Blissful Ignorance?
Myopia and Heterogeneity

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Abstract

This work examines two economies that are identical except for their interpretation of a transitory shock, affecting the aggregate Total Factor Productivity (TFP). The population consists of homogeneous workers and credit-constrained heterogeneous entrepreneurs, with the exogenous shock temporarily increasing inequality within the latter group. We observe that, in the transition path, compared to the perfect-foresight economy, myopia: (i) reduces workers' savings, (ii) reduces aggregate wealth, and (iii) sharply increases workers' marginal propensity to consume (MPC). However, no expectation rule dominates the other. Finally, we prove that, under myopic expectations, transitory shocks in inequality can lead to instability.

Keywords: myopia, inequality, stability, heterogeneous agents, transition dynamics.
JEL codes: E22, E70, D83, D84.

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1 Introduction

This paper examines how myopic and perfect foresight agents respond to the same real transitory shock. We analyze an exogenous shock to the inequality parameter, which, in turn, propagates to the aggregate total factor productivity (TFP). Specifically, we investigate the interaction between myopia and borrowing constraints in a credit-constrained economy, and how these effects are intensified by heterogeneity. We incorporate myopia, in a similar fashion to that outlined by Gabaix (2020), into the analytical framework proposed by Itskhoki and Moll (2019).

The economy consists of two types of infinite-lived agents. Workers, who are homogeneous, consume, save by holding corporate bonds, and make decisions regarding labor supply. Entrepreneurs, who vary in their assets and productivity, consume and accumulate wealth, facing borrowing constraints that limit their access to capital. Based on the realization of a random productivity shock, they choose whether to engage in production.

For each scenario we consider, whether agents are myopic or perfectly foresee the future path of inequality, workers and entrepreneurs agree on the expected transition dynamics of the shocked fundamental.

The dynamics triggered by an inequality shock crucially depend on how knowledge of current inequality aligns with its myopic (or perfect foresight) steady state, producing transitional responses. Present inequality shapes production independently of the level of myopia, while its expected evolution also impacts the process by creating a sequence of time-contingent Jacobians (Auclert et al., 2020, 2021).

When myopia is present, workers experience higher consumption and reduced savings during the transition, while entrepreneurs face a higher minimum level of idiosyncratic productivity, making market entry more difficult. Overall, myopic expectations tend to generate more pronounced transitional dynamics compared to those under perfect foresight.

To summarize, this paper makes two main contributions by focusing on transitory shocks. First, it examines the role of myopic expectations in short-term adjustments and how real shocks can produce transitional effects with opposite signs, depending on whether expectations are myopic or perfectly foresighted. Second, it shows that with myopic expectations, even transitory shocks can result in long-term instability.

Related literature We build on the models developed in Buera and Moll (2015) and Itskhoki and Moll (2019). Buera and Moll (2015) investigates the aggregate effects of a credit crunch under different heterogeneity scenarios, underscoring the crucial role that heterogeneity plays in understanding business cycle origins. Itskhoki and Moll (2019) extends this framework to continuous time, focusing on optimal development

policies and dynamic taxation. While incorporating myopia, our model retains the core elements of the closed-economy version analyzed in Itskhoki and Moll (2019), which serves as our benchmark. Similarly, Banerjee and Moll (2010) introduces the concepts of intensive and extensive capital misallocation, distinguishing between the quantity of capital and its quality of use, and attributes persistent inefficiencies to financial constraints and heterogeneity.

Our approach models heterogeneity among entrepreneurs as a productivity shock with a Pareto distribution, which aligns with recent literature that provides both theoretical insights and empirical evidence, such as Gabaix et al. (2016), Jones and Kim (2018), Itskhoki and Moll (2019), and Achdou et al. (2022). This modeling approach captures the extreme variability in entrepreneurial productivity, highlighting that only those with sufficiently high productivity levels participate in production at the aggregate level.

We model myopia following Gabaix (2020) and Angeletos and Huo (2021), both of which assume the presence of a so-called *behavioral* agent, an economic agent who perceives a distorted version of the law of motion for certain variables. Gabaix (2020) analyzes an economy with partial myopia toward distant, atypical events, using a microfounded *cognitive discounting* parameter to explore how bounded rationality affects monetary and fiscal policy within a New Keynesian model. Angeletos and Huo (2021) draws a parallel between the equilibrium effects of incomplete information and two types of behavioral distortions: myopia, which involves further discounting of the future, and anchoring, where current behavior is influenced by past behavior. Similarly, Farhi and Gabaix (2020) proposes a theory of optimal taxation that considers behavioral agents within a framework that captures various cognitive biases, while Carroll et al. (2020) examines consumers with *sticky expectations* about the macroeconomy, resulting in sluggish aggregate consumption due to imperfect attention to economic shocks.

Outline The paper is structured as follows. In Section 2, we outline the structure of the economy, set the information framework, and derive both individual and aggregate optimal choices. In Section 3, we examine the competitive equilibrium under conditions of myopia and perfect foresight, analyzing the transition path following a (transitory) shock in inequality. Section 4 concludes.

2 Model

Consider an infinite-horizon closed economy operating in continuous time. As in Itskhoki and Moll (2019), there are two types of agents, each with unit mass: workers and entrepreneurs. Workers are homogeneous, consuming (c) and working during each

period, supplying a variable quantity of labor hours (ℓ), and may save a fraction of their income by holding an asset (b). Entrepreneurs are heterogeneous, differing in both their productivity (z) and asset holdings (a), and run the production process. At each date, entrepreneurs hire workers at a competitive wage w and rent capital at rate r. Firms combine labor (n) and capital (k) to produce a final good, which serves as the numeraire and is traded in a competitive market. For simplicity, we will omit time subscripts unless they are essential for clarity.

Myopia and perfect foresight Consider the shocked parameter

$$\dot{\tilde{\eta}} = \rho_\eta \left(\eta - \tilde{\eta}\right), \tag{1}$$

where $\rho_\eta > 0$ and η is a given steady-state value. Parameter $\tilde{\eta}$ plays an important role in the model presented in the next section, representing entrepreneurial heterogeneity, which decreases as $\tilde{\eta}$ increases.

