

THE CONSEQUENCES OF ANTIMICROBIAL RESISTANCE FOR INVESTORS



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Antimicrobial resistance (AMR) is one of the most pressing global health challenges today. It arises when bacteria, viruses, fungi, and parasites evolve to resist the effects of medications that once effectively treated infections. The growing prevalence of AMR – which, based on 2021 data, was found to be responsible for more deaths (1.14 million annually) than HIV/AIDS, malaria or most cancers – threatens to nullify decades of medical advancements, leading to higher mortality rates, prolonged hospital stays, and increased healthcare costs. Beyond its public health implications, AMR has profound macroeconomic and company financial consequences, impacting everything from national economies to corporate profitability.



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Macroeconomic Consequences of Antimicrobial Resistance

The World Bank estimates that by 2050, AMR could cause a 3.8% reduction in global GDP, equivalent to a loss of US\$6.1 trillion annually. These losses are primarily experienced by healthcare systems as they grapple with the increased burden of resistant infections. Though indirect impacts are felt across the broader economy because all sectors employ workers and the productivity of workers is a key determinant of output, especially in labor-intensive industries.

Increased Healthcare Costs

One of the most immediate and visible impacts of AMR is the substantial rise in healthcare costs. As infections become harder to treat, patients require longer hospital stays, more expensive drugs, and more intensive care. The cost of treating resistant infections can be significantly higher than treating non-resistant ones leading to the inefficient expenditure of limited healthcare time and resources.

Impact on Labor Productivity

AMR also has the potential to severely impact labor productivity. Infections caused by resistant pathogens can lead to prolonged illness or disability, reducing the availability of workers and increasing absenteeism. A study by the European Centre for Disease Prevention and Control (ECDC) estimated that AMR-related infections caused around 35,000 deaths annually in Europe alone, resulting in approximately a million disability-adjusted life years and significantly fewer workers/consumers as a result. Global productivity losses associated with AMR were estimated by the World Health Organization (WHO) in 2024 to be US\$ 191 billion annually.

Such significant and avoidable loss of life is a tragedy. In purely dispassionate economic terms, it also results in a loss of productivity with ripple effects across economies, particularly in low- and middle-income countries where labor-intensive industries are a significant part of the economy.

Other Macro Effects

The World Bank predicts a drop of between 1.1% and 3.8% in global exports by 2050 because of AMR. Livestock and related products, which account for around 2% of global GDP, are particularly vulnerable to trade disruptions. The World Health Organization (WHO) has also warned that by 2030, AMR could force up to 24 million people into extreme poverty and livestock losses could be equal the consumption needs for 476 million people, mostly in lower middle income countries (LMICs). Furthermore, the global nature of AMR poses risks as the fear of spreading resistant infections could lead to increased screening and quarantine measures, disrupting global supply chains and reducing worker availability.



Company Financial Consequences of Antimicrobial Resistance

Almost 10% of global equity markets, or US\$ 14.6 trillion, is estimated to be exposed to AMR-related risks. The industries most impacted by AMR are those operating in the food value chain (particularly related to livestock/meat), the health value chain and life and health insurance. The industrial risks and opportunities associated with AMR are nuanced and will vary by company but are summarized on a qualitative basis and at the sector level in the table and sections below.

Vertical	GICS (Sub) Industry (Group)	Risks	Opportunities
Food	Agriculture Products & Services		
	Food Retail & Restaurants		
Health	Health Care Facilities		
	Pharmaceuticals, Biotechnology & Life Sciences		
Insurance	Life & Health Insurance		
	Managed Healthcare		
Scale	High Risk		High Opp.

Source: Authors based in part on "Health & Wealth: An Investor's Guide to Antimicrobial Resistance" (August 2024)

Food Vertical Risks and Opportunities

The agricultural sector is another industry that could face significant financial consequences due to AMR. Approximately 73% of global antibiotics sales are for livestock farming to prevent disease and promote growth. This practice contributes significantly to the development of resistant bacteria. As regulators impose stricter controls on antibiotic use in agriculture (as with the European Union's Farm to Fork Strategy), companies may face higher production costs as they shift to alternative methods of disease prevention. Additionally, if AMR leads to widespread outbreaks of resistant infections in livestock, it could devastate production, leading to financial losses and higher food prices. Additionally, food companies may lose market share as consumer demands for antibiotic-free meat increase.

However, with disruption also comes opportunity. There are a variety of methods already available but less widely applied which could be used to reduce antibiotic use in animals while achieving similar outcomes. These include vaccines, probiotics and immune modulators and can variously be used to prevent disease, promote growth or treat disease. Companies successfully developing and/or employing these techniques could stand to benefit vis-à-vis their competitors slower to transition away from antibiotics. Similarly, companies developing meat alternatives or focusing on organic practices may benefit as consumer sentiment shifts.

Health Vertical Risks and Opportunities

For healthcare providers, AMR represents a significant financial burden. Hospitals and clinics must allocate more resources to treating resistant infections, including purchasing more expensive second- or third-line antibiotics and investing in advanced diagnostic tools. This increase in operational costs can strain hospital budgets, particularly in public health systems with limited funding. The financial strain on healthcare providers could lead to a reduction in available services or an increase in healthcare prices, making care less accessible to patients. Advancing solutions that prevent infections in healthcare settings will thus be crucial, given that 50% of resistant infections are acquired in hospitals.

