broader range of values than individualism, to varying degrees.

The individualistic identity is based on egocentric values, linked to individualistic and positional objectives (individualistic consumption of marketable commodities, as well as positional competition in terms of these commodities). These values are centred on personal autonomy (including the values of personal agency, personal achievement and status) alongside respect for the intrinsic worth of all other other individuals.

The communitarian identity is driven by the sociocentric values of affiliation, including values of loyalty to one's social group, respect for authority, as well as sensitivity to issues of sanctity and purity (around which social groups often cohere). These values induce individuals to contribute to a common cause, whose benefits are shared by all members adhering to communitarian values. These benefits may include economic goods (such as public education and health services) and cultural goods (such as support for national, ethnic or religious traditions).[31] These goods are club goods, since they are excludable (i.e. their benefits are not available to those who do not choose communitarian values) and non-rival (i.e. since one individual's consumption does not interfere with another's consumption of the goods).

The multi-affiliated identity adopts both sociocentric and egocentric values and utility is derived from both individualistic and communitarian pursuits. In this context, when people switch from a multi-affiliated identity to an individualistic or communitarian one, a moral narrowing occurs.

Let U_i^I represent the utility from an individualistic identity (pursuing egocentric values), U_i^C represent the utility from a communitarian identity (pursuing sociocentric values), and U_i^M represent the utility from a "multi-affiliated identity" (pursuing both sociocentric and egocentric values). Each individual i adopts the utility-maximising identity:

$$U_i = \max \left\{ U_i^I, U_i^C, U_i^M \right\}.$$

We now proceed to specify each of these utilities.[32]

3.1 Individualistic Identity

A person with an individualistic identity can derive utility from self-interested and status-oriented pursuits, both of which are expressions of egocentric values. The utility from an individualistic identity is

$$U_i^I \equiv U_i^s + x_i, \tag{1}$$

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[31] This distinction is analogous to that between individualistic and prosocial value orientations (e.g. van Lange, 1997).

[32] This model is superficially similar to that used in Snower and Bosworth (2016), though the purposes of the two models are obviously different.

where x_i represents individual i's self-interested consumption of private goods (excludable and rival), U_i^s is the individual's utility from status-seeking activities (described below). The relative weight of self-interested and status-seeking pursuits in the utility function may be adjusted through the parameters of the status-seeking utility function (i.e. through π and ε, below).[33]

Each individual i produces x_i market goods, whose production function is $x_i = \beta_j (1 + a_i)$, where a_i is the individual's ability (higher a_i stands for higher ability, arising from skill, education, or nurture) and $\beta_j \in \{\beta_u, \beta_s\} > 0$ is a "productivity parameter" that we will use to capture the return to market activities. β_j may change in response to globalisation, automation, public policy, or other structural economic shifts. When $\beta_u \neq \beta_s$ the returns to market activities differ for people of different socioeconomic status. Then knowledge-biased growth can be represented by a rise in β_s while β_u remains constant, where $\beta_u \leq \beta_s$. Ability is uniformly distributed over the range $[0, 1]$. We assume that in the lower segment of the ability distribution ($a_i \in [0, a_s]$), the productivity parameter is $\beta_j = \beta_u$ (where subscript u stands for "unskilled", whereas for the upper segment of the ability distribution ($a_i \in (a_s, 1]$) the productivity parameter is $\beta_j = \beta_s$.

Each person i competes with a random member of society. The resulting utility from positional competition with another person j is

$$U_{i,j}^s \equiv \pi \max(x_i - x_j, 0) - \varepsilon \max(x_j - x_i, 0), \tag{2}$$

where $\pi > 0$ is a *pride parameter* and $\varepsilon > \pi$ is an *envy parameter*. Boyce et al. (2010) suggest that $\varepsilon > \pi$, which we will assume. The individual's expected utility from competing with a random outsider[34] is

$$a_i U_i^{\underline{s}} + (1 - a_i) U_i^{\overline{s}} \tag{3}$$

where here a_i represents the probability of encountering an inferior-ability outsider and $U_i^{\underline{s}}$ is i's pride-driven utility from this encounter, whereas $(1 - a_i)$ is the probability of encountering a superior-ability outsider and $U_i^{\overline{s}}$ is i's envy-driven utility from that encounter. Denote by

$$U_i^s \equiv E\left(U_{i,j}^s\right) = a_i U_i^{\underline{s}} + (1 - a_i) U_i^{\overline{s}} \tag{4}$$

i's overall expected utility from status seeking. Taking the expectation of $U_{i,j}^s$ over the appropriate intervals yields

$$U_i^s = a_i \pi \int_0^{a_i} (x_i - x_j)\, da_j - (1 - a_i)\varepsilon \int_{a_i}^1 (x_j - x_i)\, da_j \tag{5}$$

$$= \begin{cases} \frac{1}{2}\left(a_s(2 + a_s)(\beta_s - \beta_u)\varepsilon - (3\beta_s - 2(1 + a_i)\beta_u)\varepsilon - a_i^2 \beta_u(\varepsilon - \pi)\right) & a_i \leq a_s \\ \frac{1}{2}\left(\beta_s\left(a_i^2 \pi - (1 - a_i)^2 \varepsilon\right) + a_s(2 + a_s)(\beta_s - \beta_u)\pi\right) & a_i > a_s \end{cases}.$$

This equation shows how utility from positional competition depends on an individual's ability level.

3.2 Communitarian Identity

We assume that a person with a communitarian identity derives utility from communitarian pursuits that express sociocentric values, as well as self-interested pursuits, since everyone is instinctually inclined to satisfy self-interest to some degree. The utility from a communitarian identity, pursuing sociocentric values, is

$$U_i^C \equiv U_i^q + x_i \tag{6}$$

where U_i^q represents the benefit from communitarian activities, which yield non-rival benefits to the participants. The relative weights of the communitarian and self-interested pursuits in the communitarian utility function can be adjusted through the parameter of communitarian benefits (i.e. the parameter α below).

Since the benefits are available only to individuals pursuing sociocentric values and since one individual's enjoyment of these benefits does not go at the expense of another individual's enjoyment, the outputs of the communitarian activities are club goods.

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[33]Specifically, the relative magnitudes of π and ε represent the relative strengths of the pride and envy effects, respectively; the absolute magnitudes of both π and ε reflect the weighting of status-seeking versus self-interested pursuits in the utility function.

[34]Status seeking is often personalised, focused on individuals who have one's attention at a particular time. We adopt however the simplification that attention is proportionally distributed across society in order to derive qualitative results as parsimoniously as possible.

Our model is not tied to any specific theory concerning the origin of the sociocentric values. On the one hand, they may be interpreted as instrumental values derived from the services of the club goods. On the other, they may arise from the expression of a communitarian identity, along the lines of expressive voting behaviour (Brennan and Hamlin, 1998 & Hillman, 2010).[35]

Since the benefits from these goods are shared by all individuals pursuing sociocentric values, we specify the utility derived from these club goods simply as

$$U_i^q = \alpha, \tag{7}$$

where α is a constant.[36]

3.3 Multi-affiliated Identity

The utility from a multi-affiliated identity, pursuing both egocentric and sociocentric values, is[37]

$$U_i^M \equiv \frac{\phi}{\sigma^C} U_i^q + \frac{1-\phi}{\sigma^I} U_i^s + x_i \tag{8}$$

where ϕ is the "salience parameter" $(0 < \phi < 1)$, measuring the degree to which the communitarian utility is salient for someone with a multi-affiliated identity, and σ^C and σ^I are the weights of the communitarian and individualistic goals for the multi-affiliated identity, respectively.