Borrowing the notation from Gabaix (2020), let $\overline{m} \in [0, 1]$ denote the cognitive discounting parameter, which reflects the extent of attention to the future. We express the perceived law of motion, in terms of $\overline{m}$, as[1]

$$\tilde{\eta}_{t^+} = \tilde{\eta}_t + \overline{m}\, \dot{\tilde{\eta}}_t \, \mathrm{d}t. \tag{2}$$

Using (2), we can describe two extreme scenarios of informative settings using the bounds of $\overline{m}$. For $\tau \geq t$, a fully myopic (M) agent, i.e., $\overline{m} = 0$, incorrectly forecasts the evolution of $\tilde{\eta}$ by perceiving that future values will remain the same as its current realization, $\mathbb{E}_t^M \left[\tilde{\eta}_\tau\right] = \tilde{\eta}_t$.[2] In contrast, a perfect foresight (PF) agent, i.e., $\overline{m} = 1$, correctly predicts the evolution of $\tilde{\eta}$, and its convergence to η in the long run, $\mathbb{E}_t^{PF} \left[\tilde{\eta}_\tau\right] = \tilde{\eta}_\tau$.

A direct implication is that, at each time t, a myopic agent evaluates the long-run shocked parameter to be

$$\lim_{\tau \to \infty} \mathbb{E}_t^M \left[\tilde{\eta}_\tau\right] = \tilde{\eta}_t,$$

whereas a perfect foresight agent evaluates

$$\lim_{\tau \to \infty} \mathbb{E}_t^{PF} \left[\tilde{\eta}_\tau\right] = \eta.$$

As a result, a fully myopic agent perceives any transitional shock as structural.

[1] Since Gabaix (2020) and Angeletos and Huo (2021) analyze discrete-time models, we need to derive the continuous-time equivalent of the myopic law of motion. However, unlike their works, we introduce the myopic coefficient in the differential part rather than in the expected variable itself. We achieve this by expanding the updating process described in (1). A similar approach is described in Bauer et al. (2009), while Brevik and d'Addona (2013) quantitatively evaluates the potential effects of uncertainty on the business cycle.

[2] This formulation is similar to the sticky expectations in Carroll et al. (2020).

This characterization is particularly useful because $\overline{m}$ adjusts the degree of myopia, allowing outcomes to range smoothly between two extremes. That is, the model can produce a continuous spectrum of outcomes between the hypothetical extremes of full myopia and perfect foresight. In fact, for any $\overline{m} \in [0,1]$, we can use (1) to iterate forward and write

$$\begin{aligned}\lim_{\tau\to\infty} \mathbb{E}_t^{\overline{m}}\left[\tilde{\eta}_\tau\right] &= \tilde{\eta}_t + \overline{m} \lim_{\tau\to\infty} \int_t^\tau \dot{\tilde{\eta}}_s \,\mathrm{d}s, \\ &= (1-\overline{m})\,\tilde{\eta}_t + \overline{m}\,\eta, \end{aligned} \tag{3}$$

which is a convex combination of the myopic and the perfect-foresight expectations.[3]

In the following, we define the (time-varying) set of perceived steady states as $\widehat{\eta} = \{\tilde{\eta}, \eta\}$.

Agents, optimality conditions, and aggregation We omit the conditional operators $\mathbb{E}_t^M$ and $\mathbb{E}_t^{PF}$ for the sake of exposition. At each time t, $\tilde{\eta}_t$ is observed independently of the expectation rule.

The representative worker's preferences are given by

$$\int_t^\infty e^{-\rho(\tau-t)} \left[\ln c_\tau - \psi \frac{\ell_\tau^{1+\phi}}{1+\phi}\right] \mathrm{d}\tau, \tag{4}$$

where ρ is the workers' discount rate, and $\psi, \phi > 0$. The worker is subject to the flow budget constraint

$$c + \dot{b} = rb + w\ell. \tag{5}$$

The resulting optimality conditions are

$$w = \psi c \ell^\phi, \tag{6}$$

$$\frac{\dot{c}}{c} = r - \rho, \tag{7}$$

along with the proper transversality condition.

Each entrepreneur has a logarithmic instantaneous utility

$$\int_t^\infty e^{-\delta(\tau-t)} \ln c_\tau^e \,\mathrm{d}\tau, \tag{8}$$

[3]We used the fact that $\lim_{\tau\to\infty} \int_t^\tau \dot{\tilde{\eta}}_s \,\mathrm{d}s = \eta - \tilde{\eta}_t$. Since myopia linearly affects the differential increments, as shown in (2), this linearity is preserved with myopic forecasting and can easily accommodate shocks in $\overline{m}$. A similar result is found in Kohlhas and Walther (2021) on asymmetric attention and in Huo et al. (2024) in the context of ambiguity.

where δ is the entrepreneurs' discount rate, subject to the flow budget constraint

$$c^e + \dot{a} = \pi(a, z) + ra. \tag{9}$$

The optimal consumption for each entrepreneur is given by $c^e = \delta a$.[4] Equation (9) describes the dynamics of entrepreneurial wealth, resulting in a time-dependent distribution of assets, denoted by $\mathcal{G}_t(a)$.

We assume that idiosyncratic productivity follows a Pareto distribution with a shape parameter $\tilde{\eta} > 1$.[5] Productivity shocks are i.i.d. over time. The distribution function $\mathcal{F}(z)$ is supported on the interval $[1, \infty)$, with its density function given by $\tilde{\eta} z^{-\tilde{\eta}-1}$.

Financial markets are incomplete due to entrepreneurs facing a collateral constraint defined by $k \leq \lambda a$, where $\lambda \geq 1$. Higher values of λ are associated with a more efficient financial market (Gatt, 2024).

The entrepreneur's production function is

$$A(zk)^{\alpha} n^{1-\alpha}, \tag{10}$$

with $\alpha \in (0, 1)$, while profits are

$$A(zk)^{\alpha} n^{1-\alpha} - wn - rk.$$

Aggregating we obtain $\underline{z}$, the minimum level of idiosyncratic productivity to enter the market, as

$$\underline{z} = \max\{\zeta, 1\}, \tag{11}$$

where $\zeta \equiv \frac{r}{\alpha}\left[\frac{w}{1-\alpha}\right]^{\frac{1-\alpha}{\alpha}} A^{-\frac{1}{\alpha}}$.[6] Condition (11) states that the cut-off level of z is the maximum of the zero-profit productivity, ζ, and the lower bound of the distribution $\mathcal{F}(z)$, which is 1. For simplicity, we restrict our attention to the parameter space (and initial conditions) such that $\underline{z} = \zeta > 1$.