The pharmaceutical industry is at the forefront of the fight against AMR, but the financial implications are complex. On the one hand, the demand for new antibiotics and alternative treatments presents an opportunity for growth. However, the development of new antibiotics is fraught with challenges. The high cost of research and development, combined with the relatively short treatment duration and low profitability of antibiotics, has led many pharmaceutical companies to abandon antibiotic research altogether. The result is a market failure where the supply of new antibiotics does not meet the growing demand, potentially leading to shortages and higher prices.

To address this market failure, a subscription model for buying antimicrobials to make them more commercially viable is under consideration in the US and has already been established in the UK. Such incentives could attract the necessary investment for smaller pharmaceutical/biotech firms to continue their work, bring their treatments to market, and generate profits.

Despite this market failure, companies continue to innovate. To wit, the Access to Medicine Foundation's AMR Programme has tracked four innovative late-stage drug development projects. These drugs target drug-resistant gonorrhoea, urinary tract, intra-abdominal, respiratory, and invasive fungal infections and could play a key role in addressing AMR's immediate impacts. However, drug development is only the first hurdle – distribution is key to addressing AMR's worst impacts which are largely occurring in developing countries – and related companies should be encouraged to develop relationships with emerging market manufacturing and distribution partners.

Outside of antibiotic development, investors could also explore opportunities in areas such as rapid diagnostics to support the deployment of quick and appropriate treatment and reduce antibiotic use in cases of uncertainty.

Insurance Vertical Risks and Opportunities

The insurance industry is also likely to be affected by AMR, as the increased prevalence of resistant infections could lead to higher healthcare claims and death rates. Life and health insurers may thus need to adjust their risk models and premiums to account for the growing threat of AMR. The broader insurance industry could face additional losses. Travel insurers may see increased payouts for customers needing medical treatment or accommodation closures due to disease outbreaks. Farming and agriculture insurers are already seeing a rise in animal disease claims and AMR could exacerbate this trend. Business interruption insurers may face more claims from companies forced to halt operations due to infectious diseases at or near their premises.

The rise of AMR could also lead to the development of new insurance products designed to mitigate the financial risks associated with resistant infections or new forms of agriculture/alternative meat production.

Reputational Risks and First Mover Advantage

Companies across various industries also face reputational risks related to AMR. As public awareness of AMR grows, consumers and investors are increasingly scrutinizing corporate practices that contribute to the problem, such as the overuse of antibiotics in agriculture or the failure of medicine companies to invest in new antibiotics. Companies that are perceived as contributing to AMR could face consumer boycotts, legal action, and a decline in shareholder value. Conversely, companies that take proactive steps to combat AMR, such as reducing antibiotic use in supply chains or investing in research, could enhance their reputation and gain a competitive advantage.

Global Efforts to Mitigate the Systemic Risk of Antimicrobial Resistance

The WHO introduced a global action plan in 2015. Some governments have developed associated national action plans. Key targets in such plans include reducing antimicrobial use in animals, preventing and controlling infections, public education, advancing diagnostics, accelerating new antimicrobial and vaccine development, improving international collaboration, and expanding the 'One Health' approach.

This year, the UN General Assembly held only the second-ever High-Level Meeting on AMR on 26th September, to drive renewed impetus to this critical global health challenge. Following the meeting, global leaders issued a **political declaration**. It stated that *"The intersectoral challenge of AMR demands a One Health systems approach that unites human, animal, plant, and environmental health, backed by robust and accountable global AMR governance. Sustainable, consistent and diversified financing is essential to support the clear priorities and measurable targets for decisive action, while recognizing local, national and regional contexts."*

Specific commitments included reducing human deaths associated with AMR annually by 10% by 2030 and ensuring that at least 70% of antibiotics used for human health globally belong to the WHO Access group antibiotics with relatively minimal side effects and lower potential to cause AMR. In relation to agriculture and animal health, the commitments for 2030 are to "meaningfully reduce the quantity of antimicrobials used globally in the agri-food systems by prioritizing and funding the implementation of measures to prevent and control infections and ensuring prudent, responsible and evidence-based use of antimicrobials in animal health." The declaration underscores the need to prevent and address the discharge of antimicrobials into the environment.

To support multinational efforts, in 2020, two non-governmental organisations (FAIRR and ATMF) and the UK Department of Health and Social Care launched the Investor Action on AMR (IAAMR) initiative. IAAMR published an investor statement encouraging governments and policymakers to tackle AMR and develop an international action plan (which is still open to signatories). BNP Paribas Asset Management signed this statement, alongside 80 investor signatories representing US\$13 trillion in combined assets.

AMR is not just a health crisis; it is an economic crisis in the making. The potential macroeconomic consequences, and the financial consequences of AMR for companies, are far-reaching. They could decrease productivity, increase poverty and strain corporate profitability in various sectors. Given such widespread implications, AMR constitutes a systemic risk to investment. Investors would therefore be wise to consider AMR issues in their investment decisions and stewardship strategies.

Investors can also be proactive, by, for example, joining FAIRR's collaborative engagement programmes to tackle AMR along the value chain, as BNPP AM has, and by joining IAAMR as an investor partner.

Addressing AMR will require a coordinated global effort, involving governments, healthcare providers, and pharmaceutical companies. Investors also have a key role to play and can encourage improvements in the market through their capital allocation and stewardship decisions. Without decisive action, not only could the human toll be catastrophic but so could the financial toll of AMR for nation states, companies and investors.

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