In order to avoid trivial results, we assume that $\sigma^I, \sigma^C < 1$ with $\sigma^C > \phi$ and $\sigma^I > 1-\phi$. The parameter σ captures the degree of imperfect substitutability between communitarian activities and status-seeking activities.

3.4 Identity determination

Expressing the three utility functions in terms of ability, we find

$$U_i^I = \begin{cases} \frac{1}{2}\left(a_s(2+a_s)(\beta_s-\beta_u)\varepsilon - (3\beta_s - 2(1+a_i)\beta_u)\varepsilon - a_i^2\beta_u(\varepsilon-\pi)\right) + x_i & a_i \leq a_s \\ \frac{1}{2}\left(\beta_s\left(a_i^2\pi - (1-a_i)^2\varepsilon\right) + a_s(2+a_s)(\beta_s-\beta_u)\pi\right) + x_i & a_i > a_s \end{cases}$$

$$U_i^M = \begin{cases} \frac{1-\phi}{2\sigma^I}\left(a_s(2+a_s)(\beta_s-\beta_u)\varepsilon - (3\beta_s - 2(1+a_i)\beta_u)\varepsilon - a_i^2\beta_u(\varepsilon-\pi)\right) + \frac{\phi\alpha}{\sigma^C} + x_i & a_i \leq a_s \\ \frac{1-\phi}{2\sigma^I}\left(\beta_s\left(a_i^2\pi - (1-a_i)^2\varepsilon\right) + a_s(2+a_s)(\beta_s-\beta_u)\pi\right) + \frac{\phi\alpha}{\sigma^C} + x_i & a_i > a_s \end{cases}$$

$$U_i^C = \alpha + x_i.$$

Note that both the individualistic and communitarian utility functions are each a special case of the multi-affiliated identity, with $\sigma = 1$, $\phi = 0$ and $\phi = 1$ respectively. This means that individualists and communitarians gain utility from a narrower range of activities than those who are multi-affiliated, on account of their narrower range of values.

In this context, the following proposition describes the implications of economic fragmentation for social fragmentation.

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[35] In the expressive voting theory, people's voting behaviour may reflect their desire to express their identity, rather than simply following their economic interests. Our analysis can be interpreted in this sense, since it considers identity concerns. What our analysis adds to this interpretation is that it endogenises identity, in line with the principles of identity economics. In this context, whether our model is classified as a rational voter model (with agents rationally choosing their identity) or as an expressive voter model (with agents taking their identities into account, not just their economic interests) is a semantic issue. In contrast to expressive behaviour models, the agents in our analysis vote in accordance with their preferences, rather than falling into the "expressive policy trap" (Hillman, 2010) of voting for something that they would not support if they knew that their votes were decisive. Our analysis can however be incorporated into games concerning this trap and should thus be understood as complementary to expressive voter models, rather than as an alternative to them.

[36] In practice, the benefits that communitarians derive from their club good may rise with the size of the club, either because more support for the community generates a greater sense of pride in the community or because the communitarians resent the "cosmopolitans" who have abandoned their community objectives. For analytical simplicity, these considerations are not included in our analysis. Including them would further strengthen our qualitative conclusions.

[37] The human needs for material prosperity and sociality are not seen by psychologists and neuroscientists substitutable for one another (see Panksepp, 1998). There is a wide literature in the psychology of wellbeing showing that an excess of materialism is detrimental to happiness (Ryan and Dziurawiec, 2001; Kasser, 2002; Roberts and Clement, 2007). These effects may be non-linear however, and some materialism is happiness-promoting (Hudders and Pandelaere, 2012; Pieters, 2013).

Proposition 1: From Economic to Social Fragmentation *For parameter restrictions ensuring that all three identities (individualistic, communitarian and multi-affiliated) are adopted by some people, (i) those of relatively low ability (in terms of education and skills) adopt a communitarian identity, (ii) those of relatively high ability adopt an individualistic identity, and (iii) those in the intermediate range of the ability distribution adopt a multi-affiliated identity.*

Proof *For $a_i = 0$ (the lowest ability level), utility from the communitarian identity exceeds that from the multi-affiliated identity:*

$$U_i^C - U_i^M = \frac{1}{2\sigma^I} \varepsilon (1 - \phi) \left((1 - a_s)(3\beta_s - 2\beta_u) + (1 - a_s) a_s \beta_s + a_s^2 \beta_u \right) + \frac{\alpha (1 - \phi)}{\sigma^C} > 0.$$

Furthermore, for $a_i = 1$ (the highest knowledge level), the individualistic identity is preferred to a multi-affiliated identity:

$$U_i^I - U_i^M = \frac{1}{2\sigma^I} \left(\sigma^I - (1 - \phi) \right) \pi \left(\beta_s + a_s (2 + a_s)(\beta_s - \beta_u) \right) - \frac{\phi \alpha}{\sigma^C} > 0$$

provided that α is not too large. This means that the utility from communitarianism cannot exceed the utility from status for the richest person in society. In order to ensure that all three identities command some share of the population, we assume that the individual with $a_i = a_s$ prefers to adopt the multi-affiliated identity. [38]
  Next, we show that the utility of adopting the individualistic identity over the multi-affiliated identity is continuously increasing in knowledge a_i on the interval $[a_s, 1]$. Differentiating $U_i^I - U_i^M$ with respect to a_i,

$$\frac{d \left(U_i^I - U_i^M \right)}{da_i} = \frac{\beta_s}{\sigma^I} \left(\sigma^I - (1 - \phi) \right) \left((1 - a_i) \varepsilon + a_i \pi \right) > 0.$$

Thus the intermediate value theorem ensures that there is a cutoff knowledge $\widehat{a}^I$, at which the individual is indifferent between the two identities. Above this cutoff value $\widehat{a}^I$, individuals adopt an individualistic identity and below it they accept a multi-affiliated identity.
  Next, we show that the utility of adopting the multi-affiliated identity over the communitarian identity is continuously increasing in knowledge a_i on the interval $[0, a_s]$. Differentiating $U_i^M - U_i^C$ with respect to a_i,

$$\frac{d \left(U_i^M - U_i^C \right)}{da_i} = \frac{\beta_u}{\sigma^I} (1 - \phi) \left((1 - a_i) \varepsilon + a_i \pi \right) > 0.$$

Thus the intermediate value theorem ensures that there is a cutoff knowledge $\widehat{a}^C$, at which the individual is indifferent between the two identities. Above the cutoff value $\widehat{a}^C$, individuals adopt a multi-affiliated identity and below it they take on a communitarian identity.
  The cutoff abilities $\widehat{a}^I$, $\widehat{a}^C$ determine the relative sizes of the individualistic, multi-affiliated and communitarian populations.