Let x represent the aggregate level of entrepreneurs' assets, specifically as $x = \int a \, \mathrm{d}i$, then $\int c^e \, \mathrm{d}i = \delta x$. The aggregate levels of capital and labor demand are given by

$$\kappa = \lambda \underline{z}^{-\tilde{\eta}} x, \tag{12}$$

$$\ell = \lambda \frac{\tilde{\eta}}{\tilde{\eta} - 1} \left[\frac{1-\alpha}{w} A\right]^{\frac{1}{\alpha}} \underline{z}^{1-\tilde{\eta}} x. \tag{13}$$

[4] See Itskhoki and Moll (2019, Online Appendix A).

[5] The shape parameter $\tilde{\eta}$ determines the tail heaviness of the distribution and is inversely correlated with heterogeneity. Empirically, the right tail of the wealth distribution in many countries is Pareto-shaped (Jones and Kim, 2018).

[6] Derived by setting individual profits to zero and solving for z.

Factor shares are given by

$$w\ell = (1-\alpha)y, \tag{14}$$

$$r\kappa = \frac{\alpha(\tilde{\eta}-1)}{\tilde{\eta}}y, \tag{15}$$

with aggregate profits equal to $\frac{\alpha}{\tilde{\eta}}y$. The aggregate production is

$$y = A\tilde{\Theta}\, x^{\frac{\alpha}{\tilde{\eta}}} \kappa^{\frac{\alpha(\tilde{\eta}-1)}{\tilde{\eta}}} \ell^{1-\alpha}, \tag{16}$$

with $\tilde{\Theta} \equiv \left(\frac{\tilde{\eta}}{\tilde{\eta}-1}\right)^{\alpha} \lambda^{\frac{\alpha}{\tilde{\eta}}}$. Notice that the aggregate Total Factor Productivity (TFP), $A\tilde{\Theta}$, is decreasing in $\tilde{\eta}$.

The law of motion of the entrepreneurs' wealth is

$$\dot{x} = \frac{\alpha}{\tilde{\eta}}y + (r-\delta)x. \tag{17}$$

Finally, the feasibility constraint is given by

$$\dot{\kappa} = y - \delta x - c. \tag{18}$$

3 Equilibrium

At each time t, given the initial aggregate levels of entrepreneurial wealth x_t, workers' savings b_t, the observed $\tilde{\eta}_t$, and each expectation rule, M or PF, a competitive equilibrium consists of a sequence of aggregate variables $\{x, b, \kappa, y, c, \ell, \underline{z}\}_{\tau \geq t}$, a wage sequence $\{w\}_{\tau \geq t}$, and an interest rate sequence $\{r\}_{\tau \geq t}$ such that: (i) workers maximize (4) subject to (5), taking prices as given, (ii) entrepreneurs maximize (8) subject to (9), taking prices as given, (iii) market clearing conditions hold, (iv) entrepreneurial wealth evolves according to (17), and (v) aggregate wealth evolves according to (18).

Perceived steady state(s) Depending on whether agents have myopic or perfect foresight expectations, that is, whether $\widehat{\eta}$ equals $\tilde{\eta}$ or η, different perceived steady states arise. We use $\widehat{\eta}$ to encompass both cases. Notice that the perceived steady states are time-dependent. In fact, the presence of myopic expectations leads agents to expect convergence to different steady states, which depends not only on the level of myopia, $\overline{m}$, but also on the time-distance of the economy from the steady state, as indicated by (3).

Compactly, we have

$$\widehat{c} = \left(1 - \frac{\delta}{\delta-\rho}\frac{\alpha}{\widehat{\eta}}\right)\widehat{y},$$

$$\widehat{x} = \frac{1}{\delta - \rho}\frac{\alpha}{\widehat{\eta}}\widehat{y},$$
$$\widehat{\kappa} = \frac{\alpha}{\rho}\frac{\widehat{\eta} - 1}{\widehat{\eta}}\widehat{y},$$
$$\widehat{\ell} = \left[\frac{1-\alpha}{\psi}\left(1 - \frac{\delta}{\delta - \rho}\frac{\alpha}{\widehat{\eta}}\right)^{-1}\right]^{\frac{1}{1+\phi}},$$
$$\widehat{y} = A\widehat{\Theta}\widehat{x}^{\frac{\alpha}{\widehat{\eta}}}\widehat{\kappa}^{\frac{\alpha(\widehat{\eta}-1)}{\widehat{\eta}}}\widehat{\ell}^{1-\alpha},$$

with $\widehat{\Theta} \equiv \left(\frac{\widehat{\eta}}{\widehat{\eta}-1}\right)^{\alpha}\lambda^{\frac{\alpha}{\widehat{\eta}}}$ and $\widehat{r} = \rho$. Combining $\widehat{c}$ with the properties of the Pareto distribution, and since we are focusing on $\widehat{z} > 1$, we can state the following.

Lemma 1

The maximal heterogeneity span is given by

$$\max\left\{\frac{\delta\alpha}{\delta - \rho}, 1\right\} < \widehat{\eta} < 1 + \frac{\rho\lambda}{\delta - \rho}.$$

Moreover, to have $\widehat{b} > 0$, $(\delta - \rho)\widehat{\eta} > \delta$ must hold.

It is convenient to express all endogenous variables in (7), (17), and (18) as functions of c, x, and κ. Equating (6) and (14) at the expected steady state, aggregate production can be rewritten as

$$\widehat{y} = A^{\frac{\omega}{\alpha}}\Omega\widehat{x}^{\frac{\omega}{\widehat{\eta}}}\widehat{\kappa}^{\frac{\omega(\widehat{\eta}-1)}{\widehat{\eta}}}\widehat{c}^{1-\frac{\omega}{\alpha}},$$

where $\omega \equiv \alpha\frac{1+\phi}{\alpha+\phi}$ and $\Omega \equiv \left[\frac{1-\alpha}{\psi}\right]^{\frac{1-\alpha}{\alpha+\phi}}\widehat{\Theta}^{\frac{\omega}{\alpha}}$. Similarly, $\widehat{r}$ is obtained via (15).

