Divisibility properties of the number of $\mathbf{F}_p$-points of schemes defined over $\mathbf{Z}$

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Let X be a scheme of finite type over $\mathbf{Z}$. For any prime p we consider $N_X(p)$ the number of $\mathbf{F}_p$-points of the scheme $X/\mathbf{F}_p$. Given a in $\mathbf{Z}$, we study the set $\{p : p \nmid N_X(p) - a\}$.

In case $\dim X$ is small (lower than 3), we give a simple criterion for this set to be infinite and in this case we prove it has positive lower density.