4 The Influence of Knowledge-Biased Growth

This section investigates the influence of economic fragmentation (e.g. knowledge-biased productivity improvements arising from technological progress or globalisation) on the size of the three social groups. These are defined by changes in the location of the marginal individuals (with abilities $a_i = \widehat{a}^I$ and $\widehat{a}^M$), who determine the size of the individualistic and communitarian groups respectively. We represent knowledge-biased growth by a rise in β_s, holding β_u constant. In this context, the interesting case is one where the multi-affiliates straddle the divide in returns to ability (i.e. $\widehat{a}^C < a_s < \widehat{a}^I$), since these individuals may experience either benefit from knowledge-biased productivity improvements or be "left behind" by these improvements.
  For analytical simplicity, we focus on a baseline technology that is skill-unbiased: $\beta_s = \beta_u = \beta$.[39] Setting $\widehat{U}^I = \widehat{U}^M$ and solving for $a_i = \widehat{a}^I$, we obtain the size of those who adopt some degree of communitarianism (multi-affiliates included):

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[38] *This entails* $\frac{1}{2\sigma^I} \left(\sigma^I - (1 - \phi) \right) \left(\left((1 - a_s)^2 \varepsilon - a_s^2 \pi \right) \beta_s - (2a_s + a_s^2)(\beta_s - \beta_u) \pi \right) + \frac{\phi \alpha}{\sigma^C} > 0$ *and* $\frac{1}{2\sigma^I} (1 - \phi)$
$\left(a_s^2 \beta_u \pi - \left(2(1 - a_s)(\beta_s - \beta_u) + (1 - a_s^2) \beta_s \right) \varepsilon \right) - \frac{\alpha(\sigma^C - \phi)}{\sigma^C} > 0.$
[39] This assumption is made to ease the analytical exposition. All results follow when the baseline technology is already skill-biased. Please refer to the appendix.
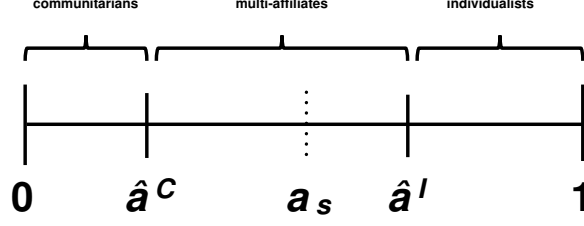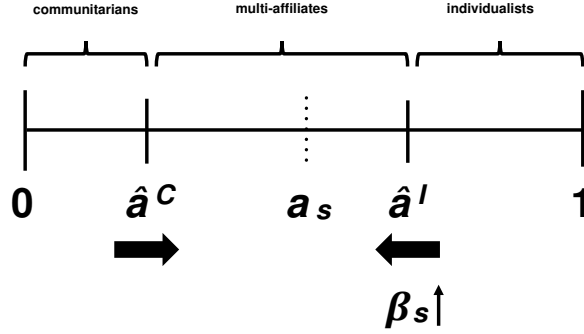
Figure 1: The distribution of values in society.

Figure 2: The effect of an increase in socioeconomic inequality.

$$\widehat{a}^I = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon \pi}{(\varepsilon - \pi)^2} - \frac{2\phi\alpha\sigma^I}{\beta\sigma^C \left(\sigma^I - (1 - \phi)\right)(\varepsilon - \pi)}} \tag{9}$$

and setting $\widehat{U}^M = \widehat{U}^C$ and solving for $a_i = \widehat{a}^C$, we obtain the size of the purely communitarian group:[40]

$$\widehat{a}^C = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon \pi}{(\varepsilon - \pi)^2} - \frac{2\left(\sigma^C - \phi\right)\alpha\sigma^I}{\beta\sigma^C (1 - \phi)(\varepsilon - \pi)}}. \tag{10}$$

The equilibrium distribution of values in society can be seen in Figure 1.

The more numerous is the M group, the more harmonious is the society, since this group embraces both value systems. However knowledge-biased growth reduces the size of the M group.

Proposition 2: The Effect of Knowledge-Biased Growth on Social Fragmentation   *In response to knowledge-biased growth (represented as a rise in β_s, holding β_u constant), the individualistic and communitarian groups both increase at the expense of the multi-affiliated group.*

Proof   *A rise in β_s, holding β_u constant, increases the size of the individualistic group:*

$$\frac{d\widehat{a}^I}{d\beta_s}\bigg|_{\beta_s=\beta_u=\beta} = -\frac{\left(\sigma^I - (1 - \phi)\right)(2 + a_s)\, a_s\beta\pi\sigma^C + 2\phi\alpha\sigma^I}{2\beta\sqrt{\beta\sigma^C \left(\sigma^I - (1 - \phi)\right)\left(\left(\sigma^I - (1 - \phi)\right)\beta\varepsilon\pi\sigma^C - 2\alpha\phi\sigma^I (\varepsilon - \pi)\right)}} < 0 \tag{11}$$

and also increases the size of the communitarian group:

$$\frac{d\widehat{a}^C}{d\beta_s}\bigg|_{\beta_s=\beta_u=\beta} = \frac{(1 - a_s)(3 + a_s)(1 - \phi)\,\sigma^C\varepsilon}{2\sqrt{\beta\sigma^C (1 - \phi)\left(\beta\sigma^C (1 - \phi)\varepsilon\pi - 2\alpha\sigma^I \left(\sigma^C - \phi\right)(\varepsilon - \pi)\right)}} > 0. \tag{12}$$

Figure 2 summarises Proposition 2. In other words, knowledge-biased growth leads more people to adopt the extreme moral and ideological positions and thereby leads to a hollowing out of the tolerant

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[40]It can be shown that our assumptions are sufficient for $\widehat{a}^C < \widehat{a}^I$.

middle ground.[41] The political consequences of this social fragmentation are documented by Han (2016): as income inequality rises, support for radical right-wing parties goes up among the poor but falls among the wealthy in European countries.

Two phenomena are responsible for these results. First, note that the outcomes from the communitarian pursuits are clearly more egalitarian than the outcomes from the individualistic pursuits. This is the reason why knowledge-biased growth induces the relatively high-skilled, multi-affiliated citizens to become individualists: they gain more from an individualistic identity (which enables them to reap the full benefits of relatively high status) than from a multi-affiliated identity (which requires them to relinquish some of the gains from high status in favour of the egalitarian benefits from communitarian pursuits).

Second, note that status-seeking pursuits generate negative consumption externalities (i.e., one person's rise in status comes at the expense of another person's fall in status) whereas communitarian pursuits do not. This the reason why the relatively low-skilled, multi-affiliated citizens are induced to become communitarians: they can avoid their loss of status by switching from a multi-affiliated identity (in which status concerns are taken into account) to a communitarian identity (in which status concerns are ignored).[42]

As a result, society becomes more polarised, in the sense that there are fewer citizens who pursue both communitarian and individualistic pursuits (i.e. fewer multi-affiliates). As citizens stop sharing common objectives, the political process underlying economic policy making becomes more conflictual, as shown below.

5 Policy Implications

We now consider the implications of knowledge-biased growth for "open" versus "closed" policies. For the reasons given in the introduction, we assume that open policies – such as free trade, permissive immigration and low regulation of high-tech companies – promotes productivity and raises inequality in the economic domain, while weakening social affiliations. Conversely, closed policies – such as protectionism and immigration controls (associated with globalisation) and wealth or robot taxes (associated with technological advance), together with displays of populism and nationalism (e.g. parades and folk festivals) – reduce productivity and compresses income differentials, while strengthening the sense of community.[43]

We now show that when knowledge-biased growth widens economic and social inequality, it becomes worthwhile for the underprivileged to favour closed policies, even if these policies make everyone economically worse off. The reason is that people are concerned not only with their economic prosperity, but also with social concerns – in particular, status and community. The social component of the closed policies (e.g. the nationalist component of the nationalist protectionist policies, such as appeals to national virtues and customs) raise the benefits from community affiliation and may thereby get the support of the underprivileged communitarians, who may consider these social benefits sufficiently large to warrant the sacrifice in terms of lower consumption. Meanwhile the economic component of the closed policies (e.g. protectionist component) reduces productivity and income differentials, which may thereby gain the support of the lower-skilled multi-affiliates, who may consider the combined benefits of stronger community and reduced relative deprivation to outweigh their loss of consumption.