The dynamics of the economy, linearized around each perceived steady state, is described by the following system

$$\begin{bmatrix}\dot{c}\\ \dot{x}\\ \dot{\kappa}\end{bmatrix} = \widehat{\mathbf{J}}\begin{bmatrix}c - \widehat{c}\\ x - \widehat{x}\\ \kappa - \widehat{\kappa}\end{bmatrix},$$

where the $\widehat{\mathbf{J}}$ is the Jacobian matrix,[7]

$$\widehat{\mathbf{J}} = \begin{bmatrix} \left(1 - \frac{\omega}{\alpha}\right)\rho & \frac{(\delta-\rho)\widehat{\eta}-\delta\alpha}{\alpha\widehat{\eta}}\omega\rho & \frac{\omega(\widehat{\eta}-1)-\widehat{\eta}}{\alpha\widehat{\eta}}\frac{(\delta-\rho)\widehat{\eta}-\delta\alpha}{(\delta-\rho)(\widehat{\eta}-1)}\rho^2 \\ -\frac{\omega-\alpha}{(\delta-\rho)\widehat{\eta}-\delta\alpha}\delta & \left(\frac{\omega}{\widehat{\eta}} - 1\right)\delta + \rho & \frac{\rho\omega}{\widehat{\eta}} + \frac{\omega(\widehat{\eta}-1)-\widehat{\eta}}{\widehat{\eta}(\delta-\rho)(\widehat{\eta}-1)}\rho^2 \\ \left(1 - \frac{\omega}{\alpha}\right)\frac{(\delta-\rho)\widehat{\eta}}{(\delta-\rho)\widehat{\eta}-\delta\alpha} - 1 & \frac{\omega}{\alpha}(\delta - \rho) - \delta & \frac{\omega}{\alpha}\rho \end{bmatrix}. \tag{19}$$

To ensure stability, $\widehat{\mathbf{J}}$ must have one eigenvalue with a positive real part, associated with the forward-looking variable, c, and two eigenvalues with negative real parts, associated with the predetermined variables, x and κ.

[7] Auclert et al. (2020) examines both the full-information Jacobian and its counterpart with cognitive discounting.

Proposition 1

Assume the economy is locally stable at η. The stability properties of a myopic (perfect-foresight) economy are (are not) affected by transitory shocks in inequality.

Proof. By direct inspection of the entries of (19), we have $\frac{\partial \widehat{\mathbf{J}}^{M}}{\partial \tilde{\eta}} \neq \mathbf{0}$ and $\frac{\partial \widehat{\mathbf{J}}^{PF}}{\partial \tilde{\eta}} = \mathbf{0}$. Moreover, according to Lemma 1, if the transitory shocked levels of $\tilde{\eta}$ fall below the threshold, the myopic economy will switch to instability. ■

Proposition 1 is similar to the indeterminacy result of Lovo and Polemarchakis (2010), which introduces myopia in monetary equilibria with representative agents. Differently from that work, we consider an economy characterized by heterogeneity and two types of capital, workers' savings and entrepreneurial wealth, and show that, due to the strong cognitive discounting associated with myopia, even a transitory shock may be sufficient to cause instability.

Notice that although Lemma 1 guarantees instability when the shocked levels of $\widehat{\eta}$ are below the threshold, Proposition 1 suggests that instability can also result from less severe transitory shocks.

Finally, Proposition 1 links extreme cognitive discounting, driven by short-run dynamics, to $\widehat{\mathbf{J}}$ – a linearization around the long-run dynamics – thereby revealing how myopia generates an interplay between transitory shocks and time-varying expected steady states.

Transitory shock We now simulate the dynamics generated by an inequality shock, which, as stressed above, ultimately shows up in the aggregate TFP.[8] The first-order approximation impulse-response functions (IRFs) describe short-run dynamics.[9] We assume that the economies are in their perfect-foresight steady state, and, at time t, there is an inequality shock (-10%).[10] $\tilde{\eta}$ falls and recovers over time according to (1).[11]

The (identical) negative shocks on $\tilde{\eta}$ that hit the economies are shown in Figure 1 while Figure 2 reports the IRFs.

It is helpful to begin by focusing on the jump variable, c. In both cases, M or PF, we observe an increase in workers' consumption (2e). However, with myopia, the increase in consumption is sharper and shorter than in the perfect-foresight scenario, and it is accompanied by a reduction in savings and hours worked. The latter effects are exactly reversed when agents have perfect foresight expectations (Figure 2b and Figure 2h). The increase in myopic workers' consumption is triggered by the expectation

[8] Our numerical example uses the following benchmark parameter values: $\alpha = 1/3$, $\delta = 0.1$, $\rho = 0.03$, $\lambda = 5$ (Gatt, 2024), $\phi = 1.22$ (Chetty et al., 2011), $\psi = 1$, and $\eta = 2$.

[9] See the Appendix for the derivation.

[10] Since $\tilde{\eta}$ is the heterogeneity parameter, Figure 1 describes a temporary increase in inequality.

[11] We set $\rho_\eta = 0.1$, yielding an exponential recovery, given by (1), equal to $e^{-\rho_\eta} \approx 0.9$, which is standard in discrete-time models.

