Is it possible for useful, perhaps even deep, insights to be gained from a well-drawn diagram, even without knowing the equations and parameters? Take a position and defend it.

I would say that it is possible to gain meaningful without parametrics, however, the insights will be limited to the structure and agents involved, and to a very limited and potentially incorrect degree, you can get a glimpse of the mechanics behind a system. Without parameters, one might find an unexpected agent and their connections by use of a non-specific schematic, but not the quality nor the quantity by which they affect the performance of the system. One can gain insights into supply exchanges but cannot quantify that information. One can get an approximation of the direction of flows, but not vector.