Our analysis suggests why right-wing, national populism (such as that of President Trump and Prime Minister Johnson) has proved to be a more powerful political force than traditional left-wing populism (such as that of Bernie Sanders or Jeremy Corbyn). Whereas left-wing populism aims to reduce income differentials through redistributive measures and thereby mitigates the associated status concerns of the low-skilled multi-affiliates, it does little to attract the support of the communitarians.[44] The latter respond more readily to the nationalistic component of national populism.

In our analysis, it is knowledge-biased growth that influences people's adoption of communitarian, individualistic or multi-affiliated identities. In practice, however, there are many other factors that affect people's identity adoption, many of which are linked to knowledge-biased growth. One empirically

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[41]The result of Eq. 11 wherein the elite "pull away" from the rest of the population, socially and economically, is mirrored in the model of Collier (2019). Collier's model does not however predict the effect of increased communitarianism by the left-behind shown in Eq. 12.

[42]This transition may not be immediate. Poutvaara and Steinhardt (2018) show that shifting support to far right parties across European countries is associated with bitterness about voters' economic situation.

[43]These affiliations may be strengthened by buying from domestic producers and relying on domestic labour in response to globalisation. Alternatively, the benefits of wealth taxes or robot taxes could promote community affiliations through redistributions of resources and opportunities.

[44]Indeed Shayo (2009) shows how national identity can reduce support for redistribution.

important factor is education.[45] The evidence suggests that education affects people's preferences in ways that go beyond our analysis. In particular, education affects people's values, since those who have had a tertiary education tend to attach a relatively high value to tolerance for difference and respect for opposing views.[46] In the context of our analysis, this effect may be represented by a drop in the parameter α, interpreted as the value of communitarian values relative to individualistic ones. This effect serves to reinforce the qualitative conclusions of our analysis.

In our model, closed policies are represented as having two components: (i) They reduce all agents' productivity β_j by a factor of $1 - \tau > 0$, where τ represents that magnitude of the productivity-destruction effect:

$$x_i = (1 - \tau)\beta_j(1 + a_i) \qquad \forall i, j. \tag{13}$$

(ii) They raise the utility from communitarian activities:

$$\frac{d\alpha}{d\tau} = \delta.$$

For example, populist nationalism may involve activities such as "saluting the flag", which raises the utility from the populist club good by proportion α.

Under such a closed policy, the boundary of the individualistic group becomes:

$$\widehat{a}^I = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon\pi}{(\varepsilon - \pi)^2} - \frac{2\phi\alpha\sigma^I}{\beta\sigma^C(1 - \tau)(\sigma^I - (1 - \phi))(\varepsilon - \pi)}} \tag{14}$$

while the boundary of the communitarian group becomes

$$\widehat{a}^C = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon\pi}{(\varepsilon - \pi)^2} - \frac{2(\sigma^C - \phi)\alpha\sigma^I}{\beta\sigma^C(1 - \tau)(1 - \phi)(\varepsilon - \pi)}}. \tag{15}$$

Note that both $\widehat{a}^I$ and $\widehat{a}^C$ rise unambiguously with the stringency τ of the closed policies (such as protectionism).

In order to assess who has an interest in voting for the protectionist component of the policy, we examine how the utility of multi-affiliates responds to the policy:

$$\frac{dU_i^M}{d\tau} = \frac{1}{2\sigma^I}(1 - \phi)\left(\beta_s\left(a_i^2(\varepsilon - \pi) + (1 - 2a_i)\varepsilon\right) - a_s(2 + a_s)(\beta_s - \beta_u)\pi\right) + \frac{\delta\phi}{\sigma^C}. \tag{16}$$

For the marginal the marginal supporter of a closed policy, such as the marginal protectionist $\widetilde{a}$ (the person who is indifferent between the presence and absence of the protectionist policy), this derivative is zero:

$$\left.\frac{dU_i^M}{d\tau}\right|_{a_i = \widetilde{a}} = \frac{1}{2\sigma^I}(1 - \phi)\left(\beta_s\left(\widetilde{a}^2(\varepsilon - \pi) + (1 - 2\widetilde{a})\varepsilon\right) - a_s(2 + a_s)(\beta_s - \beta_u)\pi\right) + \frac{\delta\phi}{\sigma^C} = 0. \tag{17}$$

Note that the benefit of the policy to multi-affiliates falls with their ability (i.e. $dU_i^M/d\tau$ falls with a_i):

$$\frac{d^2U_i^M}{d\tau da_i} = -\frac{\beta_s}{\sigma^I}(1 - \phi)\left((1 - a_i)\varepsilon + a_i\pi\right) < 0. \tag{18}$$

This means that all multi-affiliated agents with abilities lower than the marginal protectionist support the protectionist policy.

Setting $dU_i^M/d\tau = 0$ and solving for a_i yields the cutoff ability level below which the multi-affiliates vote for the closed policies and above which they vote against them:

$$\widetilde{a} = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon\pi}{(\varepsilon - \pi)^2} - \frac{2\delta\phi\sigma^I}{\beta\sigma(1 - \phi)(\varepsilon - \pi)}}, \tag{19}$$

The multi-affiliates face the following tradeoff in the effects of the closed versus open policies. First, the closed policies reduce their perceived relative deprivation by $\frac{\tau}{2}\beta\left(a_i^2(\varepsilon - \pi) + (1 - 2a_i)\varepsilon\right)$. Second,

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[45]See, for example, Eatwell and Goodwin (2018, p. 24).
[46]For evidence that socialization through education affects people's , preferences, values and ideologies, see Stubager (2008), Link, Steve and Moore (1995), and Surridge (2016).

these policies increase the return from sociocentric values by $\delta\tau\alpha$. And lastly, they reduce the multi-affiliates' utility from non-positional consumption by τa_i. For the marginal multi-affiliate voter (Eq. 19), the sum of the first two effects are equal to third, as indicated by Eq. 17.

For multi-affiliates with a lower ability level than that of the marginal voter, the first two effects do indeed dominate the third, and thus they support the closed policies. For those of higher ability than the marginal voter, the third effect dominates the first two, and thus they oppose these closed policies.

For the case of combined nationalistic and protectionist policies, the nationalistic component is required to retain the support of the communitarians. In the absence of this nationalistic component, the communitarians would be made economically worse off by the productivity destruction from protectionism, without participating in the advantages deriving from lower relative deprivation (since the communitarians are assumed not to care about status). In particular, the nationalistic component raises the return to sociocentric values by $\delta\tau\alpha$. On the other hand, the protectionist component reduces utility from non-positional consumption by τa_i. In order for the communitarians to support the nationalist-protectionist policy package, the increase in the return to sociocentric values needs to exceed the reduction in non-positional consumption for the highest-ability communitarian (who suffers the greatest loss of utility from the protectionist component of the policy package): $\delta\alpha > \widehat{a}^C$.

The cutoff value $\widetilde{a}$ – comprising both communitarians and lower-ability multi-affiliates – is the size of the group that supports the closed policies.[47]

Next, we investigate how knowledge-biased growth affects the support for closed policies. As income grows for those at the top of the income distribution, holding fixed the low-end multi-affiliate's productivity β_u, relative deprivation among the lower-ability multi-affiliates increases, and thus more multi-affiliates become willing to support the policy. This insight is formalised in the following proposition.