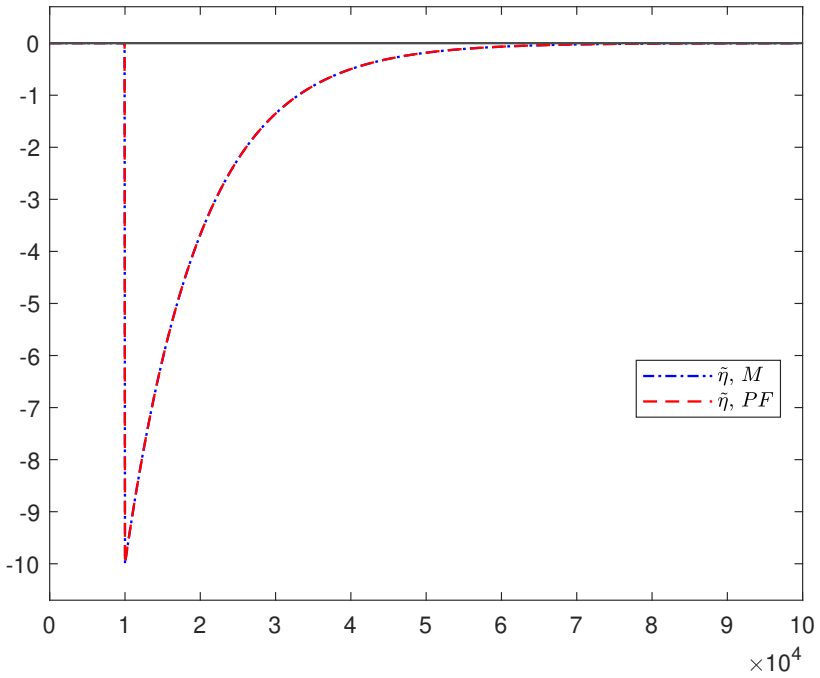


Figure 1: Inequality shock.
Myopic (blue) and perfect foresight (red).

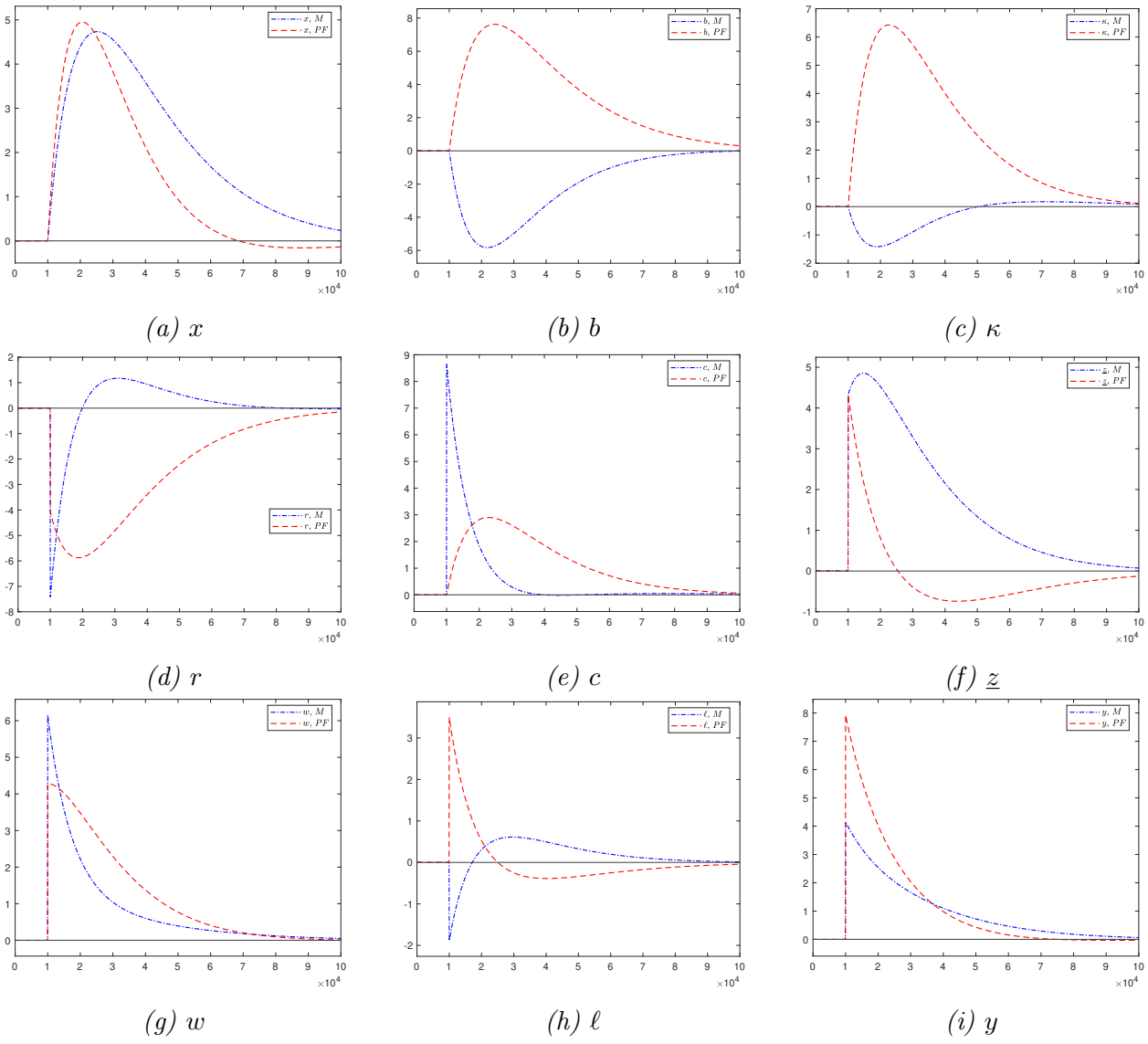
that the increase in production would be permanent (2i).[12] The combined temporary increase in production and decrease in workers' savings yields a result opposite to that found by Aiyagari (1994). The inequality shock crowds out entrepreneurs from the market, leaving only those with higher productivity levels (2f), which increases the demand for labor and subsequently wages (2g). The higher level of profits pushes entrepreneurial wealth up, as shown in Figure 2a, resulting in contrasting effects on aggregate capital (2c). Indeed, aggregate capital increases with perfect foresight but decreases with myopia. Lastly, the initial effect on the interest rate is negative in both cases (2d), driven by the excess supply of capital under perfect foresight and by an initial demand shortage under myopia, which, as the shock resolves, disappears and implies a higher interest rate.

Notice that, particularly for workers' savings, aggregate capital, and labor, the responses to the same shock can exhibit different signs depending on the informational structure. This variability does not occur in the HANK framework with myopia presented by Angeletos and Huo (2021).

In the Appendix, we show the sensitivity of IRFs with respect to different levels of myopia by varying $\overline{m}$ according to (3).

We now evaluate the IRFs of instantaneous utilities, u^w and u^e, for the representative

[12]This is the high-MPC effect as described in Lian (2023).