Proposition 3: From Knowledge-biased Growth to Support for Closed Policies *Knowledge-biased growth (i.e., β_s rises while β_u remains unchanged) increases the size of the coalition voting for the closed policy. In particular, starting from an initial knowledge-unbiased distribution of abilities, knowledge-biased growth increases the number of people favouring closed policies. It does so by promoting social fragmentation, i.e. generating polarised values – communitarianism and individualism – at the expense of multi-affiliatedness.*

Proof

$$\frac{d\widetilde{a}}{d\beta_s}\bigg|_{\beta_s=\beta_u=\beta} = \frac{2\delta\phi\sigma^I + a_s\left(2+a_s\right)\left(1-\phi\right)\beta\pi\sigma^C}{2\beta\sqrt{\beta\sigma^C\left(1-\phi\right)\left(\beta\sigma^C\varepsilon\left(1-\phi\right)\pi - 2\delta\phi\sigma^I\left(\varepsilon-\pi\right)\right)}} > 0. \tag{20}$$

As the supporters of closed policies become more numerous, it becomes more likely that a democratically elected government will pursue such policies, even though these policies make everyone economically worse off. These policies are chosen by communitarians and multi-affiliates because their material standard of living is not the only source of their wellbeing. Specifically, they also derive wellbeing from social pursuits and these pursuits are impeded by knowledge-biased growth, on account of its promotion of economic inequality.

In focusing exclusively on wellbeing arising from material goods and services, conventional economic theory overlooks this rationale for closed policies. By extending our analysis to include both individualistic market activities and communitarian non-market activities, it becomes possible to recognise two effects of knowledge-biased growth: (i) a rise in individualistic returns, generated by a rise in material living standards and (ii) a rise in social fragmentation, associated with lower communitarian returns and lower status for the low-ability individuals. The attractiveness of closed policies for the disadvantaged segment of the population lies in its promotion of communitarian goals, even if that comes at the expense of a reduced material living standard. Furthermore, the productivity-destroying policy acts to prevent some social fragmentation by making fewer citizens adopt an individualistic identity,[48] though more also adopt

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[47]Note that $\widehat{a}^I - \widetilde{a} = \sqrt{\frac{\varepsilon\pi}{(\varepsilon-\pi)^2} - \frac{2\delta\phi\sigma^I}{\beta\sigma^C(1-\tau)(1-\phi)(\varepsilon-\pi)}} - \sqrt{\frac{\varepsilon\pi}{(\varepsilon-\pi)^2} - \frac{2\phi\alpha\sigma^I}{\beta\sigma^C(1-\tau)(\sigma^I-(1-\phi))(\varepsilon-\pi)}} > 0$ so long as $\alpha > \delta\left(\sigma^I - (1-\phi)\right)/(1-\phi)$ (i.e. the policy is sufficiently inefficient).

[48]This may be seen by

$$d\widehat{a}^I/d\tau = \frac{\phi\sigma^I\left(\delta+\alpha\right)}{(1-\tau)^{3/2}\sqrt{\beta\sigma^C\left(\sigma^I-(1-\phi)\right)\left(\beta\varepsilon\pi\sigma^C\left(1-\tau\right)\left(\sigma^I-(1-\phi)\right) - 2\phi\alpha\sigma^I\left(\varepsilon-\pi\right)\right)}} > 0.$$
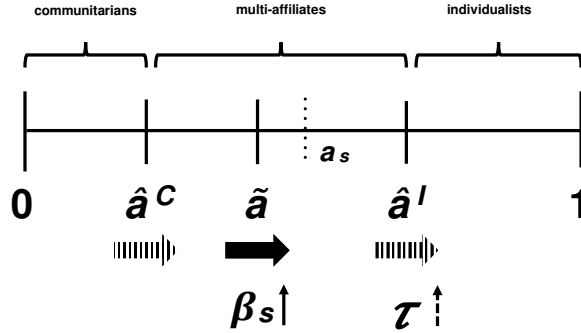
Figure 3: The effect of skill-biased growth on the policy & the policy's effect on identities.

a purely communitarian identity.[49]

Interpreting communitarians as those affiliated with "the ordinary people" extolled by the populists and interpreting individualists as those associated with the highly educated and skilled cosmopolitan elites, our analysis sheds light on the opposition between the people and the elite that underlies the current crisis of liberalism. In particular, our analysis shows how the knowledge-biased growth arising from globalisation and technological change heightens the opposition between these two groups and leaves fewer people valuing diverse values.[50]

As noted, our analysis provides a framework for understanding the sources of the identity-based populism in advanced industrialised countries versus the redistribution-based populism commonly found in Latin America.[51] Proposition 3 suggests that knowledge-biased growth leads to an increase in the number of voters who are concerned about their loss of material status. In our model, the low-ability multi-affiliated voters respond by switching to a communitarian identity and thus come to favour closed policies over open ones. The reason for their shift in policy preferences is that the communitarians – who may be viewed as identity-focused populists – are proponents of policies that are economically and socially closed. These policies are material status-dampening and communitarian identity-enhancing and thus become increasingly favoured by lower-ability multi-affiliates.

However, an alternative policy approach towards addressing the needs of these voters is redistributive policy, which is also status-dampening. Whether politicians choose the identity-based or the redistribution-based policy approach depends on the degree to which their policies can be viewed as identity-enhancing. In various advanced industrialised countries – particularly the US and the UK – populist politicians have given the identity-enhancing aspect of their policies great weight. Protectionism, immigration controls and other closed policies are natural identity-enhancers, since they naturally favour the national insiders to the outsiders. This identity-enhancement has enabled the politicians to reduce the redistributive aspect of their policy package, thereby gaining political support from some higher-income voters, who may prefer enduring the material losses from protectionism to those from redistribution. Traditional right- and left-wing parties have not emphasised the identity-enhancing aspect of their policies and thus the political conflict between these parties centred on redistribution.

Needless to say, our model not meant to be interpreted as a normative argument in favour of closed policies in the presence of knowledge-biased growth. Instead, our analysis points to the need for innovation, education and training policies that reduce the skill bias of growth. This can be done either by improving the skills of the least advantaged people, enabling them better to take advantage of technological advances and globalisation, or by shaping the nature of technological change itself, through subsidising innovations that improve the lot of the disadvantaged.

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[49]Similarly

$$d\widehat{a}^C/d\tau = \frac{\sigma^I \left(\sigma^C - \phi\right) \left(\delta + \alpha\right)}{(1-\tau)^{3/2} \sqrt{\beta \sigma^C \left(1 - \phi\right) \left(\beta \varepsilon \pi \sigma^C \left(1 - \phi\right) \left(1 - \tau\right) - 2\alpha \sigma^I \left(\sigma^C - \phi\right) \left(\varepsilon - \pi\right)\right)}} > 0.$$

[50]We are indebted to an anonymous referee for this important point.

[51]See Rodrik (2018). However, Rodrik's data end before Jair Bolsonaro's election, which marks a departure from redistribution-based towards identity-based populism.

6 Concluding Remarks

While conventional economic theory rests on consumption-oriented utilitarian values, these are not the only values that people cherish. Our analysis has focused on one important additional value: loyalty to one's tribe. In the latter, consumption flowing to oneself is not essential. Instead, sources of group esteem are important, such as displays of national or religious power, even if they reduce material wealth (as is frequently the case under trade war or military conflict).

Our model highlights a new channel whereby economic inequality hampers economic growth. Rising inequality leads to rising social fragmentation, measured by the increasing polarisation of values. The elite progressively abandon communitarian goals and focus increasingly on individualistic material goals. These developments leave the underprivileged worse off in two respects: first, they fall progressively behind in the competition for positional goods and, second, their public goods associated with social allegiances fall, due to the exodus of the privileged from community pursuits. On this account, the elite's rising preoccupation with individualistic material goals is matched by a rising preoccupation of the underprivileged with communitarian goals.

Moral fragmentation deserves attention in economic analysis since, as our model indicates, it can have both economic sources (e.g. globalisation and innovation) and economic consequences (e.g. protectionism).[52] The ideological divides associated with the moral divides are also apparent in the rebirth of strident nationalist and fascist political movements in many countries around the world. Furthermore, the moral divides are evident in the political conflicts concerning gender issues and religious fundamentalism, each of which have important economic consequences. Our analysis also suggests that this moral fragmentation is potentially important for understanding a variety of economic problems, including inequalities, the political economy of populism, and the decline of the welfare state (as the relatively affluent citizens withdraw from communitarian values). Finally, the conflict between rival identities associated with this moral fragmentation has had profound implications for public policy, arising from the working class's rising mistrust of the governing elites, the elite's paternalism and their falling willingness to support welfare services for the poor, and the declining willingness of citizens to contribute voluntarily to public goods and common pool resources.

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[52]These economic and cultural shifts often feed on and reinforce each other. One example is the case of Jewish emancipation in nineteenth-century Europe. Carvalho and Koyama (2016) explain how new economic opportunities polarised communities, some of whom integrated into Gentile society while others adopted an increasingly strict religious orientation.

References

[1] Acemoglu, D., Autor, D., 2011. Skills, tasks and technologies: implications for employment and earnings. In: O. Ashenfelter and D. Card (Eds.), *Handbook Labor Econ.*, 4 (B), 1043–1171. Elsevier, Amsterdam.

[2] Acemoglu, D., Egorov, G., Sonin, K., 2016. A political theory of populism. *Q. J. Econ.*, 128 (2), 771–805.

[3] Autor, D., 2014. Skills, education and the rise of earnings inequality among the 'Other 99 Percent'. *Science*, 344 (6186), 843–851.

[4] Autor, D., Dorn, D., Hanson, G., Song, J., 2014. Trade adjustment: worker-level evidence. *Q. J. Econ.*, 129 (4), 1799–1860.

[5] Akerlof, G.A., Kranton, R.E., 2000. Economics and Identity. *Q. J. Econ.*, 115 (3), 715–753.

[6] Akerlof, G.A., Kranton, R.E., 2010. *Identity Economics*. Princeton University Press, Princeton.

[7] Akerlof, R., 2017. Value formation: the role of esteem. *Game. Econ. Behav.*, 102, 1–19.

[8] Algan, Y., Guriev, S., Papaioannou, E., Passari, E., 2017. The European trust crisis and the rise of populism. *Brookings Papers on Economic Activity*, Fall, 309–400.

[9] Arnorsson, A., Zoega, G., 2018. On the causes of Brexit. *Eur. J. Polit. Econ.*, 55, 301–323.

[10] Atkinson, A., Piketty, T., Saez, E., 2011. Top incomes in the long run of history. *J. Econ. Lit.*, 49 (1), 3–71.

[11] Autor, D., Dorn, D., Hanson, G., Majlesi, K., 2017. Importing political polarization? The electoral consequences of rising trade exposure. *NBER Working Papers*, 22637.

[12] Baldwin, R., 2016. *The Great Convergence: Information technology and the new globalization*. Harvard University Press, Cambridge, MA.

[13] Becker, S., Fetzer, T., Novy, D., 2017. Who voted for Brexit? a comprehensive district-level analysis. *Econ. Policy*, 32 (92), 601–650.

[14] Bosson, J.K., Lakey, C.E., Campbell, W.K., Zeigler-Hill, V., Jordan, C.H., Kernis, M.H., 2008. Untangling the links between narcissism and self-esteem: a theoretical and empirical review. *Soc. Personal. Psychol. Compass*, 2 (3), 1415–1439.

[15] Boyce, C.J., Brown, G.D.A., Moore, S.C., 2010. Money and happiness: rank of income, not income, affects life satisfaction. *Psychol. Sci.*, 21 (4), 471–475.

[16] Brennan, G., Hamlin, A., 1998. Expressive voting and electoral equilibrium. *Publ. Choice*, 95 (1-2), 149–175.

[17] Caplan, B., 2007. *The Myth of the Rational Voter: Why democracies choose bad policies*. Princeton University Press, Princeton.

[18] Carvalho, J,-P., Koyama, M., 2016. Jewish emancipation and schism: economic development and religious change. *J. Comp. Econ.*, 44 (3), 562–584.

[19] Cavaille, C., Marshall, J., 2019. Education and anti-Immigration attitudes: evidence from compulsory schooling reforms across Western Europe. *Am. Polit. Sci. Rev.*, 113 (1), 254–263.

[20] Citrin, J., Green, D.P., Muste, C., Wong, C., 1997. Public opinion toward immigration reform: the role of economic motivations. *J. Politics*, 59 (3), 858–881.

[21] Colantone, I., Stanig, P., 2018a. Global competition and Brexit. *Am. Polit. Sci. Rev.*, 112 (2), 201–218.

[22] Colantone, I., Stanig, P., 2018b. The trade origins of economic nationalism: import competition and voting behavior in Western Europe. *Am. J. Polit. Sci.*, 62 (4), 936–953.

[23] Collier, P., 2018. *The Future of Capitalism*. Penguin, London.

[24] Collier, P., 2019. Diverging identities: A model of class formation. *Social Macroeconomics Working Paper Series*, SM-WP-2019.

[25] Dal Bó, E.D., Finan, F., Folke, O., Persson, T., Rickne, J., 2018. Economic losers and political winners: Sweden's radical right. Mimeo. http://perseus.iies.su.se/~tpers/papers/CompleteDraft190301.pdf

[26] De Vries, C.E., 2018. The cosmopolitan-parochial divide: changing patterns of party and electoral competition in the Netherlands and beyond. *J. Eur. Publ. Policy*, 25, 1541–1565.

[27] d'Hombres, B., Nunziata, L., 2016. Wish you were here? quasi-experimental evidence on the effect of education on self-reported attitude toward immigrants. *Eur. Econ. Rev.*, 90, 201–224.

[28] Eatwell, R., Goodwin, M., 2018. *National Populism: The revolt against liberal democracy*. Pelican Books, London.

[29] Eichengreen, B., 2018. *The populist temptation: Grievance and political reaction in the modern era*. Oxford University Press, Oxford.

[30] Fetzer, T., 2019. Did austerity cause Brexit? *Am. Econ. Rev.*, 109 (11), 3849–3886.

[31] Frank, R.H., 1999. *Luxury Fever: Why money fails to satisfy in an era of excess*. Free Press, New York.

[32] Funke, M., Schularick, M., Trebesch, C., 2020. Do populist leaders matter? populist governments and economic decline, 1900-2018. Univ. of Bonn, mimeo.

[33] Gennaioli, N., Tabellini, G., 2018. Identity, beliefs, and political conflict. CEPR Discussion Paper no. 13390.