(a) x *(b) b* *(c) κ*

(d) r *(e) c* *(f) $\underline{z}$*

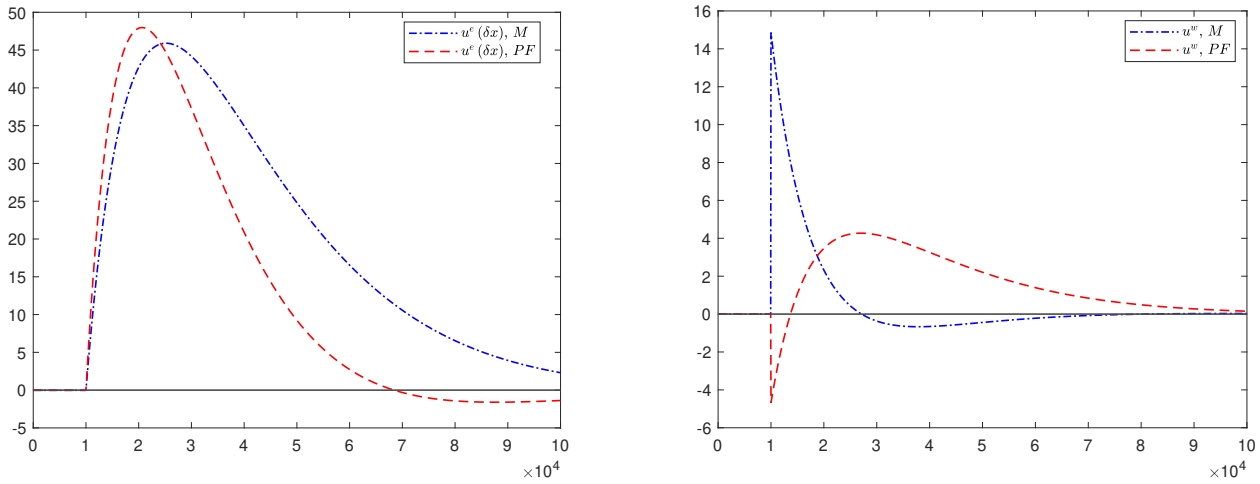
(g) w *(h) ℓ* *(i) y*

Figure 2: Responses to an inequality shock.
Myopic (blue) and perfect foresight (red).

worker and the average entrepreneur, respectively, as defined in (4) and (8).[13] Since entrepreneurs have logarithmic preferences, Figure 3a conveys the same information as Figure 2a, while Figure 3b shows that the overall effect on workers' utility, combining both consumption utility and work disutility, exhibits an alternating pattern in both scenarios.

Next, we perform the following exercise. We compute the overall effects of the

[13]As we can only track the average of $\mathcal{G}_t$ over time and not its detailed evolution, this approach provides a useful approximation.



(a) $u^e(\delta x)$ *(b)* u^w

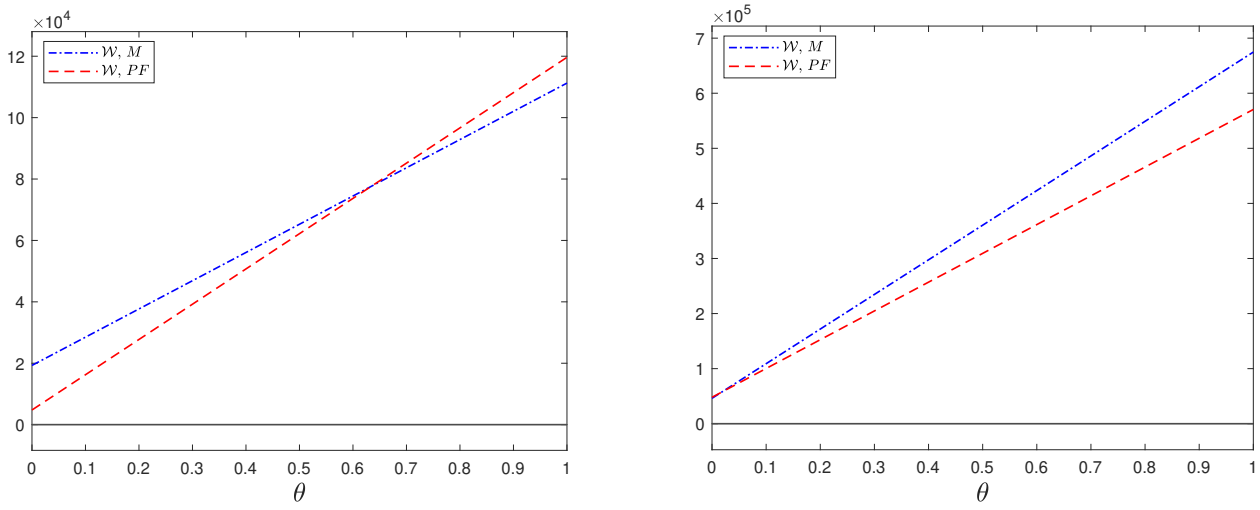
Figure 3: Instantaneous utility responses to an inequality shock. Myopic (blue) and perfect foresight (red).

inequality shock under the two expectation rules. Thus, we introduce the Negishi welfare weights, $\theta \in [0, 1]$, to reflect the relative importance of entrepreneurs and workers in the time- and agent-aggregate welfare function, $\mathcal{W}$, defined as

$$\mathcal{W} = \theta \int_t^\infty e^{-\varrho(\tau - t)} \ln(\delta x_\tau)\, \mathrm{d}\tau + (1 - \theta) \int_t^\infty e^{-\varrho(\tau - t)} \left[\ln c_\tau - \psi \frac{\ell_\tau^{1+\phi}}{1+\phi} \right] \mathrm{d}\tau.$$

The key difference from (4) and (8) is that both utilities are discounted by a common factor ϱ. We alternatively consider the case where $\varrho = \delta$, aligned with the entrepreneurs' discount rate, or $\varrho = \rho$, which corresponds to the workers' rate. Figures 4a and 4b represent the discounted cumulative effect of the inequality shock for the two values of ϱ, as θ spans its entire range.