[34] Gidron, N., Hall, P.A., 2017. The politics of social status: economic and cultural roots of the populist right. *Brit. J. Sociol.*, 68, 557–584.

[35] Gidron, N., Hall, P.A., 2019. Populism as a problem of social integration. *Comp. Polit. Stud.*, 53 (7), 1027–1059.

[36] Goldin, C., Katz, L.F., 2008. *The Race Between Education and Technology*. Harvard University Press, Cambridge, MA.

[37] Goodwin, M., Heath, O., 2016. *Brexit Vote Explained: Poverty, low skills and lack of opportunities*. Joseph Rowntree Foundation, London.

[38] Green, J., 2013. *Moral Tribes: Emotion, reason, and the gap between us and them*. Penguin Press, London.

[39] Guiso, L., Herrera, H., Morelli, M., Sonno, T., 2017. Demand and supply of populism. Mimeo, http://www.eief.it/files/2017/02/wp-173.pdf

[40] Guriev, S., Papaioannou, E., 2020. The political economy of populism. CEPR Discussion Paper no. 14433.

[41] Haidt, J., 2012. *The Righteous Mind*. Allen Lane, London.

[42] Hainmueller, J., Hiscox, M.J., 2006. Learning to love globalization: education and individual attitudes toward international trade. *Int. Org.*, 60 (2), 469–498.

[43] Hainmueller, J., Hiscox, M.J., 2007. Educated preferences: explaining attitudes toward immigration in Europe. *Int. Org.*, 61 (2), 399–442.

[44] Han, K.J., 2016. Income inequality and voting for radical right-wing parties. *Elect. Stud.*, 42, 54–64.

[45] Harrisson, A., McLaren, J., McMillan, M., 2011. Recent perspectives on trade and inequality. *Annu. Rev. Econ.*, 3 (1), 261–289.

[46] Hillman, A.L., 2010. Expressive behavior in economics and politics. *Eur. J. Polit. Econ.*, 26 (4), 403–418.

[47] Hillman, A.L., 2011. Expressive voting and identity: evidence from a case study of a group of U.S. voters. *Publ. Choice*, 148, 249.

[48] Hirsch, F., 1976. *Social Limits to Growth.* Harvard University Press, Cambridge, MA.

[49] Hudders, L., Pandelaere, M., 2012. The silver lining of materialism: the impact of luxury consumption on subjective well-being. *J. Happiness Stud.*, 13 (3), 411–437.

[50] Inglehart, R.F., Norris, P., 2016. Trump, Brexit and the rise of populism. Faculty Research Working Paper Series, RWP16-026, Harvard Kennedy School.

[51] Kesebir, S., Haidt, J., 2010. Morality. In: *Handbook Soc. Psychol.*, S. Fiske, D. Gilbert, & G. Lindzey (Eds.), 5th ed., pp. 797–832. Wiley, Hoboken, NJ.

[52] Lechler, M., 2019. Employment shocks and anti-EU sentiment. *Eur. J. Polit. Econ.*, 59, 266–295.

[53] Mansfield, E.D., Mutz, D.C., 2015. Support for free trade: self-interest, sociotropic politics, and out-group anxiety. *Polit. Econ. Int. Trade*, 46, 169–201.

[54] Markus, H.R., Kitayama, J.d.S., 1991. Culture and the Self: implications for cognition, emotion and motivation. *Psychol. Rev.*, 98, 224–53.

[55] Mayda, A.M., 2006. Who is against immigration? a cross-country investigation of individual attitudes toward immigrants. *Rev. Econ. Stat.*, 88 (3), 510–530.

[56] Medrano, J.D., Braun, M., 2011. Uninformed citizens and support for free trade. *Rev. Int. Polit. Econ.*, 19 (3), 448–476.

[57] McPherson, M., Smith-Lovin, L., Brashears, M.E., 2006. Social isolation in America: changes in core discussion networks over two decades. *Am. Sociol. Rev.*, 71 (3), 353–375.

[58] Mudde, C., 2004. The populist Zeitgeist. *Gov. Oppos.*, 39, 541–563.

[59] Mudde, C., 2007. *Populist Radical Right Parties in Europe.* Cambridge University Press, Cambridge, UK.

[60] Müller, J-W., 2016. What is Populism? Philadelphia: University of Pennsylvania Press.

[61] Mutz, D., 2018. Status threat, not economic hardship, explains the 2016 presidential vote. *P. Natl. Acad. Sci. USA.*, 115 (19) E4330–E4339.#

[62] Napier, J.L., Jost, J.T., 2008. The "Antidemocratic Personality" revisited: a cross-national investigation of working-class authoritarianism. *J. Soc. Issues*, 64 (3), 595–617.

[63] Norris, P., Inglehart, R., 2019. *Cultural Backlash: Trump, Brexit and authoritarian populism.* Cambridge University Press, Cambridge, UK.

[64] OECD, 2019. Income inequality (indicator), https://doi.org/10.1787/459aa7f1-en

[65] Phelan, J., Link., B., Stueve, A., Moore, R., 1995. Education, social liberalism and economic cons-drvatism: attitudes toward homeless people. *Am. Sociol. Rev.*, 60 (1), 126–140.

[66] Pierce, R., Schott, P., 2016. The surprisingly swift decline of US manufacturing employment. *Am. Econ. Rev.*, 106 (7), 1632–1662.

[67] Pieters, R., 2013. Bidirectional dynamics of materialism and loneliness: not just a vicious cycle. *J. Consum. Res.*, 4 (1), 615–631.

[68] Pittaluga, G.B., Seghezza, E., 2018. Resource rents and populism in resource-dependent economies. *Eur. J. Polit. Econ.*, 54, 83–88.

[69] Pissarides, C., Skordis, J., Thomas, A., Atwell, S., De Lyons, J., 2019. Automation, politics, and the future of work. *Institute for the Future of Work Discussion Paper*.

[70] Polk, J., Rovny, J., Bakker, R., Edwards, E., Hooghe, L., Jolly, S., Koedam, J., Kostelka, F., Marks, G., Schumacher, G., Steenbergen, M., Vachudova, M., Zilovic, M., 2017. Explaining the salience of anti-elitism and reducing political corruption for political parties in Europe with the 2014 Chapel Hill Expert Survey data. *Res. Polit.*, 1 (1), 1–9.

[71] Poutvaara, P., Steinhardt, M.F., 2018. Bitterness in life and attitudes towards immigration. *Eur. J. Polit. Econ.*, 55, 471–490.

[72] Putnam, R.D., 2000. *Bowling Alone: The collapse and revival of American community.* Simon and Schuster, Chicago.

[73] Rahn, W.M., Transue, J.E., 1998. Social trust and value change: the decline of social capital in American youth, 1976-1995. *Polit. Psychol.*, 19 (3), 545–565.

[74] Roberts, J.A., Clement, A., 2007. Materialism and satisfaction with over-all quality of life and eight life domains. *Soc. Indic. Res.*, 82 (1), 79–92.

[75] Rodrik, D., 2014. When ideas trump interests: preferences, worldviews, and policy innovations. *J. Econ. Perspect.*, 28 (1), 189–208.

[76] Rodrik, D., 2018. Populism and the economics of globalization. *J. Int. Bus. Policy*, 1 (1–2), 12–33.

[77] Ryan, L., Dziurawiec, S., 2001. Materialism and its relationship to life satisfaction. *Soc. Indic. Res.*, 55 (2), 185–197.