The crossing dynamics of the IRFs, observed in Figures 2a, 2e, and 2h, persist when we analyze the aggregate effects in $\mathcal{W}$ (4a and 4b), meaning that no expectation rule produces dominating transitional dynamics. However, for a discount rate of δ, as in Figure 4a, perfect foresight expectations only lead to higher welfare dynamics for high values of θ. In contrast, for a discount rate of ρ, Figure 4b shows that myopic expectations lead to more favorable welfare transitions for most values of θ, with a ranking inversion occurring only as θ gets close to 0. Finally, as it is clear from Figure 4, regardless of the discount rate or whether agents are myopic, $\mathcal{W}$ increases in θ, that is, as more weight is assigned to entrepreneurs, consistent with the relative sizes of Figures 3a and 3b.



(a) $\varrho = \delta$ *(b)* $\varrho = \rho$

Figure 4: Cumulative welfare response to an inequality shock. Myopic (blue) and perfect foresight (red).

4 Conclusion

In this paper, we study two credit-constrained economies with heterogeneous entrepreneurs, as in Itskhoki and Moll (2019), differing in their interpretation of (transitory) shocks. When the economies are hit by the same real shock, agents with perfect foresight correctly forecast its evolution, whereas myopic agents assume that, at each time t, the shocked parameter will always equal the most recent observed realization – an extreme case described by Gabaix (2020).

We analyze a temporary shock in the inequality parameter and prove that, unlike in the perfect foresight case, in a myopic setting, the size of the shock affects not only the time-varying expected steady state but also the stability condition. Additionally, we show that if the temporary inequality parameter falls below a certain threshold, the economy becomes unstable with certainty. If the parameter is above this threshold, the economy may or may not become unstable.

Finally, we explore the effects of such an inequality shock in the two informational settings while avoiding instability. We observe that myopia reduces workers' savings, aggregate capital, and initially, hours worked. Interestingly, with perfect foresight, the same variables experience a positive transitional change.

In general, myopia leads to sharper transitory adjustments, and no single expectation rule *dominates* the other during the transition.

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Appendix

Aggregation Profit maximization gives

$$
\begin{aligned}
k(a,z) &= \lambda a \, \mathbb{I}\left(z \geq \underline{z}\right), \\
n(a,z) &= \left[\frac{1-\alpha}{w} A\right]^{\frac{1}{\alpha}} z k(a,z), \\
\pi(a,z) &= \alpha \left[\frac{1-\alpha}{w}\right]^{\frac{1-\alpha}{\alpha}} A^{\frac{1}{\alpha}} z k(a,z) - r k(a,z),
\end{aligned}
$$

together with the appropriate transversality condition.

Define $\mathcal{E} = \mathcal{G} \times \mathcal{F}$ as the joint distribution describing both entrepreneurs' assets and productivity. Aggregate demand for capital and labor, given by (12) and (13), are obtained by integrating

$$
\begin{aligned}
\int \int_{z \geq \underline{z}} k(a,z) \, \mathrm{d}\mathcal{E} &= \lambda x \int_{z \geq \underline{z}} \mathrm{d}\mathcal{F}, \\
\int \int_{z \geq \underline{z}} n(a,z) \, \mathrm{d}\mathcal{E} &= \lambda \left[\frac{(1-\alpha)}{w} A\right]^{\frac{1}{\alpha}} x \int_{z \geq \underline{z}} z \, \mathrm{d}\mathcal{F}.
\end{aligned}
$$

Writing the individual production function in terms of k only

$$
A \left[\frac{1-\alpha}{w} A\right]^{\frac{1-\alpha}{\alpha}} z k,
$$

and aggregating,

$$
y = A \left(\frac{\tilde{\eta}}{\tilde{\eta} - 1}\right)^{\alpha} \underline{z}^{\alpha} \kappa^{\alpha} \ell^{1-\alpha},
$$

yields (16) once (12) is substituted.

Stability A first-order approximation around each (time-varying) element of $\widehat{\eta} = \{\tilde{\eta}, \eta\}$ yields $\widehat{\mathbf{J}}$.

Since we focus on stable solutions, the nature of the endogenous variables implies that two of the eigenvalues of $\widehat{\mathbf{J}}$ must have negative real parts and one positive real part. Diagonalize $\widehat{\mathbf{J}}$ as $\widehat{\mathbf{J}} = \widehat{\mathbf{Q}} \widehat{\mathbf{\Lambda}} \widehat{\mathbf{Q}}^{-1}$, where $\widehat{\mathbf{Q}}$ and $\widehat{\mathbf{\Lambda}}$ are, respectively, the matrix of eigenvectors and the eigenvalues of $\widehat{\mathbf{J}}$. Define the change of variables

$$
\mathbf{g} = \widehat{\mathbf{Q}}^{-1} \begin{bmatrix} c - \widehat{c} \\ x - \widehat{x} \\ \kappa - \widehat{\kappa} \end{bmatrix} \rightarrow \dot{\mathbf{g}} = \widehat{\mathbf{Q}}^{-1} \begin{bmatrix} \dot{c} \\ \dot{x} \\ \dot{\kappa} \end{bmatrix} = \widehat{\mathbf{\Lambda}} \mathbf{g} \rightarrow \mathbf{g}_t = e^{\widehat{\mathbf{\Lambda}} t} \mathbf{g}_0.
$$

Stability is reached when $\lim_{t \to \infty} \mathbf{g}_t = \begin{bmatrix} 0 & 0 & 0 \end{bmatrix}^{\top}$. When the diagonal elements of $\widehat{\mathbf{\Lambda}}$ have negative real parts, the exponential pushes the equation to 0. Otherwise,

call $\widehat{\Lambda}_U > 0$ the real part of the exploding eigenvalue in $\widehat{\mathbf{\Lambda}}$, and $\begin{bmatrix}\widehat{Q}_c & \widehat{Q}_x & \widehat{Q}_\kappa\end{bmatrix}$ the associated left-eigenvector. Again, stability implies

$$\lim_{t\to\infty} e^{\widehat{\Lambda}_U t}\begin{bmatrix}\widehat{Q}_c & \widehat{Q}_x & \widehat{Q}_\kappa\end{bmatrix}\begin{bmatrix}c-\widehat{c}\\ x-\widehat{x}\\ \kappa-\widehat{\kappa}\end{bmatrix} = 0.$$

Because $\lim_{t\to\infty} e^{\widehat{\Lambda}_U t} = \infty$, it must be that

$$\begin{bmatrix}\widehat{Q}_c & \widehat{Q}_x & \widehat{Q}_\kappa\end{bmatrix}\begin{bmatrix}c-\widehat{c}\\ x-\widehat{x}\\ \kappa-\widehat{\kappa}\end{bmatrix} = 0,$$

giving

$$c = \widehat{c} - \frac{\widehat{Q}_x(x-\widehat{x}) + \widehat{Q}_\kappa(\kappa-\widehat{\kappa})}{\widehat{Q}_c}. \tag{20}$$

Notice that (20) depends on the set of steady-state expectations, $\widehat{\eta}$.