[78] Sandel, M., 2012. *What Money Can't Buy.* Allen Lane, London.

[79] Satz, D., 2010. *Why Some Things Should Not be for Sale.* Oxford University Press, Oxford.

[80] Schwartz, S.H., 1994. Are there universal aspects in the structure and contents of Human values? *J. Soc. Issues*, 50 (4), 19–45.

[81] Shayo, M., 2009. A model of social identity with an application to political economy: nation, class, and redistribution. *Am. Polit. Sci. Rev.*, 103 (2), 147–174.

[82] Shweder, R.A., Borne, E., 1984. Does the concept of the Person vary cross-culturally? In: *Cultural Theory*, R. Shweder & R. LeVine (Eds.), pp. 158–199. Cambridge University Press, Cambridge, UK.

[83] Stubager, R., 2008. Education effects on authoritarian-libertarian values: a question of socialization. *Brit. J. Sociol.*, 59 (2), 327–350.

[84] Surridge, P., 2016. Education and liberalism: pursuing the link. *Oxford Rev. Educat.*, 42 (2), 146–164.

[85] Skidelsky, R., Skidelsky, E., 2012. *How Much is Enough?* Other Press, New York.

[86] Snower, D.J., Bosworth, S.J., 2016. Identity-driven cooperation versus competition. *Am. Econ. Rev.: Papers and Proceedings*, 106 (5), 420–424.

[87] Stiglitz, J., 2012. *The Price of Inequality.* W.W. Norton and Company, New York.

[88] Tönnies, F., 1887/2001. *Community and Civil Society*, J. Harris & M. Hollis (trans.). Cambridge University Press, Cambridge, UK.

[89] Triandis, H.C., 1995. *Individualism and Collectivism.* Westview Press, Boulder, CO.

[90] Twenge, J.M., 2006. *Generation Me.* Free Press, New York.

[91] Twenge, J.M., Campbell, W. K., 2010. *The Narcissism Epidemic.* Free Press, New York.

[92] van Lange, P.A.M., Otten, W., De Bruin, E.M.N., Joireman, J.A., 1997. Development of prosocial, individualistic, and competitive orientations: theory and preliminary evidence. *J. Pers. Soc. Psychol.*, 73, 733–746.

[93] Wilkinson, W., 2019. The density divide: Urbanization, polarization, and populist backlash. Niskanen Center Research Paper. https://www.niskanencenter.org/wp-content/uploads/2019/09/Wilkinson-Density-Divide-Final.pdf

Appendix

We now relax the assumption from Section 4 that the baseline technology is skill-unbiased ($\beta_u = \beta_s = \beta$) with the assumption that the baseline technology may be knowledge-biased. Here are expressed the general cases of the important equations with this assumption relaxed. Firstly, the boundary between the multi-affiliated identity group and the individualistic identity group, defined by the marginal individual $\widehat{a}^I$ as expressed in Equation 9:

$$\widehat{a}^I = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon \pi}{(\varepsilon - \pi)^2} + \frac{a_s \left(2 + a_s\right) \left(\beta_s - \beta_u\right) \pi}{\beta_s \left(\varepsilon - \pi\right)} - \frac{2 \phi \alpha \sigma^I}{\beta_s \sigma^C \left(\sigma^I - (1 - \phi)\right) \left(\varepsilon - \pi\right)}}.$$

We can similarly show the boundary between the multi-affiliated identity group and the communitarian identity group (and correspondingly the size of the communitarian group), defined by the marginal individual $\widehat{a}^C$ as expressed in Equation 10:

$$\widehat{a}^C = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon \pi}{(\varepsilon - \pi)^2} - \frac{\left(1 + a_s\right) \left(3 + a_s\right) \left(\beta_s - \beta_u\right) \varepsilon}{\beta_u \left(\varepsilon - \pi\right)} - \frac{2 \sigma^I \left(\sigma^C - \phi\right) \alpha}{\beta_u \sigma^C \left(1 - \phi\right) \left(\varepsilon - \pi\right)}}.$$

Next, we show how the marginal individual $\widehat{a}^I$ is now less skilled when knowledge-biased growth occurs, represented by an increase in β_s holding β_u constant, as seen in Equation 11:

$$\frac{d\widehat{a}^I}{d\beta_s} = -\frac{\left(\sigma^I - (1 - \phi)\right) \left(2 + a_s\right) a_s \beta_u \pi \sigma^C + 2 \phi \alpha \sigma^I}{2 \beta_s \sqrt{\beta_s \sigma^C \left(\sigma^I - (1 - \phi)\right) \left(\left(\sigma^I - (1 - \phi)\right) \left(\beta_s \varepsilon \pi \sigma^C + \left(\varepsilon - \pi\right) \pi a_s \left(2 + a_s\right) \left(\beta_s - \beta_u\right)\right) - 2 \alpha \phi \sigma^I \left(\varepsilon - \pi\right)\right)}}$$
$$< 0.$$

This means that more of the skilled population "pulls away" from communitarian values. Likewise, the marginal individual $\widehat{a}^C$ is now more skilled when knowledge-biased growth occurs, as seen in Equation 12:

$$\frac{d\widehat{a}^C}{d\beta_s} = \frac{\left(1 - a_s\right) \left(3 + a_s\right) \left(1 - \phi\right) \sigma^C \varepsilon}{2 \sqrt{\beta_u \sigma^C \left(1 - \phi\right) \left(\beta_u \sigma^C \left(1 - \phi\right) \varepsilon \pi - \left(\varepsilon - \pi\right) \varepsilon \left(1 - a_s\right) \left(3 + a_s\right) \left(1 - \phi\right) \left(\beta_s - \beta_u\right) - 2 \alpha \sigma^I \left(\sigma^C - \phi\right) \left(\varepsilon - \pi\right)\right)}}$$
$$> 0,$$

i.e. more of the upper end of the unskilled population gravitates towards pure communitarianism as they are "left behind". The consequences for political economy are seen in the change in the marginal voter $\widetilde{a}$, who is just indifferent to adopting the productivity-destroying policy, given by Equation 19:

$$\widetilde{a} = \frac{\varepsilon}{\varepsilon - \pi} - \sqrt{\frac{\varepsilon \pi}{(\varepsilon - \pi)^2} - \frac{a_s \left(2 + a_s\right) \left(\beta_s - \beta_u\right) \pi}{\beta_s \left(\varepsilon - \pi\right)} - \frac{2 \delta \phi \sigma^I}{\beta_s \sigma^C \left(1 - \phi\right) \left(\varepsilon - \pi\right)}}.$$

Since all with ability $a_i < \widetilde{a}$ are predicted to vote for this policy, we can see how the size of the political constituency for productivity-destroying policies grows with knowledge-biased growth from Equation 20:

$$\frac{d\widetilde{a}}{d\beta_s} = \frac{2 \delta \phi \sigma^I + a_s \left(2 + a_s\right) \left(1 - \phi\right) \beta_u \pi \sigma^C}{2 \beta_s \sqrt{\beta_s \sigma^C \left(1 - \phi\right) \left(\left(1 - \phi\right) \pi \left(\beta_s \sigma^C \varepsilon + a_s \left(2 + a_s\right) \left(\beta_s - \beta_u\right) \left(\varepsilon - \pi\right)\right) - 2 \delta \phi \sigma^I \left(\varepsilon - \pi\right)\right)}} > 0.$$