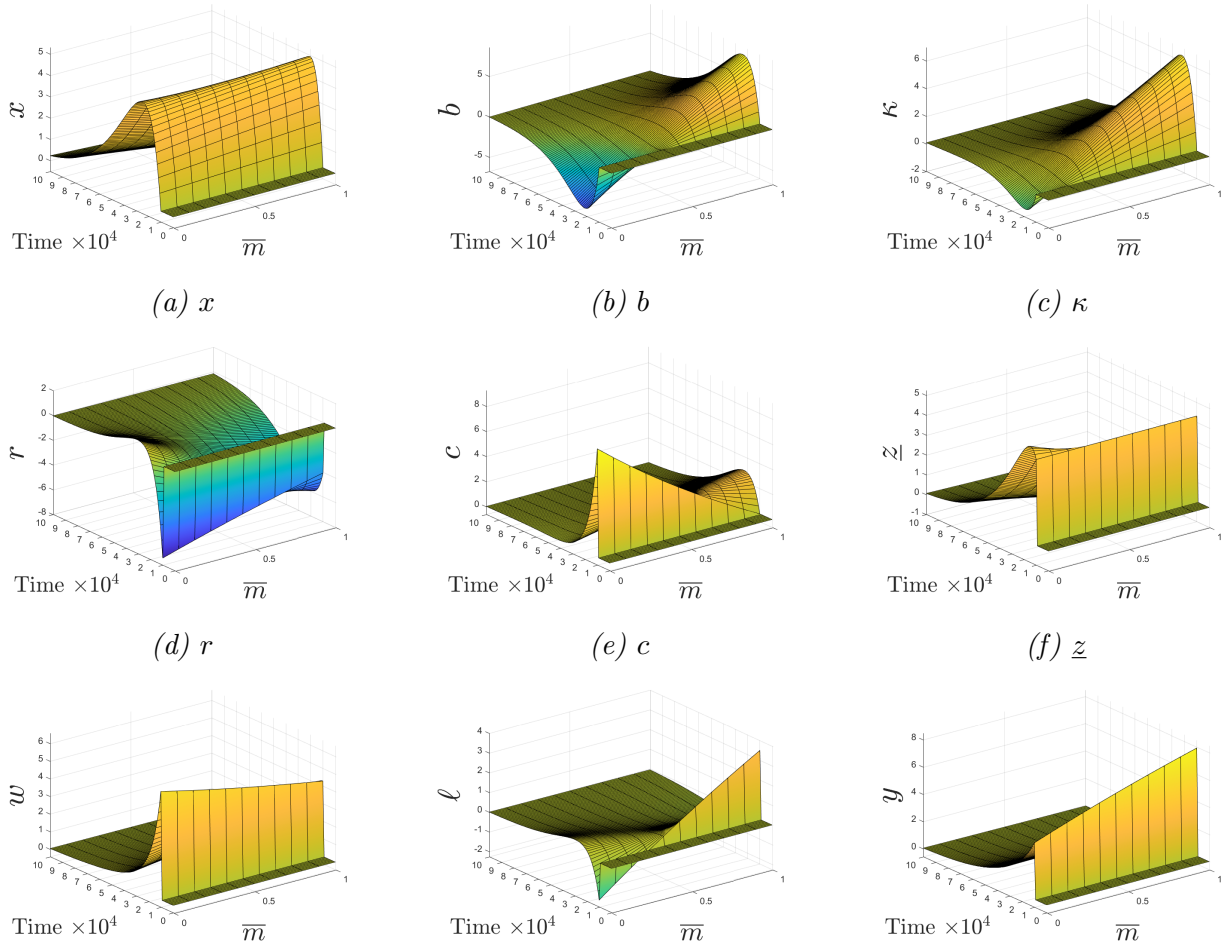
The transversality conditions hold, since the one for workers can be written as

$$\lim_{\tau\to\infty} \mathbb{E}_t^M\left[e^{-r_\tau(\tau-t)}b_\tau\right] = \lim_{\tau\to\infty} \mathbb{E}_t^{PF}\left[e^{-r_\tau(\tau-t)}b_\tau\right] = 0,$$

where the sufficient conditions are $\lim_{\tau\to\infty} r_\tau > 0$ and $\lim_{\tau\to\infty} |b_\tau| < \infty$, both of which are guaranteed by the stability implied by $\widehat{\mathbf{J}}$, conditional on each expectation rule. The transversality condition for entrepreneurs follows the same reasoning.

Sensitivity Figure 5 mirrors Figure 2, but it takes into account the myopic parameter $\overline{m}$ across its entire admissible range, $\overline{m} \in [0, 1]$.

Since (3) is a convex combination, changing $\overline{m}$ simply adjusts its weights. Thus, the results remain qualitatively unchanged, though the dependence on the level of myopia becomes evident. As inferred from the combination of equation (3) and the inverted signs observed for b and ℓ in Figure 2, there is a level of myopia at which savings and labor are virtually unaffected by the transitory inequality shock. Interestingly, the wobbling behavior of the interest rate, r, arises from contrasting dynamics during the adaptation phase, where the perfect foresight fraction induces a negative effect initially and a positive one later, while myopia consistently exerts a negative effect. A similar dynamic can be observed in workers' consumption, c.



(a) x *(b) b* *(c) κ*

(d) r *(e) c* *(f) $\underline{z}$*

(g) w *(h) ℓ* *(i) y*

Figure 5: Responses to an inequality shock for different $\overline{m}$.